

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam
NAAC reaccredited at 'A' level

2018-19



1.3.2

VALUE ADDED/ CERTIFICATE PROGRAMS

**Brochure and Syllabus along with
Course completion certificate**

2018-19

LIST OF VALUE ADDED/ CERTIFICATE PROGRAMS

2018-19

S.No.	Title of the Program	Course Code
1.	Machine Learning	MLVACO1
2.	Reasoning Ability	MAT-VAC-02
3.	Introduction to Nano Chemistry	CHEV1C1
4.	Digital Marketing	COM-DM-02
5.	Managerial Economics	ECO-ME-02
6.	Journalism	JOU002
7.	Mushroom Cultivation	BOTCCMCO2
8.	Competitive English	CE401C
9.	Introduction to Media Management	MMT001
10.	Basic Segments of Environmental Chemistry	CHEV201
11.	Organic Farming	ZOCCOF03
12.	Yoga	YOG001
13.	Particle Physics	PHYV2C



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ADUSUMILLI GOPALAKRISHNAIAH & SUGARCANE GROWERS SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521 165, Krishna District, Andhra Pradesh

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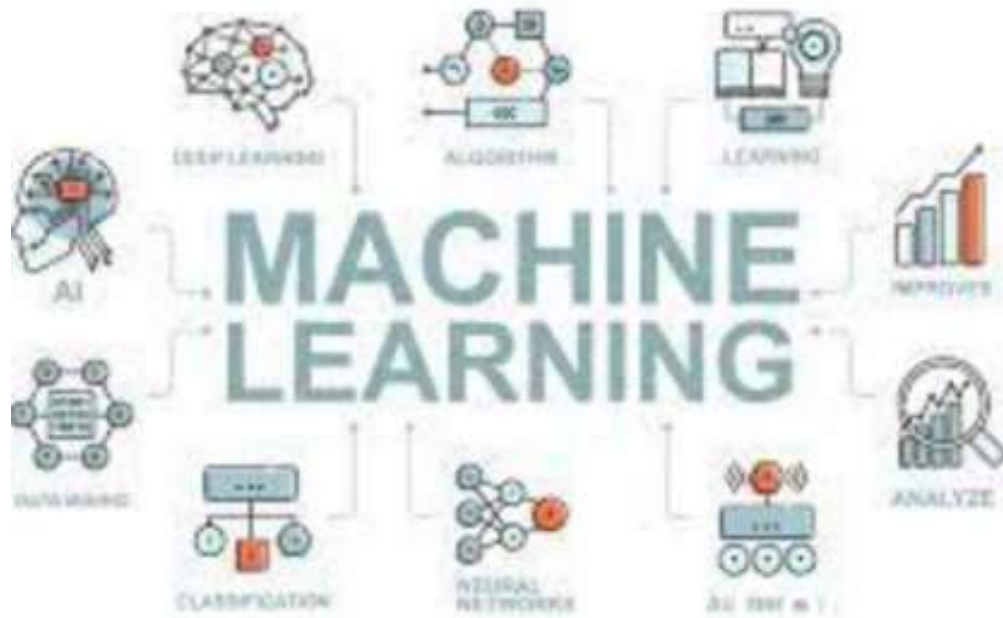


VAD COURSE :MACHINE LEARNING

VAC CODE:MLVAC01

CLASS :| II.B.Com (CA)

DURATION :30 DAYS




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**DEPARTEMENT OF
COMPUTER SCIENCE**

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(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

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ISO 9001:2015 Certified Institution



DEPARTMENT OF COMPUTER SCIENCE Value Added Course Title: Machine Learning

Name of the Lecturer : S.Prabhavathi

Class : II B.Com(CA)

Duration of the Course :30 HOURS

VAC Code :MLVAC01

Value Added Course

Title: Machine learning

- Objectives : 1) The goal of machine learning is often-
Though not always-to train a model on
Historical , labelled data.
- 2) Discuss the terminology used
- 3) The vision of machine learning lab is to
Develop autonomous decision making
systems

Methodology : Teacher - Cantered method

Duration : 30 Hours

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Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: Machine Learning

Date: From 14-06-2018 to 15-07-2018

Date	Content	Module No.
14-06-2018	<u>Introduction to Machine Learning</u> ML terminologies – Linear Regression: Training and Loss – Loss Reduction techniques – Working with Tensorflow Playground.	I
25-06-2018	<u>CLASSIFICATION AND CLUSTERING</u> Logistic regression – Generalization – Regularization - Classification – Clustering: Centroid-based Clustering - Density-based Clustering - Distribution-based Clustering - Hierarchical Clustering	II
03-07-2018	<u>DEEP NETWORKS</u> Introduction to Neural networks – Terminology – Working with tensors – Pandas, numpy, matplotlib library – Feed forward networks – Convolutional Neural network – Recurrent neural networks and its variants	III
15-07-2018	<u>DEEP GENERATIVE MODELS</u> Restricted Boltzmann Machines – Deep Belief networks – Deep Boltzmann machine – Convolutional Boltzmann machine – Working with Tensorflow Playground	IV

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Value Added Course
Student Enrolment Sheet

Class:II BCom(CA)

S. No	Roll No.	Name of the Student	Signature
1	2052801	Maganti Revathi	Maganti Revathi
2	2052802	Kondaveeti Sarani	kondaveeti sarani
3	2052803	Jogi Gowri Prasanna Kumari	Jogi Gowri Prasanna Kumari
4	2052804	Poranki Dharani	Poranki Dharani
5	2052805	Dokku Bhuvaneshwari	Dokku Bhuvaneshwari
6	2052806	Chaganti Sasank	chaganti Sasank
7	2052807	Boddu Bhagya Sree	Boddu Bhagya sree
8	2052808	Syed Afrin	Syed Afrin
9	2052809	Chakka Anjali	C. Anjali
10	2052810	Karanam Teja Swaroop	Karanam Teja Swaroop
11	2052811	Jarapala Sai Nayak	Jarapala. Sai Nayak
12	2052812	Cheeli Rajitha	cheeli Rajitha
13	2052813	Devarapalli Sunil	Devarapalli Sunil
14	2052814	Chalapathi Deepthi	Chalapathi. Deepthi
15	2052815	Valluru Sumanth	Valluru. Sumanth

16	2052816	Bobbili Purna Kumar	Bobbili Purna kumar
17	2052817	Kanumuri Vasanth Kumar	Kanumuri vasanth kumar
18	2052818	Oruganti Arun Kumar	Oruganti Arun kumar
19	2052819	Barepalli Abhinav	Barepalli Abhinav
20	2052820	Kolusu Jhansi	kolusu Jhansi
21	2052821	Akunuri Bhumika	Akunuri Bhumika
22	2052822	Kambham Uday	Kambham Uday
23	2052823	K. Bharath Kalyan	K. Bharath kalyan
24	2052824	Patan Shaheena	patan shaheena
25	2052825	E. Bindu	E. Bindu
26	2052826	S. Sri Chandana	S. Sri Chandana
27	2052827	G. Sirisha	G. Sirisha
28	2052828	T. Gopi Chand	T. Gopi Chand
29	2052829	G. Navya	G. Navya
30	2052830	Kanumuri Sri Ram	Kanumuri Sri Ram
31	2052831	N. Haritha Sri	N. Haritha Sri
32	2052832	Shak Ruksana	Shak Ruksana
33	2052833	Lanke Mohan Sai	Lanke mohan sai
34	2052834	K. Anil Kumar	K. Anil Kumar

S. Prabhavathi
Signature of lecturer


Signature of Head


PRINCIPAL
AC & S/S, Sreebhadrulu Engineering College,
Aravind Science (Autonomous), Vuyyuru

Machine Learning Tutorial

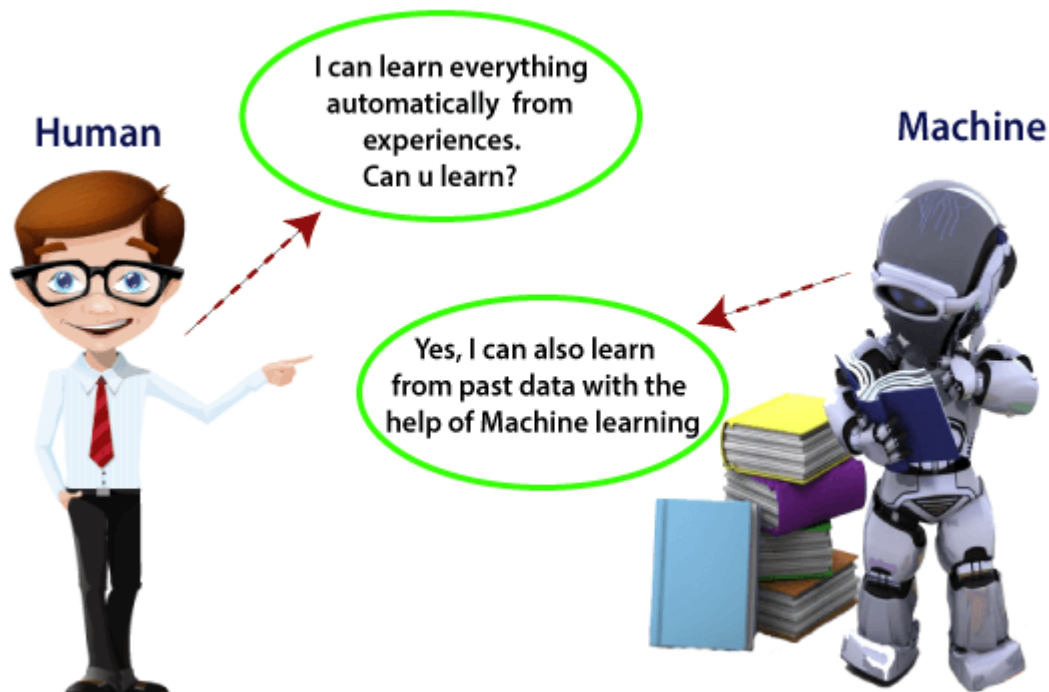
Machine Learning tutorial provides basic and advanced concepts of machine learning. Our machine learning tutorial is designed for students and working professionals. Machine learning is a growing technology which enables computers to learn automatically from past data.

Machine learning uses various algorithms for **building mathematical models and making predictions using historical data or information**. Currently, it is being used for various tasks such as **image recognition, speech recognition, email filtering, Facebook auto-tagging, recommender system**, and many more.

This machine learning tutorial gives you an introduction to machine learning along with the wide range of machine learning techniques such as **Supervised, Unsupervised, and Reinforcement** learning. You will learn about regression and classification models, clustering methods, hidden Markov models, and various sequential models.

What is Machine Learning

In the real world, we are surrounded by humans who can learn everything from their experiences with their learning capability, and we have computers or machines which work on our instructions. But can a machine also learn from experiences or past data like a human does? So here comes the role of **Machine Learning**.



Machine Learning is said as a subset of **artificial intelligence** that is mainly concerned with the development of algorithms which allow a computer to learn from the data and past

experiences on their own. The term machine learning was first introduced by **Arthur Samuel** in **1959**. We can define it in a summarized way as:

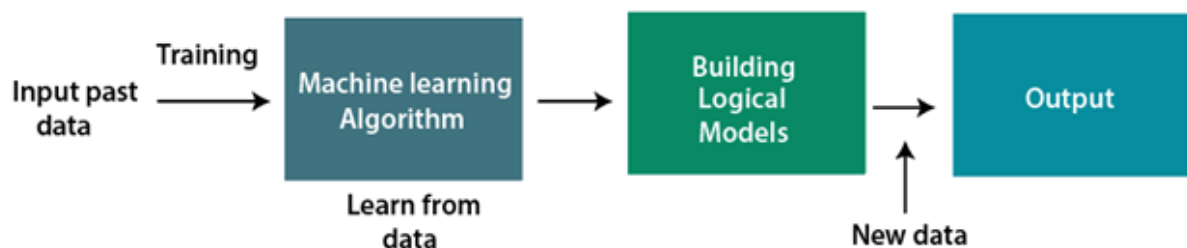
With the help of sample historical data, which is known as **training data**, machine learning algorithms build a **mathematical model** that helps in making predictions or decisions without being explicitly programmed. Machine learning brings computer science and statistics together for creating predictive models. Machine learning constructs or uses the algorithms that learn from historical data. The more we will provide the information, the higher will be the performance.

A machine has the ability to learn if it can improve its performance by gaining more data.

How does Machine Learning work

A Machine Learning system **learns from historical data, builds the prediction models, and whenever it receives new data, predicts the output for it.** The accuracy of predicted output depends upon the amount of data, as the huge amount of data helps to build a better model which predicts the output more accurately.

Suppose we have a complex problem, where we need to perform some predictions, so instead of writing a code for it, we just need to feed the data to generic algorithms, and with the help of these algorithms, machine builds the logic as per the data and predict the output. Machine learning has changed our way of thinking about the problem. The below block diagram explains the working of Machine Learning algorithm:



Features of Machine Learning:

- Machine learning uses data to detect various patterns in a given dataset.
- It can learn from past data and improve automatically.
- It is a data-driven technology.
- Machine learning is much similar to data mining as it also deals with the huge amount of the data.

Need for Machine Learning

The need for machine learning is increasing day by day. The reason behind the need for machine learning is that it is capable of doing tasks that are too complex for a person to

implement directly. As a human, we have some limitations as we cannot access the huge amount of data manually, so for this, we need some computer systems and here comes the machine learning to make things easy for us.

We can train machine learning algorithms by providing them the huge amount of data and let them explore the data, construct the models, and predict the required output automatically. The performance of the machine learning algorithm depends on the amount of data, and it can be determined by the cost function. With the help of machine learning, we can save both time and money.

The importance of machine learning can be easily understood by its uses cases, Currently, machine learning is used in **self-driving cars, cyber fraud detection, face recognition, and friend suggestion by Facebook**, etc. Various top companies such as Netflix and Amazon have build machine learning models that are using a vast amount of data to analyze the user interest and recommend product accordingly.

Following are some key points which show the importance of Machine Learning:

- Rapid increment in the production of data
- Solving complex problems, which are difficult for a human
- Decision making in various sector including finance
- Finding hidden patterns and extracting useful information from data.

Classification of Machine Learning

At a broad level, machine learning can be classified into three types:

1. **Supervised learning**
2. **Unsupervised learning**
3. **Reinforcement learning**



1) Supervised Learning

Supervised learning is a type of machine learning method in which we provide sample labeled data to the machine learning system in order to train it, and on that basis, it predicts the output.

The system creates a model using labeled data to understand the datasets and learn about each data, once the training and processing are done then we test the model by providing a sample data to check whether it is predicting the exact output or not.

The goal of supervised learning is to map input data with the output data. The supervised learning is based on supervision, and it is the same as when a student learns things in the supervision of the teacher. The example of supervised learning is **spam filtering**.

Supervised learning can be grouped further in two categories of algorithms:

- **Classification**
- **Regression**

2) Unsupervised Learning

Unsupervised learning is a learning method in which a machine learns without any supervision.

The training is provided to the machine with the set of data that has not been labeled, classified, or categorized, and the algorithm needs to act on that data without any supervision. The goal of unsupervised learning is to restructure the input data into new features or a group of objects with similar patterns.

In unsupervised learning, we don't have a predetermined result. The machine tries to find useful insights from the huge amount of data. It can be further classified into two categories of algorithms:

- **Clustering**
- **Association**

3) Reinforcement Learning

Reinforcement learning is a feedback-based learning method, in which a learning agent gets a reward for each right action and gets a penalty for each wrong action. The agent learns automatically with these feedbacks and improves its performance. In reinforcement learning, the agent interacts with the environment and explores it. The goal of an agent is to get the most reward points, and hence, it improves its performance.

The robotic dog, which automatically learns the movement of his arms, is an example of Reinforcement learning.

History of Machine Learning

Before some years (about 40-50 years), machine learning was science fiction, but today it is the part of our daily life. Machine learning is making our day to day life easy from **self-driving cars** to **Amazon virtual assistant "Alexa"**. However, the idea behind machine

learning is so old and has a long history. Below some milestones are given which have occurred in the history of machine learning:

The early history of Machine Learning (Pre-1940):

- **1834:** In 1834, Charles Babbage, the father of the computer, conceived a device that could be programmed with punch cards. However, the machine was never built, but all modern computers rely on its logical structure.
- **1936:** In 1936, Alan Turing gave a theory that how a machine can determine and execute a set of instructions.

The era of stored program computers:

- **1940:** In 1940, the first manually operated computer, "ENIAC" was invented, which was the first electronic general-purpose computer. After that stored program computer such as EDSAC in 1949 and EDVAC in 1951 were invented.
- **1943:** In 1943, a human neural network was modeled with an electrical circuit. In 1950, the scientists started applying their idea to work and analyzed how human neurons might work.

Computer machinery and intelligence:

- **1950:** In 1950, Alan Turing published a seminal paper, "**Computer Machinery and Intelligence**," on the topic of artificial intelligence. **In his paper, he asked, "Can machines think?"**

Machine intelligence in Games:

- **1952:** Arthur Samuel, who was the pioneer of machine learning, created a program that helped an IBM computer to play a checkers game. It performed better more it played.
- **1959:** In 1959, the term "Machine Learning" was first coined by **Arthur Samuel**.

The first "AI" winter:

- The duration of 1974 to 1980 was the tough time for AI and ML researchers, and this duration was called as **AI winter**.
- In this duration, failure of machine translation occurred, and people had reduced their interest from AI, which led to reduced funding by the government to the researches.

Machine Learning from theory to reality

- **1959:** In 1959, the first neural network was applied to a real-world problem to remove echoes over phone lines using an adaptive filter.

- **1985:** In 1985, Terry Sejnowski and Charles Rosenberg invented a neural network **NETtalk**, which was able to teach itself how to correctly pronounce 20,000 words in one week.
- **1997:** The IBM's **Deep blue** intelligent computer won the chess game against the chess expert Garry Kasparov, and it became the first computer which had beaten a human chess expert.

Machine Learning at 21st century

- **2006:** In the year 2006, computer scientist Geoffrey Hinton has given a new name to neural net research as "**deep learning**," and nowadays, it has become one of the most trending technologies.
- **2012:** In 2012, Google created a deep neural network which learned to recognize the image of humans and cats in YouTube videos.
- **2014:** In 2014, the Chabot "**Eugen Goostman**" cleared the Turing Test. It was the first Chabot who convinced the 33% of human judges that it was not a machine.
- **2014: DeepFace** was a deep neural network created by Facebook, and they claimed that it could recognize a person with the same precision as a human can do.
- **2016: AlphaGo** beat the world's number second player **Lee sedol** at **Go game**. In 2017 it beat the number one player of this game **Ke Jie**.
- **2017:** In 2017, the Alphabet's Jigsaw team built an intelligent system that was able to learn the **online trolling**. It used to read millions of comments of different websites to learn to stop online trolling.

Machine Learning at present:

Now machine learning has got a great advancement in its research, and it is present everywhere around us, such as **self-driving cars, Amazon Alexa, Catboats, recommender system**, and many more. It includes **Supervised, unsupervised, and reinforcement learning with clustering, classification, decision tree, SVM algorithms**, etc.

Modern machine learning models can be used for making various predictions, including **weather prediction, disease prediction, stock market analysis**, etc.

Prerequisites

Before learning machine learning, you must have the basic knowledge of followings so that you can easily understand the concepts of machine learning:

- Fundamental knowledge of probability and linear algebra.
- The ability to code in any computer language, especially in Python language.

- Knowledge of Calculus, especially derivatives of single variable and multivariate functions.

Audience

Our Machine learning tutorial is designed to help beginner and professionals.

Problems

We assure you that you will not find any difficulty while learning our Machine learning tutorial. But if there is any mistake in this tutorial, kindly post the problem or error in the contact form so that we can improve it

Clustering in Machine Learning

Clustering or cluster analysis is a machine learning technique, which groups the unlabelled dataset. It can be defined as *"A way of grouping the data points into different clusters, consisting of similar data points. The objects with the possible similarities remain in a group that has less or no similarities with another group."*

It does it by finding some similar patterns in the unlabelled dataset such as shape, size, color, behavior, etc., and divides them as per the presence and absence of those similar patterns.

It is an unsupervised learning method, hence no supervision is provided to the algorithm, and it deals with the unlabeled dataset.

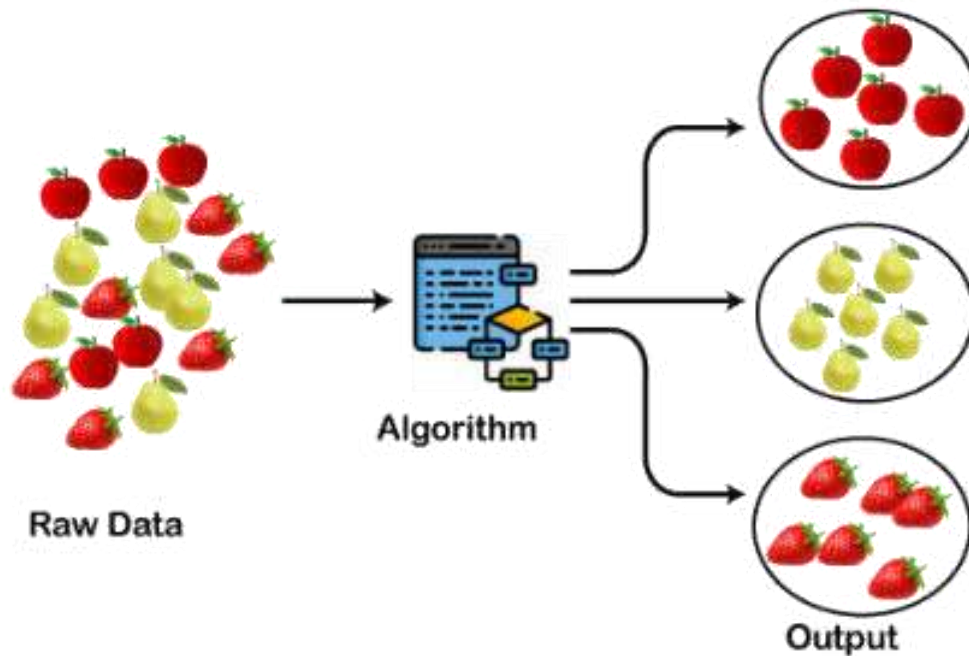
After applying this clustering technique, each cluster or group is provided with a cluster-ID. ML system can use this id to simplify the processing of large and complex datasets.

Example: Let's understand the clustering technique with the real-world example of Mall: When we visit any shopping mall, we can observe that the things with similar usage are grouped together. Such as the t-shirts are grouped in one section, and trousers are at other sections, similarly, at vegetable sections, apples, bananas, Mangoes, etc., are grouped in separate sections, so that we can easily find out the things. The clustering technique also works in the same way. Other examples of clustering are grouping documents according to the topic.

The clustering technique can be widely used in various tasks. Some most common uses of this technique are:

- Market Segmentation
- Statistical data analysis
- Social network analysis
- Image segmentation
- Anomaly detection, etc.

Apart from these general usages, it is used by the **Amazon** in its recommendation system to provide the recommendations as per the past search of products. **Netflix** also uses this technique to recommend the movies and web-series to its users as per the watch history. The below diagram explains the working of the clustering algorithm. We can see the different fruits are divided into several groups with similar properties.



Types of

Clustering Methods

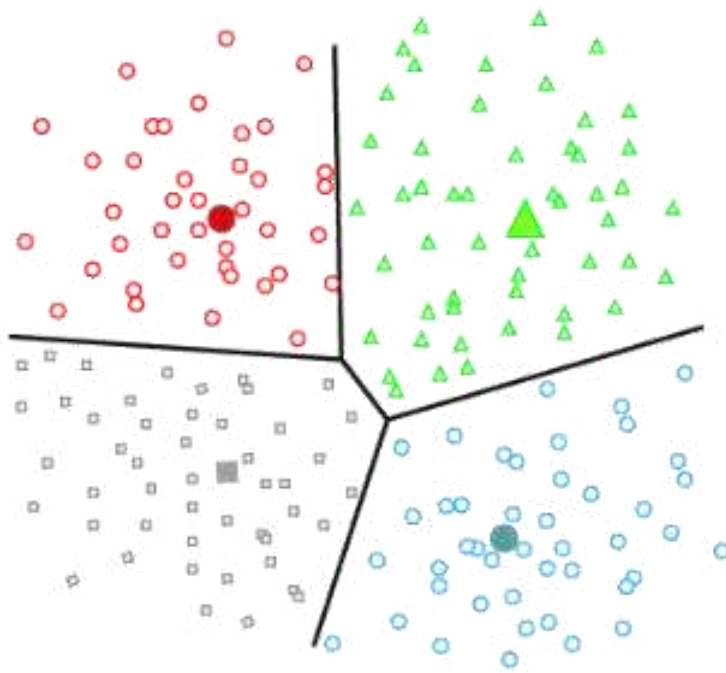
The clustering methods are broadly divided into **Hard clustering** (datapoint belongs to only one group) and **Soft Clustering** (data points can belong to another group also). But there are also other various approaches of Clustering exist. Below are the main clustering methods used in Machine learning:

1. **Partitioning Clustering**
2. **Density-Based Clustering**
3. **Distribution Model-Based Clustering**
4. **Hierarchical Clustering**
5. **Fuzzy Clustering**

Partitioning Clustering

It is a type of clustering that divides the data into non-hierarchical groups. It is also known as the **centroid-based method**. The most common example of partitioning clustering is the **K-Means Clustering algorithm**.

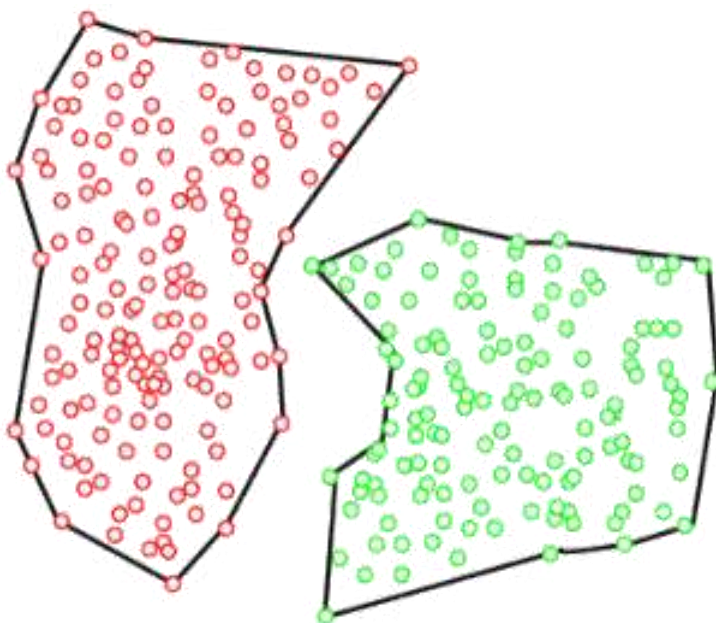
In this type, the dataset is divided into a set of k groups, where K is used to define the number of pre-defined groups. The cluster center is created in such a way that the distance between the data points of one cluster is minimum as compared to another cluster centroid.



Density-Based Clustering

The density-based clustering method connects the highly-dense areas into clusters, and the arbitrarily shaped distributions are formed as long as the dense region can be connected. This algorithm does it by identifying different clusters in the dataset and connects the areas of high densities into clusters. The dense areas in data space are divided from each other by sparser areas.

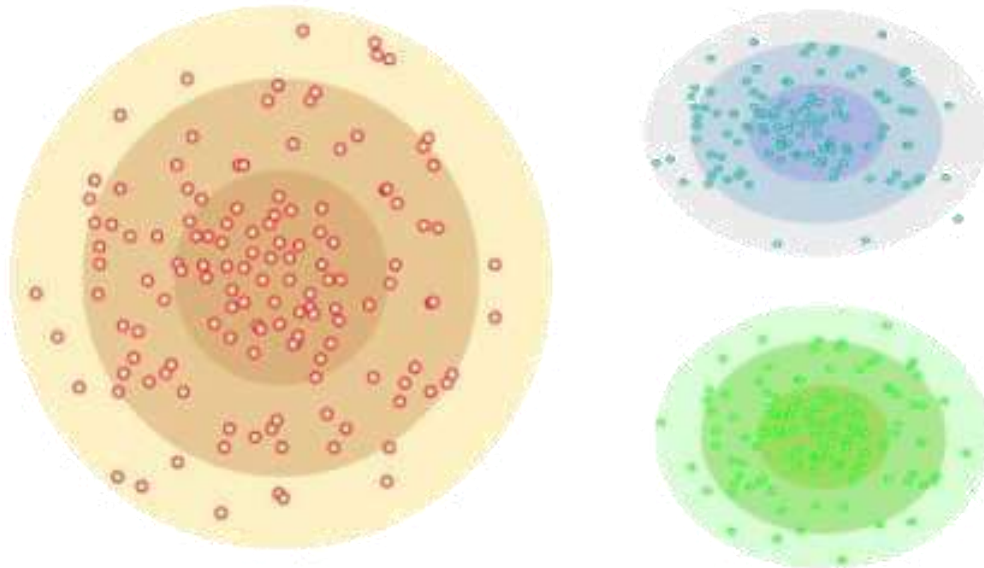
These algorithms can face difficulty in clustering the data points if the dataset has varying densities and high dimensions.



Distribution Model-Based Clustering

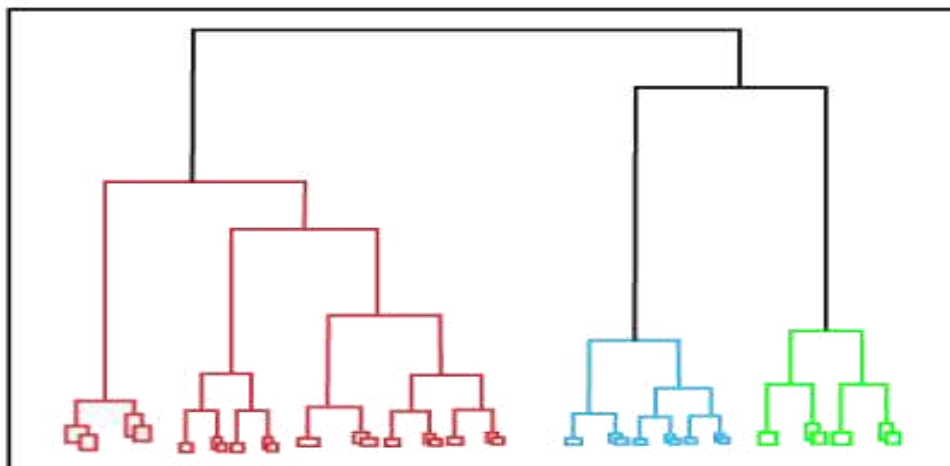
In the distribution model-based clustering method, the data is divided based on the probability of how a dataset belongs to a particular distribution. The grouping is done by assuming some distributions commonly **Gaussian Distribution**.

The example of this type is the **Expectation-Maximization Clustering algorithm** that uses Gaussian Mixture Models (GMM).



Hierarchical Clustering

Hierarchical clustering can be used as an alternative for the partitioned clustering as there is no requirement of pre-specifying the number of clusters to be created. In this technique, the dataset is divided into clusters to create a tree-like structure, which is also called a **dendrogram**. The observations or any number of clusters can be selected by cutting the tree at the correct level. The most common example of this method is the **Agglomerative Hierarchical algorithm**.



Fuzzy Clustering

Fuzzy clustering is a type of soft method in which a data object may belong to more than one group or cluster. Each dataset has a set of membership coefficients, which depend on the degree of membership to be in a cluster. **Fuzzy C-means algorithm** is the example of this type of clustering; it is sometimes also known as the Fuzzy k-means algorithm.

Clustering Algorithms

The Clustering algorithms can be divided based on their models that are explained above. There are different types of clustering algorithms published, but only a few are commonly used. The clustering algorithm is based on the kind of data that we are using. Such as, some algorithms need to guess the number of clusters in the given dataset, whereas some are required to find the minimum distance between the observation of the dataset.

Here we are discussing mainly popular Clustering algorithms that are widely used in machine learning:

1. **K-Means algorithm:** The k-means algorithm is one of the most popular clustering algorithms. It classifies the dataset by dividing the samples into different clusters of equal variances. The number of clusters must be specified in this algorithm. It is fast with fewer computations required, with the linear complexity of **O(n)**.
2. **Mean-shift algorithm:** Mean-shift algorithm tries to find the dense areas in the smooth density of data points. It is an example of a centroid-based model, that works on updating the candidates for centroid to be the center of the points within a given region.
3. **DBSCAN Algorithm:** It stands for **Density-Based Spatial Clustering of Applications with Noise**. It is an example of a density-based model similar to the mean-shift, but with some remarkable advantages. In this algorithm, the areas of high density are separated by the areas of low density. Because of this, the clusters can be found in any arbitrary shape.
4. **Expectation-Maximization Clustering using GMM:** This algorithm can be used as an alternative for the k-means algorithm or for those cases where K-means can be failed. In GMM, it is assumed that the data points are Gaussian distributed.
5. **Agglomerative Hierarchical algorithm:** The Agglomerative hierarchical algorithm performs the bottom-up hierarchical clustering. In this, each data point is treated as a single cluster at the outset and then successively merged. The cluster hierarchy can be represented as a tree-structure.

6. **Affinity Propagation:** It is different from other clustering algorithms as it does not require to specify the number of clusters. In this, each data point sends a message between the pair of data points until convergence. It has $O(N^2T)$ time complexity, which is the main drawback of this algorithm.

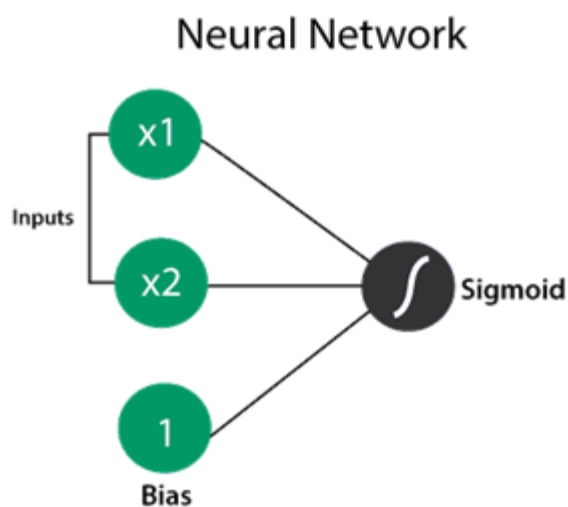
Applications of Clustering

Below are some commonly known applications of clustering technique in Machine Learning:

- **In Identification of Cancer Cells:** The clustering algorithms are widely used for the identification of cancerous cells. It divides the cancerous and non-cancerous data sets into different groups.
- **In Search Engines:** Search engines also work on the clustering technique. The search result appears based on the closest object to the search query. It does it by grouping similar data objects in one group that is far from the other dissimilar objects. The accurate result of a query depends on the quality of the clustering algorithm used.
- **Customer Segmentation:** It is used in market research to segment the customers based on their choice and preferences.
- **In Biology:** It is used in the biology stream to classify different species of plants and animals using the image recognition technique.
- **In Land Use:** The clustering technique is used in identifying the area of similar lands use in the GIS database. This can be very useful to find that for what purpose the particular land should be used, that means for which purpose it is more suitable.

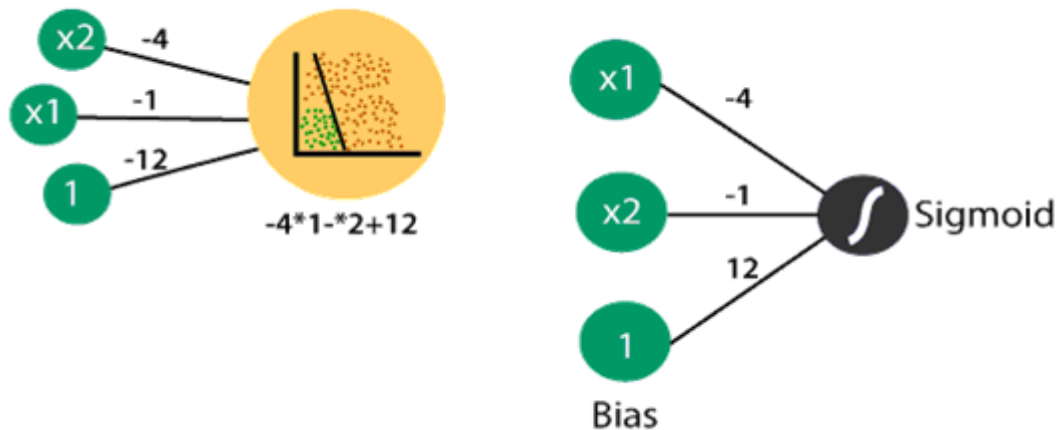
Architecture of Neural Networks

We found a non-linear model by combining two linear models with some equation, weight, bias, and sigmoid function. Let start its better illustration and understand the architecture of **Neural Network** and **Deep Neural Network**.



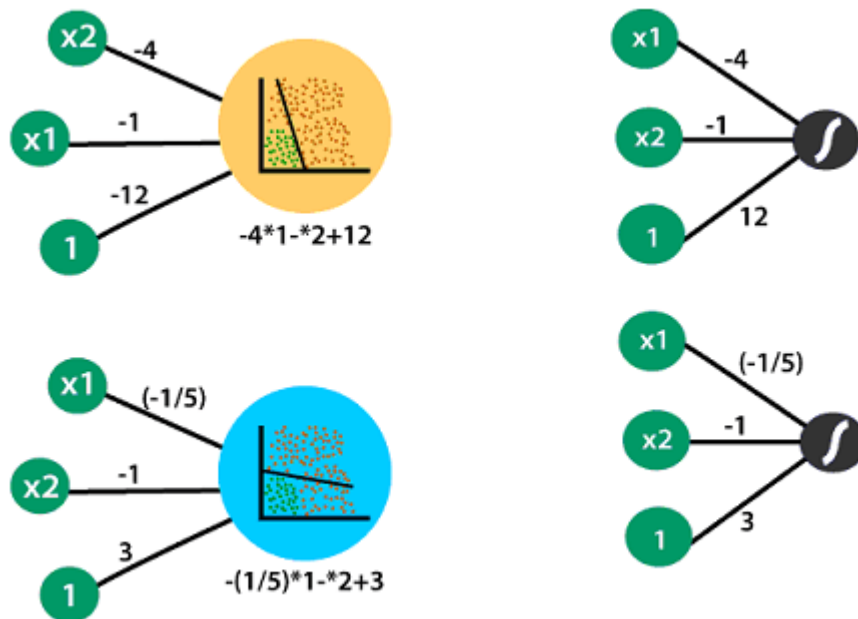
Let see an example for better understanding and illustration.

Suppose, there is a linear model whose line is represented as $-4x_1 - x_2 + 12$. We can represent it with the following perceptron.

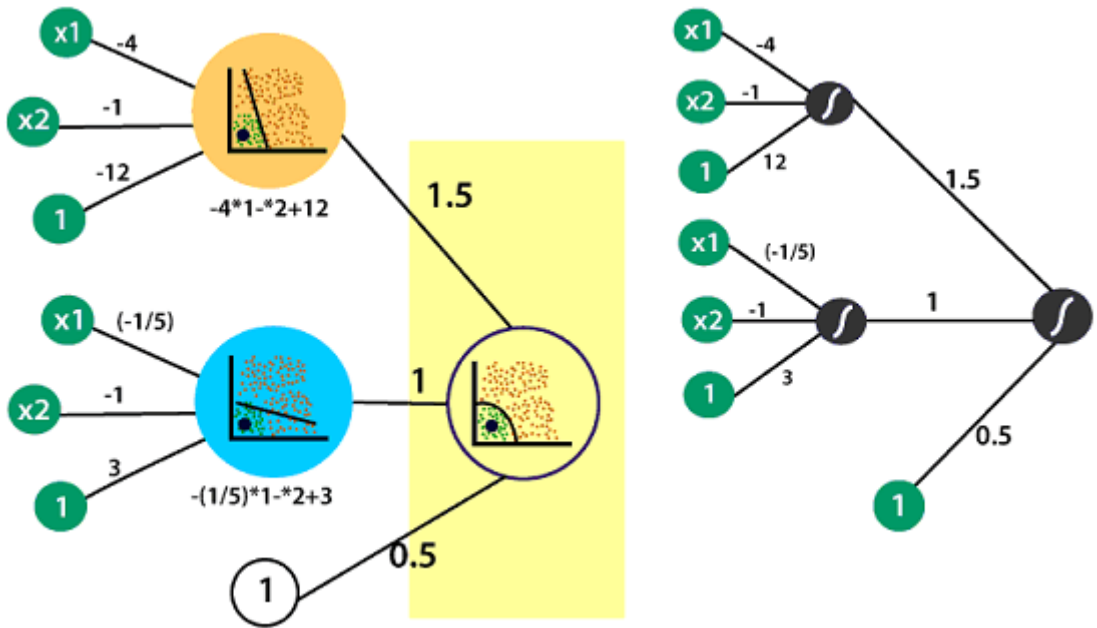


The weight in the input layer is -4, -1 and 12 represent the equation in the linear model to which input is passed in to obtain their probability of being in the positive region.

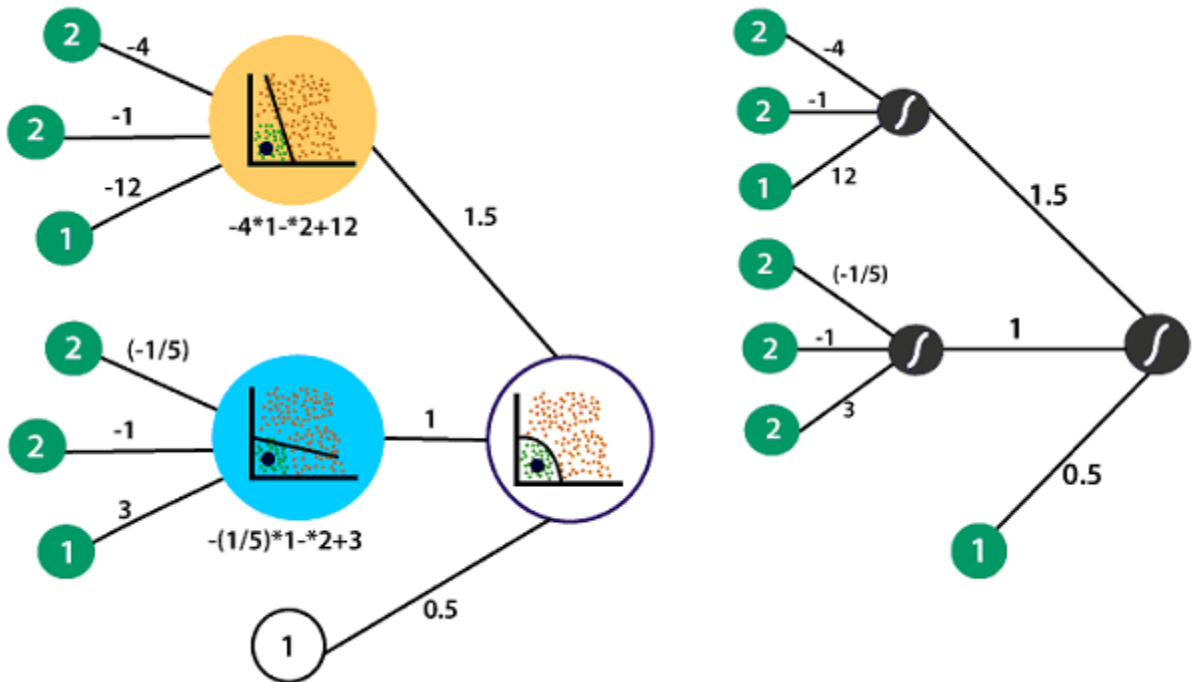
Take one more model whose line is represented as $-\frac{1}{5}x_1 - x_2 + 3$. So the expected perceptron through which we can represent it as follows:



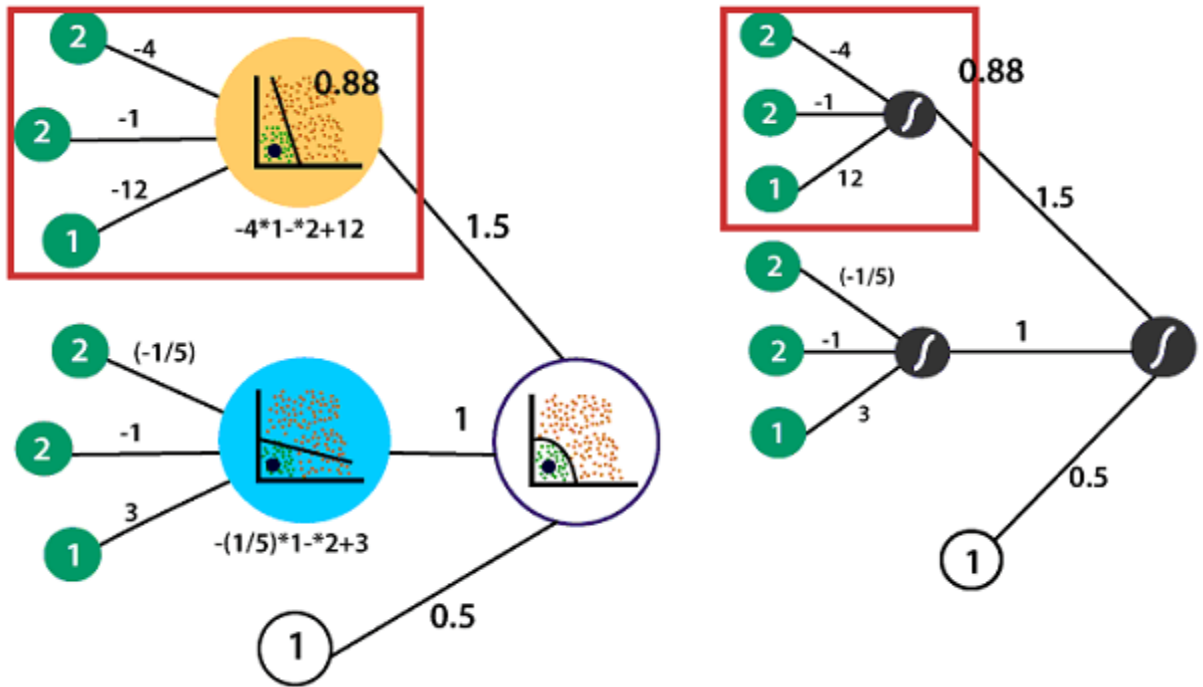
Now, what we have to do, we will combine these two perceptrons to obtain a non-linear perceptron or model by multiplying the two models with some set of weight and adding biased. After that, we applied sigmoid to obtain the curve as follows:



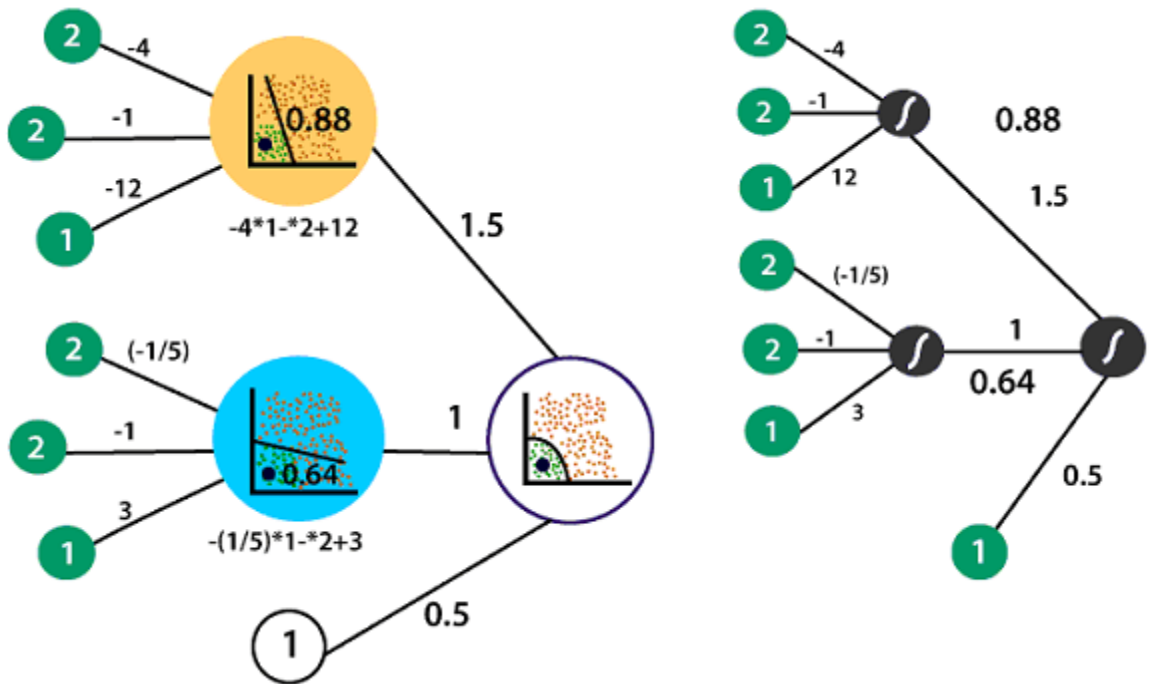
In our previous example, suppose we had two inputs x_1 and x_2 . These inputs represent a single point at coordinates (2, 2), and we want to obtain the probability of the point being in the positive region and the non-linear model. These coordinates (2, 2) passed into the first input layer, which consists of two linear models.



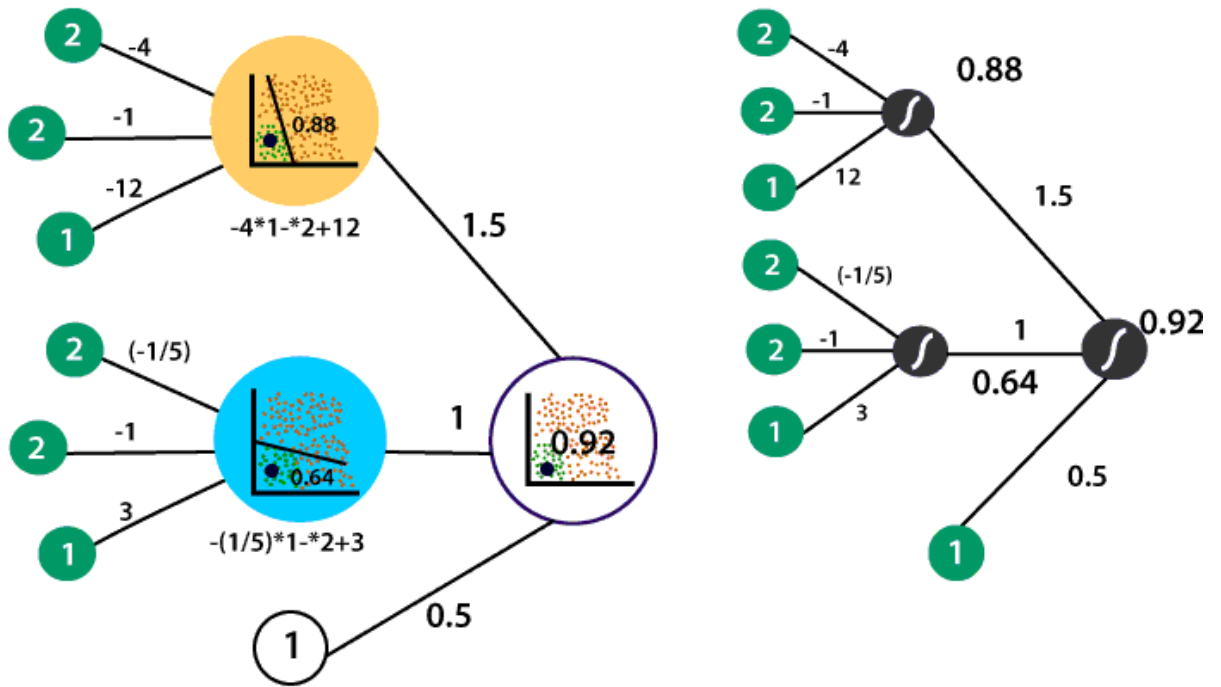
The two inputs are processed in the first linear model to obtain the probability of the point being in the positive region by taking the inputs as a linear combination based on weights and bias of the model and then taking the sigmoid and obtain the probability of point 0.88.



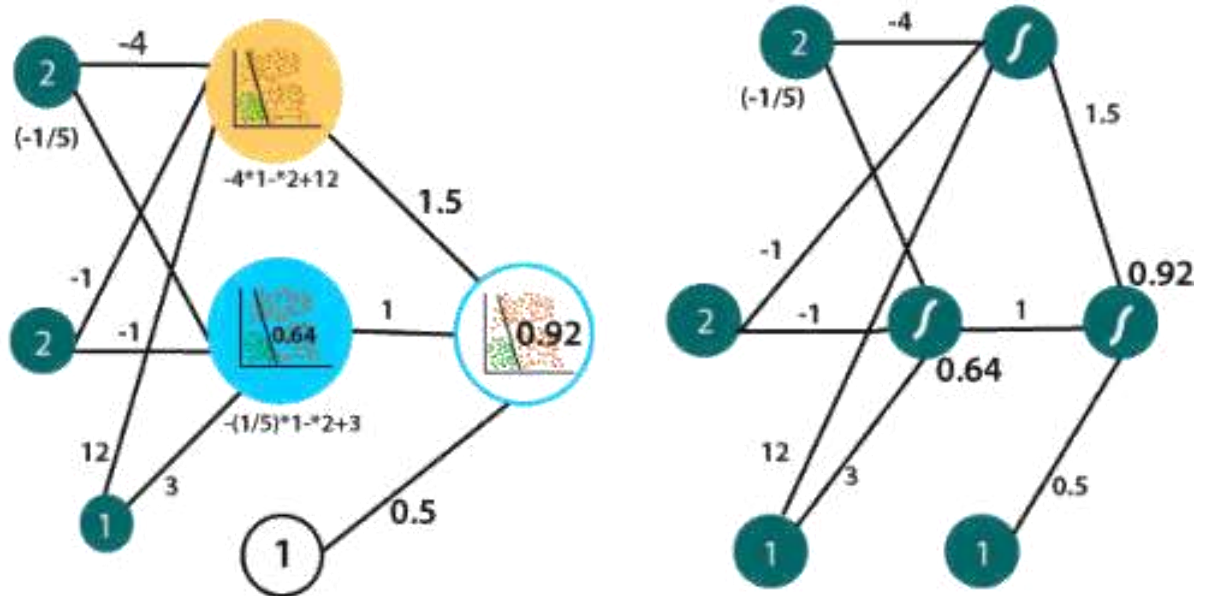
In the same way, we will find the probability of the point is in the positive region in the second model, and we found the probability of point 0.64.



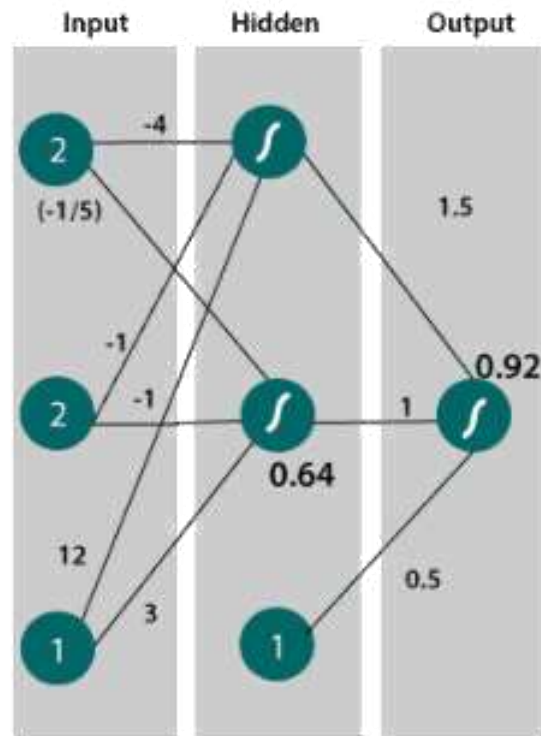
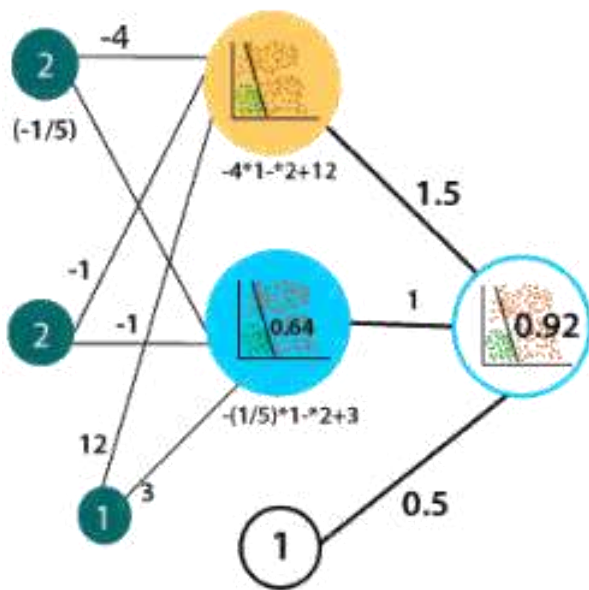
When we combine both models, we will add the probabilities together. We will take the linear combination with respect to weights 1.5, 1, and bias value 0.5. We will multiply the first model with the first weight and the second model with a second weight and adding everything along with the bias to obtain the score since we will take sigmoid of the linear combination of both our models which obtain a new model. We will do the same thing for our points, which converts it to a 0.92 probability of it being in the positive region and the non-linear model.



It is a feed forward process of deep neural network. For more efficiency, we can rearrange the notation of this neural network. Instead of representing our point as two distinct x_1 and x_2 input node we represent it as a single pair of the x_1 and x_2 node as



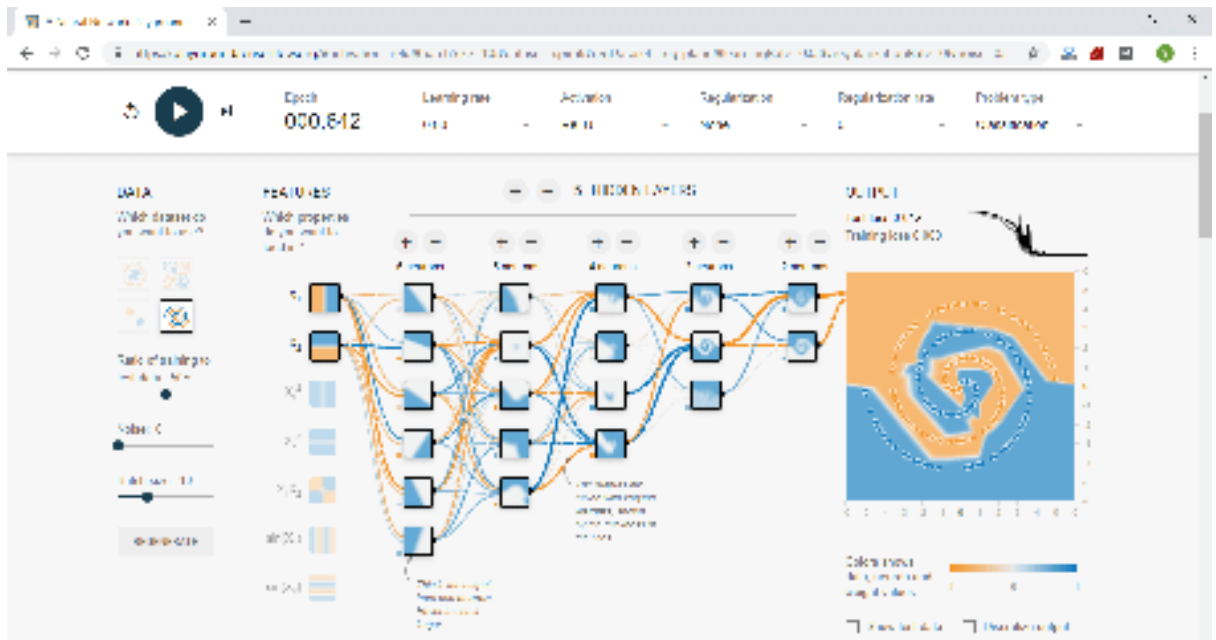
This illustrates the unique architecture of a neural network. So there is an input layer which contains the input, the second layer which is set of the linear model and the last layer is the output layer which resulted from the combination of our two linear models to obtain a non-linear model.



Deep Neural Network

We will use the models and the hidden layers to combine them and create non-linear models which best classify our data. Sometimes our data is too complex and to classify that we will have to combine non-linear models to create even more non-linear model.

We can do this many times with even more hidden layers and obtain highly complex models as



To classify this type of data is more complex. It requires many hidden layers of models combining into one another with some set of weight to obtain a model that perfectly classify this data.

After that, we can produce some output through a feed-forward operation. The input would have to go through the entire depth of the neural network before producing an output. It is just a multilayered perceptron. In a deep neural network, our data's trend is not straight forward, so this non-linear boundary is only an accurate model that correctly classifies a very complex set of data.

Many hidden layers are required to obtain this non-linear boundary and each layer containing models which are combined into one another to produce this very complex boundary which classifies our data.

The deep neural networks can be trained with more complex function to classify even more complex data.

Value Added Course

Title: Machine Learning

Test Exercise:

1. Machine learning is an application of_____
2. Applications of machine learning is _____
3. The term machine learning was coined in which year?
4. Machine learning approaches can be traditionally categorized into_____ categories.
5. The categories in which machine learning approaches can be traditionally categorized are _____
6. What is machine learning?
7. _____ is the machine learning algorithms that can be used with labelled data.
8. _____ is the machine learning algorithms that can be used with un-labelled data.
9. The Real-World machine learning use cases are _____.

10. Which among the following algorithms are used in machine learning?

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: Machine Learning

Key:

1. Artificial Intelligence
2. Email filtering ,face recognition
3. 1959
4. 3
5. Supervised learning , unsupervised learning
6. Machine learning is a form of AI that enables a system to learn from data
7. Regression algorithms
8. Clustering algorithms
9. Digital assistants , chatbots
10. Naive Bayes , Support Vector Machines

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of COMPUTER SCIENCE

Value Added Course
Title: Machine Learning

Marks List


Class: IIBCom(C.A)

S. No	Roll No.	Name of the Student	Marks
1	2052801	Maganti Revathi	08
2	2052802	Kondaveeti Sarani	08
3	2052803	Jogi Gowri Prasanna Kumari	09
4	2052804	Poranki Dharani	08
5	2052805	Dokku Bhuvaneswari	09
6	2052806	Chaganti Sasank	08
7	2052807	Boddu Bhagya Sree	09
8	2052808	Syed Afrin	10
9	2052809	Chakka Anjali	10
10	2052810	Karanam Teja Swaroop	10
11	2052811	Jarapala Sai Nayak	09
12	2052812	Cheeli Rajitha	08
13	2052813	Devarapalli Sunil	08
14	2052814	Chalapati Deepthi	09
15	2052815	Valluru Sumanth	08

16	2052816	Bobbili Purna Kumar	09
17	2052817	Kanumuri Vasanth Kumar	08
18	2052818	Oruganti Arun Kumar	09
19	2052819	Barepalli Abhinav	08
20	2052820	Kolusu Jhansi	08
21	2052821	Akunuri Bhumika	09
22	2052822	Kambham Uday	09
23	2052823	K. Bharath Kalyan	10
24	2052824	Patan Shaheena	09
25	2052825	E. Bindu	08
26	2052826	S. Sri Chandana	09
27	2052827	G.Sirisha	09
28	2052828	T.Gopi Chand	08
29	2052829	G.Navya	09
30	2052830	Kanumuri Sri Ram	08
31	2052831	N.Haritha Sri	09
32	2052832	Shaik Rukmana	08
33	2052833	Lanke Mohan Sai	08
34	2052834	K.Anil Kumar	09

S. Prabhavathi
Signature of Lecturer


Signature of HOD


PRINCIPAL
AG & Signature of Principal
Arts & Science (Autonomous) Mysore

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of COMPUTER SCIENCE

Value Added Course
Title: Machine Learning

Feed Back Form

1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
4. Have the teacher covered the entire syllabus? (Yes/No) ✓
5. Is the number of hours adequate? (Yes/No) ✓
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section: DB Com (CA) Year: 1

Department of: Computer Science Paper: Machine Learning Lecturer: S. Prabha Devi

Sl. No	Roll No	Student Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1	2052801	Maganti Revathi	P	P	P	P	P	P	P	A	P	P	P	P	P	A	P	
2	2052802	Kondaveeti Sarani	P	P	P	P	P	A	P	P	P	A	P	P	A	P	P	
3	2052803	Jogi Gowri Prasanna Kumari	P	P	P	P	P	P	A	P	P	P	P	P	P	A	P	
4	2052804	Poranki Dharani	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	
5	2052805	Dokku Bhuvaneshwari	P	P	P	P	P	P	A	P	P	A	P	P	A	P	A	
6	2052806	Chaganti Sasank	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	
7	2052807	Boddu Bhagya Sree	P	P	A	P	P	P	P	P	P	P	A	P	P	P	P	
8	2052808	Syed Afrin	P	P	P	A	P	P	P	A	P	P	P	P	P	A	P	
9	2052809	Chakka Anjali	P	P	P	P	P	P	A	P	P	P	P	A	P	P	A	
10	2052810	Karanam Teja Swaroop	P	P	P	P	A	P	P	P	P	P	A	P	P	P	A	
11	2052811	Jarapala Sai Nayak	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	
12	2052812	Cheeli Rajitha	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	
13	2052813	Devarapalli Sunil	P	P	P	P	A	P	P	P	P	P	P	P	P	P	A	
14	2052814	Chalapathi Deepthi	P	P	P	P	P	P	P	P	P	P	P	A	P	P	A	
15	2052815	Valluru Sumanth	P	P	P	P	P	A	P	P	P	P	P	P	P	P	A	
16	2052816	Bobbili Purna Kumar	P	P	P	P	P	A	P	P	P	P	A	P	P	P	A	

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 Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register


Class / Section: B.R. (C) (A) Year: 3

Department of: Computer Science Paper: Machine Learning

Lecturer: S. Prabhavathi

Sl. No	Roll No	Student Name	Department of: <u>Computer Science</u> Paper: <u>Machine Learning</u>																Total
			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
1	2052801	Maganti Revathi	P	P	P	P	A	P	P	A	P	P	A	P	P	P	A		
2	2052802	Kondaveeti Sarani	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	A	
3	2052803	Jogi Gowri Prasanna Kumari	P	P	P	P	A	P	P	A	P	P	A	P	P	P	P	P	
4	2052804	Poranki Dharani	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	
5	2052805	Dokku Bhuvanawari	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	A	
6	2052806	Chaganti Sasank	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	
7	2052807	Boddu Bhagya Sree	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	
8	2052808	Syed Afrin	P	P	P	P	A	P	P	P	P	P	P	P	P	P	A	P	
9	2052809	Chakka Anjali	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
10	2052810	Karanam Teja Swaroop	P	P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	
11	2052811	Jarapala Sai Nayak	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	
12	2052812	Cheeli Rajitha	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	
13	2052813	Devrapalli Sunil	P	P	P	P	P	P	P	A	P	P	A	P	P	P	P	P	
14	2052814	Chalapathi Deepthi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
15	2052815	Valluru Sumanth	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	
16	2052816	Bobbili Purna Kumar	P	P	P	P	P	P	P	P	A	P	P	A	P	P	P	P	

S. Prabhavathi
Signature of Lecturer


Signature of HOD

S. Prabhavathi
PRINCIPAL
Siddhartha Degree College
Arts & Science (Autonomous) Vuyyuru

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section: B.Com(C.A)

Year: 1st

Department of: Computer Science

Paper: Machine Learning Lecturer: S. Prabhavathi

Sl. No	Roll No	Student Name	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	2052817	Kanumuri Vasanth Kumar	P	P	P	P	A	P	P	P	A	P	P	P	A	P	P	
2	2052818	Oruganti Arun Kumar	P	P	P	P	P	P	A	P	P	P	P	P	A	P	P	
3	2052819	Burepalli Abhinav	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	
4	2052820	Kolusu Jhansi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
5	2052821	Akunuri Bhumika	P	P	P	P	P	P	A	P	A	P	P	P	P	P	P	
6	2052822	Kambham Uday	P	P	P	P	P	P	P	P	A	P	P	P	P	A	P	
7	2052823	K. Bharath Kalyan	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	
8	2052824	Patan Shaheena	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	
9	2052825	E. Bindu	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	
10	2052826	S. Sri Chandana	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	
11	2052827	G. Sirisha	P	P	P	P	P	P	A	P	A	P	P	P	A	P	P	
12	2052828	T. Gopi Chand	P	P	P	A	P	P	P	P	A	P	A	P	P	A	P	
13	2052829	G. Navya	P	P	P	A	P	P	P	P	A	P	P	A	P	A	P	
14	2052830	Kanumuri Sri Ram	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	
15	2052831	N. Haritha Sri	P	P	A	P	P	A	P	P	A	P	A	P	A	P	A	
16	2052832	Shaik Ruksana	P	P	P	P	P	A	P	P	A	P	P	A	P	A	P	
17	2052833	Lanke Mohan Sai	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	
18	2052834	K. Anil Kumar	P	P	P	A	P	A	P	P	P	P	P	P	P	P	P	

S. Prabhavathi
Signature of Lecturer

[Signature]
Signature of HOD

[Signature]
Signature of Principal

AG & SG Siddhartha Degree College of Arts & Science (Autonomous), Vuyyuru



**ADUSUMILLI GOPALAKRISHNAIAH & SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru-521 165, Krishna District, Andhra Pradesh

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF COMPUTER SCIENCE

VALUE ADDED COURSE: MACHINE LEARNING

VAC CODE: MLVAC01

CERTIFICATE

This is to Certify that Ms.S.Sri Chandana Son /Daughter of shri/Smt S.Venkata Rao has Successfully completed value added course in **Machine Learning** Conducted by the Department of COMPUTER SCIENCE from **14-06-2018** to **15-07-2018** We wish him /her bright future.

S prabhavathi
Co-ordinator

[Signature]
Head of Department

[Signature]
Principal

PRINCIPAL
AG & SG Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru



**ADUSUMILLI GOPALAKRISHNAIAH & SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru-521 165, Krishna District, Andhra Pradesh

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF COMPUTER SCIENCE

VALUE ADDED COURSE: MACHINE LEARNING

VAC CODE: MLVAC01

CERTIFICATE

This is to Certify that Mr.K.Sriram Son /Daughter of shri/Smt K.Koteswara Rao has Successfully completed value added course in Machine Learning Conducted by the Department of COMPUTER SCIENCE from 14-06-2018 to 15-07-2018 We wish him /her bright future.

S. Prabhavathi
Co-ordinator

[Signature]
Head of Department

[Signature]
Principal

PRINCIPAL
AG & SG Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru

A.G&S.G.S DEGREE COLLEGE, VUYURU



Contact Us

Door No.2.391, College Road , Near
Kota complex ,Vuyyuru -521165

agsgsiddhartha@gmail.com

www.agsgsc.edu.in

DEPARTMENT OF MATHEMATICS



Course : Reasoning Ability
Code : MAT-VAC-02
Class : I MCCS
Duration: 30 Days



REASONING ABILITY

Value Added Course
on
REASONING ABILITY

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF MATHEMATICS

2018-2019

Value Added Course

Title: REASONING ABILITY

Name of the Lecturer : Mohammad Noor

Class : IMCCS

Duration of the Course : 30 HOURS

VAC Code : MAT-VAC-02

Value Added Course

Title: REASONING ABILITY

Objectives :

1. Analytical Thinking: Developing the ability to analyze information and identify patterns, relationships, and connections between different elements or data points.
2. Logical Reasoning: Enhancing logical reasoning skills to understand and evaluate arguments, identify logical fallacies, and draw valid conclusions based on given information.
3. Problem-Solving: Developing effective problem-solving skills, including the ability to identify problems, break them down into smaller components, generate solutions, and evaluate the effectiveness of different approaches.

Methodology :Teacher-Centeredmethod

Duration : 30 Hours

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Student Enrolment Sheet

Roll.No	Student Name	F/M
18. 701	Naralasetti puitha	F
18. 704	udugula Sandhya	F
18. 706	Mahali Bhuvana	F
18. 707	Veeramalla Venkatesh	M
18. 710	Jayavarapu Hari Krishna	M
18. 713	Valluru Sruthi	F
18. 714	Ganjala Anusha	F
18. 718	Allu Gauthami	F
18. 721	Alla Venkata Sai	M
18. 722	Bellam Jhansi	F
18. 725	Edupuganti Manoj Kumar	M
18. 730	Mediseti Siva Mani	M
18. 734	Veeragani shanmukha priya	F
18. 738	Bheri Ruchitha	F
18. 743	Ranga Nagalakshmi	F

[Signature]
lecturer

[Signature]
N.V. [Signature]
HOD

[Signature]
Principal
AG & SG Siddhartha Degree College
of Arts & Science
VUYYURU-521 100

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: REASONING ABILITY

Date: From 01.08.2018 to 31.08.2018

Date	Content	Module No.
01.08.2018	Analytical Thinking: Developing the ability to analyze information, data, or situations and identify patterns, relationships, and connections. This includes identifying trends, making observations, and drawing logical conclusions based on evidence.	I
08.08.2018	Logical Reasoning: Understanding the principles of logical reasoning, including identifying and evaluating arguments, identifying logical fallacies, and distinguishing between valid and invalid reasoning.	II
16.08.2018	Problem-Solving Strategies: Learning and applying different problem-solving strategies, such as breaking down complex problems into smaller, manageable parts, identifying relevant information, generating alternative solutions, and evaluating the best course of action.	III
24.08.2018	Deductive Reasoning: Understanding deductive reasoning, which involves drawing specific conclusions from general principles or rules. This includes understanding syllogisms, conditional statements, and using deductive reasoning to solve problems.	IV

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: REASONING ABILITY

Test Exercise:

Direction (1-5): Study the following information carefully and answer the given questions.

P, Q, R, S, T, U and V are sitting around a circular table with an equal distance between adjacent persons and some of them are facing the center and some of them are facing away from the center but not necessarily in the same order.

Two persons sit between R and V. V sits to the immediate left of T. R sits second to the left of U. U faces the center. Two persons sit between T and P. R sits immediate to either P or V. V faces the center. S faces the same direction of R. R faces opposite direction of T. Immediate neighbours of P face the same direction. P sits second to the right of Q. Immediate neighbours of S face the opposite directions (e.g. if one faces the center then other faces away from the center).

1. Who sits second to left of R?
1) P 2) S 3) Q 4) V 5) T
2. What is the position of U with respect to Q?
1) Second right 2) Immediate right 3) Second left 4) Immediate left 5) Third right
3. How many persons sit between S and T when counted from left of S?
1) One 2) Two 3) Three 4) Four 5) No one
4. Four of the following five are alike in a certain way and hence form a group, then which one doesn't belong to that group?
1) V 2) R 3) U 4) S 5) T
5. Which among the following statement is 'TRUE'?
1) Q and V face same direction 2) Two persons sit between S and T

3) R sits immediate right of Q 4) S and Q are immediate neighbours

5) All are false

Direction (6-10): The following questions are based on the five three letter words given below.

IWN SDH AFN KNU DMV

6. If the first and third letters of each word is interchanged, the second letter is changed to the previous letter according to the English alphabetical series, then how many words contain at least two vowels?
- 1) None 2) One 3) Two 4) Three 5) More than three
7. If the first and second letters of each word is interchanged then how many meaningful words will be formed?
- 1) Three 2) One 3) Four 4) Two 5) More than four
8. If the words are arranged according to the English dictionary order from right to left then which of the following word is second from the right end?
- 1) DMV 2) SDH 3) AFN 4) IWN 5) KNU
9. If each vowel in the word is changed to its previous letter and each consonant is changed to the next letter according to the alphabetical series, then how many words contain at least two vowels?
- 1) None 2) Four 3) Two 4) One 5) Three
10. How many letters are there in between the middle letter of the second word from the right end and the first letter of the first word from the left end as in the English alphabet series?
- 1) Two 2) Five 3) Six 4) Three 5) Four

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Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course
Title: REASONING ABILITY

Key: 1.4 2.4 3.1 4.5 5.3 6.2 7.4 8.1 9.4 10.5

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Mathematics

Value Added Course

Title: REASONING ABILITY

Marks List

Class: I B.Sc MCCs

S. No	Roll No.	Name of the Student	Marks
1	18.701	Naralasetti pujitha	18
2	18.704	vologula Sandhya	16
3	18.706	Mahali Bhevana	18
4	18.707	Veeramulla Venkatesh	20
5	18.710	Jayavarapu Hari Krishna	18
6	18.713	Valluru Swathi	16
7	18.714	Ganjala Anusha	18
8	18.718	Allu Gowthami	16
9	18.721	Alla Venkata Sai	18
10	18.722	Bellam Jhansi	16
11	18.725	Edupuganti Manoj Kumar	18
12	18.730	Mediseti Siva Mani	16
13	18.734	veeragani shanmukha priya	18
14	18.738	Bheri Ruchitha	16
15	18.743	Ranga Nagalakshmi	18

N. V. S. R.
Lecturer

N. V. S. R.
HOD

D. Balakrishna
Principal
AG & SG Siddhartha Degree College
of Arts & Science (Autonomous)
VUYURU-521 165

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section: I MCC₁

Year : 2018-19

Department of: Mathematics

Paper: MAT-VAC-02

Lecturer: Mohammed Noor

Sl.No	Roll No	Student Name	Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1	18.701	Navalasetti pusitha		P	A	P	P	P	P	A	P	P	P	P	A	P	P	P	12
2	18.704	Edugula Sandhya		P	P	P	P	A	P	P	A	P	P	P	P	A	P	P	12
3	18.706	Mahali Bhuvana		P	P	A	P	P	P	P	A	P	P	A	P	P	P	P	12
4	18.707	Veeramullu Venkatesh		A	P	P	P	P	P	P	A	P	P	P	P	A	P	P	12
5	18.710	Jayavarapu Hari Krishna		P	P	A	P	P	A	P	P	P	A	P	P	P	P	A	11
6	18.713	Valluru Sruthi		A	P	P	P	P	A	P	P	P	P	P	P	A	P	P	12
7	18.714	Ganjala Anusha		P	P	P	A	P	P	P	A	P	P	A	P	P	P	P	12
8	18.718	Allu Gouthami		P	P	A	P	P	P	A	P	P	P	P	A	P	P	A	11
9	18.721	Alla Venkata Sai		P	P	P	P	P	A	P	P	P	A	P	P	A	P	P	12
10	18.722	Bellam Jhansi		P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	13
11	18.725	Edupuganti Harani Kumar		P	P	A	P	P	P	P	A	P	P	P	A	P	A	P	11
12	18.730	Hediseti Siva Hari		A	P	P	P	A	P	P	P	P	A	P	P	P	P	P	12
13	18.734	Veeraganam Sharmukha Priya		P	P	P	A	P	P	P	P	A	P	P	P	A	P	P	12
14	18.738	Bheri Ruchitha		P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	13
15	18.743	Ranga Nagalakshmi		A	P	P	P	A	P	P	P	A	P	P	A	P	P	A	10

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section: EMCC

Year : 2018-19

Department of: Mathematics

Paper: MAT-VAC-02, Lecturer: Mohammad Nazim

Sl.No	Roll No	Student Name	Category	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	18. 701	Naralasetti Sujitha		A	P	P	P	A	P	P	P	P	A	P	P	P	A	P	23
2	18. 704	Chidugula Sandhya		P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	25
3	18. 706	Mahali Bhuvana		P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	25
4	18. 707	Veeramallu Venkatesh		P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	25
5	18. 710	Jayavarapu Hari Krishna		P	P	P	A	P	P	P	P	P	A	P	P	P	P	A	23
6	18. 713	Valluru Sruthi		P	A	P	P	P	A	P	A	P	P	P	A	P	P	P	23
7	18. 714	Ganjala Anusha		A	P	A	P	A	P	P	P	A	P	P	P	P	A	P	22
8	18. 718	Allu Gauthami		P	A	P	A	P	P	P	A	P	P	P	A	P	P	A	21
9	18. 721	Alla Venkata Sai		P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	25
10	18. 722	Bellam Jhansi		P	P	A	P	P	A	P	P	P	A	P	P	P	P	P	25
11	18. 725	Edupuganti Manoj Kumar		P	P	P	P	A	P	P	P	A	P	P	P	P	A	P	23
12	18. 730	Mediseti Siva Mani		P	A	P	P	P	P	A	P	P	P	P	A	P	P	P	24
13	18. 735	Neeragan Shantoukha Priya		P	P	P	A	P	P	P	A	P	P	P	P	P	P	A	24
14	18. 738	Bheri Richitta		A	P	P	P	P	A	P	P	P	P	P	P	A	P	P	25
15	18. 743	Ranga Nagalakshmi		P	A	P	P	P	P	P	A	P	P	A	P	P	P	P	22

[Signature]
Lecturer

[Signature]
HOB

[Signature]
Principal
AG & SG Siddhartha Degree College
of Arts & Science (Autonomous)
VUYURU-521-165

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Mathematics

Value Added Course

Title: REASONING ABILITY

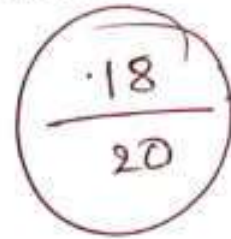
Feed Back Form

1. Is the programme interested to you (Yes/No)
2. Have you attended all the session (Yes/No)
3. Is the content of the program is adequate (Yes/No)
4. Have the teacher covered the entire syllabus? (Yes/No)
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No)
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No)
8. Do you have any suggestions on the program? (Yes/No)

A.G. & S.G. Siddhartha Degree College of Arts & Science
 Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: REASONING ABILITY



Test Exercise:

Direction (1-5): Study the following information carefully and answer the given questions.

P, Q, R, S, T, U and V are sitting around a circular table with an equal distance between adjacent persons and some of them are facing the center and some of them are facing away from the center but not necessarily in the same order.

Two persons sit between R and V. V sits to the immediate left of T. R sits second to the left of U. U faces the center. Two persons sit between T and P. R sits immediate to either P or V. V faces the center. S faces the same direction of R. R faces opposite direction of T. Immediate neighbours of P face the same direction. P sits second to the right of Q. Immediate neighbours of S face the opposite directions (e.g. if one faces the center then other faces away from the center).

- Who sits second to left of R?
 1) P 2) S 3) Q 4) V 5) T
- What is the position of U with respect to Q?
 1) Second right 2) Immediate right 3) Second left 4) Immediate left 5) Third right

- How many persons sit between S and T when counted from left of S?
 1) One 2) Two 3) Three 4) Four 5) No one
- Four of the following five are alike in a certain way and hence form a group, then which one doesn't belong to that group?
 1) V 2) R 3) U 4) S 5) T
- Which among the following statement is 'TRUE'?
 1) Q and V face same direction 2) Two persons sit between S and T

3) R sits immediate right of Q 4) S and Q are immediate neighbours

5) All are false

Direction (6-10): The following questions are based on the five three letter words given below.

IWN SDH AFN KNU DMV

6. If the first and third letters of each word is interchanged, the second letter is changed to the previous letter according to the English alphabetical series, then how many words contain at least two vowels?
1) None 2) One 3) Two 4) Three 5) More than three
7. If the first and second letters of each word is interchanged then how many meaningful words will be formed?
1) Three 2) One 3) Four 4) Two 5) More than four
8. If the words are arranged according to the English dictionary order from right to left then which of the following word is second from the right end?
1) DMV 2) SDH 3) AFN 4) IWN 5) KNU
9. If each vowel in the word is changed to its previous letter and each consonant is changed to the next letter according to the alphabetical series, then how many words contain at least two vowels?
1) None 2) Four 3) Two 4) One 5) Three
10. How many letters are there in between the middle letter of the second word from the right end and the first letter of the first word from the left end as in the English alphabet series?
1) Two 2) Five 3) Six 4) Three 5) Four

A.G. & S.G. Siddhartha Degree College of Arts & Science
 Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: REASONING ABILITY

20

 20

Test Exercise:

Direction (1-5): Study the following information carefully and answer the given questions.

P, Q, R, S, T, U and V are sitting around a circular table with an equal distance between adjacent persons and some of them are facing the center and some of them are facing away from the center but not necessarily in the same order.

Two persons sit between R and V. V sits to the immediate left of T. R sits second to the left of U. U faces the center. Two persons sit between T and P. R sits immediate to either P or V. V faces the center. S faces the same direction of R. R faces opposite direction of T. Immediate neighbours of P face the same direction. P sits second to the right of Q. Immediate neighbours of S face the opposite directions (e.g. if one faces the center then other faces away from the center).

1. Who sits second to left of R?
 1) P 2) S 3) Q 4) V 5) T
2. What is the position of U with respect to Q?
 1) Second right 2) Immediate right 3) ~~Second left~~ 4) Immediate left 5) Third right
3. How many persons sit between S and T when counted from left of S?
 1) One 2) Two 3) Three 4) Four 5) No one
4. Four of the following five are alike in a certain way and hence form a group, then which one doesn't belong to that group?
 1) V 2) R 3) U 4) S 5) T
5. Which among the following statement is 'TRUE'?
 1) Q and V face same direction 2) Two persons sit between S and T

- 3) R sits immediate right of Q 4) ~~S~~ and Q are immediate neighbours
5) All are false

Direction (6-10): The following questions are based on the five three letter words given below.

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**ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P**
(Accredited at "A" level by NAAC, Bengaluru)



Department of Mathematics

VALUE ADDED COURSE: Reasoning Ability

CERTIFICATE

This is to Certify that *Narasimha Pujitha* Son/Daughter of Shri/Smt *N. Srinivasa Rao*
has Successfully completed value added course in **Reasoning Ability**
Conducted by the Department of Mathematics from 01-08-2018 to 31-08-2018 We wish him her bright future

N. V. S.
Co-ordinator

N. V. S.
Head of Department

D. Balakrishna
Principal
AG & SG Siddhartha Degree College
of Arts & Science (Autonomous)
VUYYURU-521 165



**ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)**



Department of Mathematics

VALUE ADDED COURSE: Reasoning Ability

CERTIFICATE

This is to Certify that . *Udugula Sanchya* Son/Daughter of Shri/Smt *U. Srinivasa Rao*

has Successfully completed value added course in **Reasoning Ability**

Conducted by the Department of Mathematics from 01-08-2018 to 31-08-2018 We wish him her bright future

[Signature]
Co-ordinator

N.V. [Signature]
Head of Department

D. Balakrishna
Principal
AG & SG Siddhartha Degree College
of Arts & Science (Autonomous)
VUYYURU-521 165



**Adusumilli Gopalakrishnaiah & Sugarcane Growers
Siddhartha Degree College of Arts and Science**
Autonomous College :: Aided College of Govt. of AP
NAAC 'A' Grade College
Vuyyuru, Krishna (Dt.), Andhra Pradesh-521165

VALUE ADDED COURSE

TITLE: INTRODUCTION TO NANO CHEMISTRY

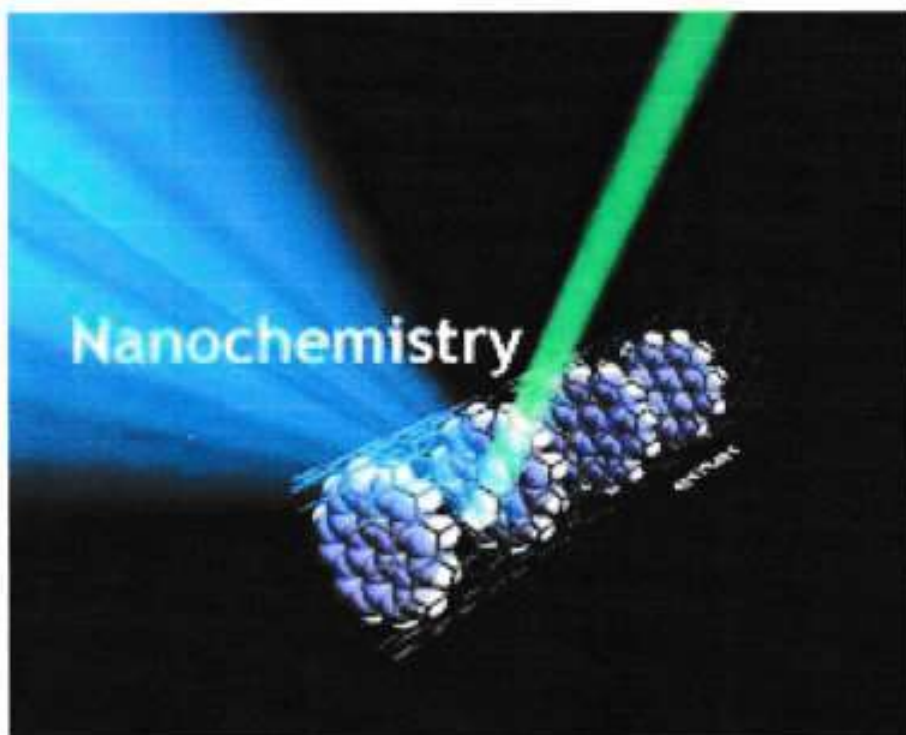
VAC CODE: CHEV1C1

2ND Aug 2018 TO 31th Aug 2018

Duration of the Course: 30Hrs

Organized By

Department of CHEMISTRY P.G



A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF Chemistry [P.G]

Value Added Course

Title: Introduction to Nano Chemistry

Name of the Lecturer	:	V.N.V. Kishore
Class	:	I M.Sc (Organic Chemistry)
Duration of the Course	:	Thirty Days
VAC Code	:	CHEV1C1

Objectives: Introduction to Nano Chemistry

The objective of Nano particles are disseminate knowledge of the physical, chemical and phenomena and processes in structures that have at least one length scale ranging from molecular to approximately 100 nm (or submicron in some situations), and exhibit improved and novel properties that are a direct result of their small size

Methodology :

Experimental and Learning Methods

Duration: 30 Days

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: Introduction to Nano Chemistry

Date: 02/08/2018 to 31/08/2018

S.NO	Content	Module No
1	Introduction to Nano Chemistry	I
2	Physical methods: (a)mechanical:ballmilling,melting(b)Vapor:physicalvapordeposition,laserablation,sputterdeposition,electricarcdeposition,ionimplantation.	II
3	Chemical methods: colloids,sol-gel,L-Bfilms,inversemicelles.	III
4	Biological methods: biomembranes,DNA,enzymes,microorganisms.	IV

Value Added Course

Title: Introduction to Nano Chemistry

Test Exercise:

1. Safety symbols have to be known in lab. (Yes/No)
2. Explosives identified by symbols. (Yes/No)
3. Carcinogenic means----- causing.
4. Skull and bones indicates _____.
5. First aid box is required in laboratory_____.
6. Causing Blisters, burns is example for_____ damage
7. Compressed gas example is_____.
8. Cylinder symbol indicates _____.
9. Laboratory safety glasses are to be used. (Yes/No)
10. Hazard means_____.

Value Added Course

Title: Introduction to Nano Chemistry

Key:

1. Inert Water
2. Hard and brittle
3. Chemical vapor deposition
4. True
5. Metal alkoxides
6. CVC
7. c) Helium
8. Bulk -> Powder -> Nano-particles
9. Colloidal dispersion
10. Carbon Nanotubes

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Chemistry [P.G]

Value Added Course

Title: Introduction to Nanochemistry

Feed Back Form

Name of the Student:

Class and Roll Number:

1. Is the programme interested to you (Yes/No)
2. Have you attended all the session (Yes/No)
3. Is the content of the program is adequate (Yes/No)
4. Have the teacher covered the entire syllabus? (Yes/No)
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the (Yes/No)
number of weeks designed for the program?
7. On the whole, is the program useful in terms of enriching (Yes/No)
your knowledge?
8. Do you have any suggestions on the program? (Yes/No)

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Student Enrolment Sheet

Class: IM.Sc (Organic Chemistry)

S. No	Roll No.	Name of the Student	Signature
1	Y180CH102001	Abdul Raheem	A. Raheem
2	Y180CH102002	A. Vineela	A. Vineela
3	Y180CH102003	B. Ravi Teja	B. Ravi Teja
4	Y180CH102004	Ch. Deva Latha	Ch. Deva Latha
5	Y180CH102005	D. Divya	D. Divya
6	Y180CH102006	G. Sasi Kumar	G. Sasi Kumar
7	Y180CH102007	G. Amma Rao	G. Amma Rao
8	Y180CH102008	G. Anil	G. Anil
9	Y180CH102009	J. Sri Lekha	J. Sri Lekha
10	Y180CH102010	J.D.B. Naik	J.D.B. Naik
11	Y180CH102011	J. Veeramma	J. Veeramma
12	Y180CH102012	J. Kavitha	J. Kavitha
13	Y180CH102013	K. Naga Sai	K. Naga Sai
14	Y180CH102014	K. Srikanth	K. Srikanth
15	Y180CH102015	K. Sowjanya	K. Sowjanya

V. N. V. P.

v.f.
Head, P.G. Department of Chemistry
A.G. & S.G. Siddhartha College of Arts & Science
MUYURU-521165 Krishna Dt. A.P.

AG & SG
PRINCIPAL

AG & SG Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Chemistry [P.G.]

Value Added Course

Title: Introduction to Nano chemistry

Marks List

Class: I M.Sc (Organic Chemistry)

S. No	Roll No.	Name of the Student	Marks
1	Y180CH102001	Abdul Rebeem	14
2	Y180CH102002	A. Vineeta	16
3	Y180CH102003	B. Ravi Teja	20
4	Y180CH102004	Ch. Deva Latha	14
5	Y180CH102005	D. Divya	08
6	Y180CH102006	G. Sasi Kumari	16
7	Y180CH102007	G. Amma Rao	16
8	Y180CH102008	G. Anil	18
9	Y180CH102009	J. Sritekha	16
10	Y180CH102010	J. D. B. Naik	14
11	Y180CH102011	J. Veeramma	08
12	Y180CH102012	J. Kavitha	14
13	Y180CH102013	K. Naga Sai	16
14	Y180CH102014	K. Srikanth	12
15	Y180CH102015	K. Sowjanya	16

V. N. V. S.

V. N. V. S.
Head, P.G. Department of Chemistry
A.G. & S.G. Siddhartha College of Arts & Science
VUYYURU-521165 Krishna Dt., A.P.

Praveen
PRINCIPAL

AG & SG Siddhartha Degree College
Arts & Science (Autonomous), Vuyyuru

A.G. & S.G. Siddhartha Degree College of Arts & Science
 Vuyyuru-521165, Krishna District, Andhra Pradesh
Value Added Course / Certificate Course - Attendance Register

Class / Section: MSc Year: 2018 Department of: PG Chemistry Paper: CHEM1C1 Lecturer: N. N.V. kishore

Sl. No	Roll No	Student Name	category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
1	Y18CHO2001	Abdul Raheem	OBC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	19
2	Y18CHO2002	A. Vineela	SC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	18
3	Y18CHO2003	B.Ravi Teja	SC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	18
4	Y18CHO2004	CH.Deva latha	BC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	18
5	Y18CHO2005	D.Diya	SC	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	17
6	Y18CHO2006	G.Sasikumar	SC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
7	Y18CHO2007	G.Amma Rao	BC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	16
8	Y18CHO2008	G.Anil	BC	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	18
9	Y18CHO2009	J.Sri Leka	BC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	17
10	Y18CHO2010	J.D.Balu Naik	ST	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	17
11	Y18CHO2011	J.Veeramma	SC	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	16
12	Y18CHO2012	J.Kavitha	SC	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	17
13	Y18CHO2013	K.Naga Sai	BC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
14	Y18CHO2014	K.Srikanth	BC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	18
15	Y18CHO2015	K.Sowjanya	BC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	17

Signature of the Lecturer

Signature of the HOD

Principal

Head B.C. Department of Chemistry,
 Arts & Science Department of Arts & Science,
 Vuyyuru-521165, Krishna Dist., A.P.

AG & SG Siddhartha Degree College
 Arts & Science (Autonomous), Vuyyuru

A.G. & S.G. Siddhartha Degree College of Arts & Science
 Vuyuru-521165, Krishna District, Andhra Pradesh
Value Added Course / Certificate Course - Attendance Register

Class / Section: MSC Year:2018 Department of: PG Chemistry Paper: Lecturer: V.N.V.Kishore

Sl. No	Roll No	Student Name	category	21	22	23	24	25	26	27	28	29	30	Total
1	Y18CHO2001	Abdul.Rahem	OBC	P	P	P	A	P	P	P	P	P	P	9
2	Y18CHO2002	A.Vineela	SC	P	P	A	P	P	P	P	P	P	P	9
3	Y18CHO2003	B.Ravi Teja	SC	P	P	P	P	P	A	P	P	A	P	8
4	Y18CHO2004	CH.Deva latha	BC	P	P	P	A	P	P	P	P	A	P	8
5	Y18CHO2005	D.Divya	SC	P	A	P	P	P	P	P	P	P	P	9
6	Y18CHO2006	G.Sasikumar	SC	P	A	P	P	P	P	P	P	P	P	9
7	Y18CHO2007	G.Amma Rao	BC	P	P	P	P	P	P	P	P	P	P	10
8	Y18CHO2008	G.Anil	BC	A	P	P	P	P	P	P	P	P	P	9
9	Y18CHO2009	J.Sri Leka	BC	P	P	P	P	P	A	P	P	P	P	9
10	Y18CHO2010	J.D.Balu Naik	ST	P	P	P	P	P	A	P	P	P	P	9
11	Y18CHO2011	J.Veeramma	SC	A	P	P	P	P	A	P	P	P	P	8
12	Y18CHO2012	J.Kavitha	SC	P	P	P	P	P	A	P	P	P	P	9
13	Y18CHO2013	K.Naga Sai	BC	P	P	P	P	P	P	A	P	P	A	8
14	Y18CHO2014	K.SRIkanth	BC	P	P	P	A	P	P	P	P	P	P	9
15	Y18CHO2015	K.Sowjanya	BC	P	A	P	A	P	P	P	P	P	A	7

Signature of the Lecturer

Signature of the HOD

Chawne
PRINCIPAL

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

16
20

Value Added Course

Title: Introduction to Nano Chemistry

Test Exercise:

1. For milling operations, what kind of environment is preferred? Inert water
2. What kind of metals are used for milling operations? Hard and brittle
3. CVD stands for chemical vapour deposition
4. Photolithography is a type of patterning technique. false
5. Typical precursor used in sol-gel are alkoxides
6. Particles of ZrO_2 , Y_2O_3 and Nano whiskers have been produced by CVE
7. Which gas serves as buffer gas in Laser ablation? Helium
8. What's the procedure in Top-down fabrication method? Bulk \rightarrow powder \rightarrow nanoparticles
9. What is an example of Bottom Up approach? colloidal dispersion.
10. CNTs stands for Carbon nano-tubes

Value Added Course

Title: Introduction to Nano chemistry

Test Exercise:

1. For milling operations, what kind of environment is preferred? Inert water
2. What kind of metals are used for milling operations? Hard and brittle
3. CVD stands for chemical vapour deposition
4. Photolithography is a type of patterning technique. True
5. Typical precursor used in sol-gel are metal alkoxides
6. Particles of ZrO_2 , Y_2O_3 and Nano whiskers have been produced by CVD
7. Which gas serves as buffer gas in Laser ablation? Helium
8. What's the procedure in Top-down fabrication method? Bulk \rightarrow powder \rightarrow nano-particles
9. What is an example of Bottom Up approach? Carbon nanotubes, -colloidal.
10. CNTs stands for Carbon nanotubes

A.G. & S.G. Siddhartha Degree College of Arts & Science
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Department of Chemistry

Value Added Course

Title: Introduction to Nano Chemistry

Feed Back Form

Name of the Student: *G. Anil*

Class and Roll Number: *IMSC(chemistry) & Y180CH102008*

1. Is the programme interested to you (Yes/No)
2. Have you attended all the session (Yes/No)
3. Is the content of the program is adequate (Yes/No)
4. Have the teacher covered the entire syllabus? (Yes/No)
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No)
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No)
8. Do you have any suggestions on the program? (Yes/No)

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Department of Chemistry [P.G]

Value Added Course

Title: Introduction to NanoChemistry

Feed Back Form

Name of the Student: *G. Amma Rao*

Class and Roll Number: *IMsc(chemistry) & Y180CH102007*

1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
4. Have the teacher covered the entire syllabus? (Yes/No) ✓
5. Is the number of hours adequate? (Yes/No) ✓
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

Module-I

Synthesis of Nanomaterials

Introduction

Many techniques are available to synthesize different types of nanomaterials in the form of colloids, clusters, powders, tubes, rods, wires, thin films, etc. Various physical, chemical, biological, and hybrid techniques are available to synthesize nanomaterials. The technique to be used depends upon the material of interest, type of nanostructure viz., zero-dimensional, one-dimensional, or two-dimensional material size; quantity, etc.

Physical methods: (a) *mechanical:* ball milling, melt mixing

(b) *vapor:* physical vapor deposition, laser ablation, sputter deposition, electric arc deposition, ion implantation

Chemical methods: colloids, sol-gel, L-B films, inverse micelles.

Biological methods: biomembranes, DNA, enzymes, microorganisms.

Module-II

Physical methods

(a) **Ball milling:** It is used in making of nanoparticles of some metals and alloys in the form of powder. Usually the mill contains one or more containers are used at a time to make fine particles. Size of container depends upon the quantity of interest. Hardened steel or tungsten carbide balls are put in containers along with powder or flakes ($<50 \text{ }\mu\text{m}$) of a material of interest. Initial material can be of arbitrary size and shape. Container is closed with tight lids. The containers are rotated at high speed (a few hundreds of rpm) around their own axis. Additionally they may rotate around some central axis and are therefore called as 'planetary ball mill'. When the containers are rotating around the central axis, the material is forced to the walls and is pressed against the walls. But due to the motion of the containers around their own axis, the material is forced to other region of the container. By controlling the speed of rotation of the central axis and container as well as duration of milling, it is possible to ground the material to fine powder whose size can be quite uniform. Some of the materials like Co, Cr, W, Ni-Ti, Al-Fe, Ag-Fe etc. are made nanocrystalline using ball mill.

Large balls, used for milling, produce smaller grain size and larger defects in the particles. The process may add some impurities from balls. The container may be filled with air or inert gas. However, this can be an additional source of impurity. A temperature rise in the range of 100 to 1100 C is expected to take place during the collisions. Cryo-cooling is used to dissipate the generated heat.

(b) **Melt Mixing:** It is possible to form or arrest the nanoparticles in glass. Structurally, glass is an amorphous solid, lacking long range periodic arrangement as well as symmetry arrangement of atoms/molecules. When a liquid is cooled below certain temperature, it forms either a crystalline or amorphous solid (glass). Nuclei are formed spontaneously with homogeneous (in the melt) or inhomogeneous (on the surface of other materials) nucleation, which can grow to form ordered, crystalline solid. Usually, metals form crystalline solids but, if cooled at very high cooling rate, they can form amorphous solids. Such solids are known as metallic glasses. Even in such cases the atoms try to reorganize themselves into crystalline solids. Addition of elements like B, P, Si etc. helps to keep the metallic glasses in amorphous state. It is possible to form nanocrystals within metallic glasses. It is also possible to form some nanoparticles by mixing the molten streams of metals at high velocity with turbulence. On mixing thoroughly, nanoparticles are formed.

(c) **Physical Vapor Deposition:** It involves material for evaporation, an inert gas or reactive gas for collision of material vapor, a cold finger on which clusters or nanoparticles can condense, a scraper to scrape the nanoparticles and piston- anvil (an arrangement in which nanoparticle powder can be compacted). All the processes are carried out in a vacuum chamber so that the desired purity of the end product can be obtained.

Metals or high vapor pressure metal oxides are evaporated or sublimated from filaments or boats of refractory metals like W, Ta, Mo in which materials to be evaporated are held. Size, shape and even the phase of evaporated material can depend upon the gas pressure in deposition chamber. Clusters or nanoparticles condensed on the cold finger (water or liquid nitrogen cooled) can be scraped off inside the vacuum system. The process of evaporation and condensation can be repeated several times until enough quantity of material falls through a funnel in which a piston-anvil arrangement has been provided.

(d) **Ionized Cluster Beam Deposition:** It is useful to obtain adherent and high quality single crystalline thin films. The set up consists of a source of evaporation, a nozzle through which material can expand into the chamber, an electron beam to ionize the clusters, an arrangement to accelerate the clusters and a substrate on which nanoparticle film can be deposited, all housed in a suitable vacuum chamber. Small clusters from molten material are expanded through the fine nozzle. The vapor pressure, ~ 10 torr to 10^{-2} torr needs to be created in the source and the nozzle needs to have a diameter larger than the mean free path of atoms or molecules in vapor form in the source to form the clusters. On collision with electron beam clusters get ionized. Due to applied accelerating voltage, the clusters are directed towards the substrate. By controlling the accelerating voltage, it is possible to control the energy with which the clusters hit the substrate. Thus it is possible to obtain the films of nanocrystalline material using ionized cluster beam.

(e) **Laser Vaporization:** In this method, vaporization of the material is effected using pulses of laser beam of high power. The set up is a ultra high vacuum or high vacuum system equipped with inert or reactive gas introduction facility, laser beam, solid target and cooled substrate. Clusters of any material of which solid target can be made are possible to synthesize. Usually laser giving UV wavelength such as excimer laser is necessary because other wavelengths like IR or visible are often reflected by some of the metal surface. A powerful beam of laser evaporates the atoms from a solid source, atoms collide with inert gas

atoms (or reactive gases) and cool on them forming clusters. They condense on the cooled substrate. The method is often known as laser ablation. Gas pressure is very critical in determining the particle size and distribution. Simultaneous evaporation of another material and mixing the two evaporated materials in inert gas leads to the formation of alloys or compounds.

(f) **Laser Pyrolysis or Laser Assisted Deposition:** Here a mixture of reactant gases is decomposed using a powerful laser beam in presence of some inert gas like helium or argon. Atoms or molecules of decomposed reactant gases collide with inert gas atoms and interact with each other, grow and are then get deposited on cooled substrate. Many materials like Al_2O_3 , WC, Si_3N_4 etc. are synthesized in nanocrystalline form by this method. Here too, gas pressure plays an important role in deciding the particle size and their distribution.

(g) **Sputter Deposition:** In sputter deposition, some inert gas ions like Ar are incident on a target at a high energy. The ions become neutral at the surface but due to their energy, incident ions may get implanted, get bounded back, create collision cascades in target atoms, displace some of the atoms in the target creating vacancies, interstitials and other defects, desorb some adsorbents, create photons while losing energy to target atoms or even sputter out some target atoms/molecules, clusters, ions and secondary electrons. Sputter deposition is a widely used thin film deposition technique, specially to obtain stoichiometric thin films from target material. Target material may be some alloy, ceramic or compound. It is a very good technique to deposit multilayer films for mirrors or magnetic films for spintronic applications. Sputter deposition can be carried out using Direct Current (DC) sputtering, Radio Frequency (RF) sputtering or magnetron sputtering. In all these methods, one uses discharge or plasma of some inert gas atoms or reactive gases. The deposition is carried out in a required gas pressurized high vacuum or ultra high vacuum system equipped with electrodes, one of which is a sputter target and the other is a substrate, gas introduction facility etc.

In DC sputtering, the target is held at high negative voltage and substrate may be at positive, ground or floating potential. Substrates may be simultaneously heated or cooled depending upon the requirement. Once the required base pressure is attained in the vacuum system, usually argon gas introduced at a low pressure. A visible glow is observed and current flows between anode and cathode indicating the deposition onset. When sufficiently high voltage is applied between anode and cathode with a gas in it, a glow discharge is set up with different

regions as cathode glow, Crooke's dark space, negative glow, Faraday dark space, positive column, anode dark space and anode glow. These regions are the result of plasma. Plasma is a mixture of free electrons, ions and photons. Plasma is overall neutral but there can be regions, which are predominantly of positive or negative charge. The density of various particles and the length over which they are spread and distributed depends upon the gas pressure.

In RF sputtering 5-30 MHz frequency is used and the electrodes can be insulating. However, 13.56 MHz is a commonly used frequency for deposition. Target itself biases to negative potential becoming cathode.

RF and DC sputtering efficiency can be further increased using magnetic field. When both electric and magnetic fields act simultaneously on a charged particle, force is acted upon it. Electrons move in a helical path and is able to ionize more atoms in the gas. In practice, both parallel and magnetic fields to the direction of electric field are used to further increase the ionization of the gas, increasing the efficiency of sputtering. By introducing gases like O_2 , N_2 , NH_3 , CH_4 , H_2S etc. while metal targets are sputtered, one can obtain metal oxides like Al_2O_3 , nitrides, carbides etc.. This is known as reactive sputtering.

The plasma density can be further enhanced using microwave frequency and coupling the resonance frequency of electrons in magnetic field. Ionization density using Electron Cyclotron Resonance plasma is about 2-3 orders of magnitude larger. Thin films and nanoparticles of Si_3N_4 , SiN , GaN etc. have been obtained using this technique.

(h) **Chemical Vapour Deposition (CVD):** It is a hybrid method using chemicals in vapour phase. Basic CVD process can be considered as a transport of reactant vapour or reactant gas towards the substrate kept at some high temperature where the reactant cracks into different products which diffuse on the surface, undergo some chemical reaction at appropriate site, nucleate and grow to form the desired material film. The by-products created on the substrate have to be transported back to the gaseous phase removing them from the substrate. Vapours of desired material may be often pumped into reaction chamber using some carrier gas. In some cases the reactions may occur through aerosol formation in gas phase. There are various processes such as reduction of gas, chemical reaction between different source gases,

preferable that the reaction occurs at the substrate rather than in the gas phase. Usually temperature ~ 300 to 1200 C is used at the substrate. There are two ways viz., hot wall and cold wall by which substrates are heated. In hot wall set up the deposition can take place even on reactor walls. This is avoided in cold wall design. Besides this, the reaction can take place in gas phase with hot wall design, which is suppressed in cold wall set up. Further, coupling of plasma with chemical reaction in cold wall set up is feasible. Usually gas pressures in the range of 0.1 torr to 1.0 torr are used. Growth rate and film quality depend upon the gas pressure and the substrate temperature. When the growth takes place at low temperature, it is limited by the kinetics of surface tension.

CVD is widely used in industry because of relatively simple instrumentation, ease of processing, possibility of depositing different types of materials and economic viability. Under certain deposition conditions nanocrystalline films or single crystalline films are possible. There are many variants of CVD like metallo organic CVD (MOCVD), atomic layer epitaxy (ALE), vapor phase epitaxy (VPE), plasma enhanced CVD (PECVD) etc. They differ in source gas pressure, geometrical layout, temperature used etc.

(i) **Electro Arc Deposition:** This is one of the simplest and useful methods, which leads to mass scale production of fullerenes and carbon nanotubes. It requires water cooled vacuum chamber and electrodes to strike an arc between them. The positive electrode itself acts as the source of material. If some catalyst are to be used, there can be some additional thermal source of evaporation. Inert gas or reactive gas introduction is necessary. Usually the gap between the electrodes is ~ 1 mm and high current ~ 50 to 100 amperes is passed from a low voltage power supply (~ 12 - 15 volts). Inert gas pressure is maintained in the vacuum system. When an arc is set up, some material evaporates. This is possible as long as the discharge can be maintained. By striking the arc between the two graphite electrodes, it is possible to get fullerenes in large quantity. In case of fullerenes, the formation occurs at low helium pressure as compared to that used for nanotube formation. Also, fullerenes are obtained by purification of soot collected from inner walls of vacuum chamber, whereas nanotubes are found to be formed only in high He gas pressure and in the central portion of the cathode. No carbon nanotubes are found on the chamber walls.

(j) **Ion Implantation:** In this method high energy (few keV to hundreds of keV) or low energy (1 - 200 eV) ions are used to obtain nanoparticles. Ions of interest are usually formed using an ion gun specially designed to produce metal ions, which are accelerated to high or

low energy towards the substrate heated to few hundred of C. Depending upon the energy of the incident ions, various other processes like sputtering and generation of electromagnetic radiation may take place. It is possible to obtain single element nanoparticles or compounds and alloys of more than one element. In some experiments it has been possible to even obtain doped nanoparticles using ion implantation. There is possibility of making nanoparticles using swift heavy ions (few MeV energy) employing ion accelerators like a pelletron.

(k) **Molecular beam epitaxy (MBE):** This technique of deposition can be used to deposit elemental or compound quantum dots, quantum wells, quantum wires in a very controlled manner. High degree of purity in materials is achievable using ultra high vacuum (better than 10^{-10} torr). Special sources of deposition known as Kundsens cell (K-cell) or effusion cell are employed to obtain molecular beams of the constituent elements. The rate of deposition is kept very low and substrate temperature is rather high in order to achieve sufficient mobility of the elements on the substrate and layer by layer growth to obtain nanostructures.

(l) **Thermolysis:** Nanoparticles can be made by decomposing solids at high temperature having metal cations, and molecular anions or metal organic compounds. The process is called thermolysis. For example, small lithium particles can be made by decomposing lithium azide, LiN_3 . The material is placed in an evacuated quartz tube and heated to 400 C. At but 370 C LiN_3 decomposes, releasing N_2 gas, which is observed by an increase in the pressure on the vacuum gauge. In a few minutes the pressure drops back to its original low value, indicating that all the N_2 has been removed. The remaining lithium atoms coalesce to form small colloidal metal particles. Particles less than 5nm can be made by this method. Passivation can be achieved by introducing an appropriate gas.

(m) **Pulsed laser method:** Pulsed lasers have been used in the synthesis of nanoparticles of silver. Silver nitrate solution and a reducing agent are flowed through a blenderlike device. In the blender there is a solid disk, which rotates in the solution. The solid disk is subjected to pulses from a laser beam creating hot spots on the surface of the disk. Silver nitrate and the reducing agent react at these hot spots, resulting in the formation of small silver particles, which can be separated from the solution using a centrifuge. The size of particles is controlled by the energy of the laser and rotation speed of the disk. This method is capable of a high rate of production.

Module-III

1. Chemical Methods (Wet Chemical route)

There are numerous advantages of using chemical methods, which are –

- Inexpensive, less instrumentation compared to many physical methods
- Low temperature (< 350 C) synthesis.
- Dopant of foreign atoms (ions) possible during synthesis
- Variety of size and shapes are possible
- Self-assembly or patterning is possible

(a) **Colloids and Colloids in solutions:** A class of materials in which two or more phases (solid, liquid, gas) of same or different materials co-exist with at least one dimension less than a micrometer is known as colloids. Colloids may be particles, plates, or fibers. Nanomaterials are a sub-class of colloids, in which one of the dimensions of colloids is in about 1 to 100 nm range. Colloids are the particles suspended in some host matrix.

Interaction: Colloids are particles with large surface to volume ratio. Therefore atoms on the surface are in a highly reactive state, which easily interact to form bigger particles or tend to coagulate. It is thus necessary to understand the stability of colloids i.e., how the colloids dispersed in a medium can remain suspended particles. In general there are a number of interactions involved. There are two types of interactions: attractive and repulsive. Repulsive interaction involves short distance of Born repulsive interaction and long range attractive interaction van der Waals attraction. Repulsive part arises due to repulsion between electron clouds in each atom and attractive part is due to interaction between fluctuating or permanent dipoles of atoms/molecules. The attractive forces between colloidal particles reduced in contrast in a liquid medium. Colloids in liquid may be positively charged, negatively charged or even neutral. But in most cases they are charged. As there are some charges on particles, ions of opposite charges accumulate around them. Oppositely charged ions are known as counter ions. This accumulation of counter ions leads to formation of an electric double layer. Stability of colloids can be increased by steric hinderance or repulsion. By adsorbing some layers of a different material on colloidal particles eg. polymer it is possible to reduce the attractive forces between them.

reactor of suitable size. Glass reactor usually has a provision to introduce some precursors, gases as well as measure temperature, pH etc. during the reaction. It is usually possible to remove the products at suitable time intervals. Reaction is usually carried out under inert atmosphere like argon or nitrogen gas so as to avoid any uncontrolled oxidation of the products. There is also provision made to stir the reactants during the reaction by using Teflon coated magnetic needle.

Although chemical synthesis of nanoparticles is a complex process, by understanding how nucleation and growth of particles takes place, it is possible to control the various steps and try to achieve monodispersed nanoparticles. This can be done with the help of LaMer diagram. As we keep on increasing the concentration of the reactants in the solution, at certain concentration, say C_0 , the formation of nuclei begins. There is no precipitate at this concentration. Further increase in concentration increases nuclei formation up to a concentration C_N , above which there is 'super saturation' between C_N and C_S . Concentration C_N denotes the maximum rate of nuclei formation. When nuclei formation reduces again C_0 the minimum concentration for nucleation is reached. No new nuclei can be formed and crystal growth reduces the concentration. At this concentration C_S , an equilibrium is obtained. If new nuclei are formed during the growth of particles, particle with large size distribution are obtained. Therefore it is very important that concentration of solute and its diffusion to dissolve species be adjusted properly in order that no fresh nuclei are formed once the concentration of solute and its diffusion to dissolve species be adjusted properly. In order that no fresh nuclei are formed once the concentration has reached C_N . Particles can grow even at the expense of smaller particles. Larger particles are more stable and grow at the expense of smaller particles. This growth mode is known as Ostwald ripening. The driving force for large particles is the reduction in surface free energy.

Colloidal metal nanoparticles are often synthesized by reduction of some metal salt or acid. For example highly stable gold particles can be obtained by reducing chloroauric acid (HAuCl_4) with disodium citrate ($\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$). The reaction takes place as follows –

$$\text{HAuCl}_4 + \text{Na}_2\text{C}_6\text{H}_5\text{O}_7 \rightarrow \text{Au} + \text{C}_6\text{H}_5\text{O}_7^- + \text{HCl} + 3\text{NaCl} \rightarrow$$

Au atoms are formed by nucleation and condensation. They grow bigger in size by reduction of more Au ions on the surface. These atoms are stabilized by oppositely charged citrate ions. Metal gold nanoparticles exhibit intense red, magenta etc., colours, depending upon the particle size. Gold nanoparticles are stabilized by repulsive Coulomb interaction. It is also

possible to stabilize gold nanoparticles using thiol or some other capping molecules. In a similar manner, silver, palladium, copper and other metal nanoparticles can be synthesized using appropriate precursors, temperature, pH, duration of synthesis etc., Particle size, size distribution and shape strongly depend on the reaction parameters and can be controlled to achieve desired results. It is also possible to synthesize alloy nanoparticles using appropriate precursors.

Colloidal Semiconductor nanoparticles can be synthesized by wet chemical route using appropriate salts. Sulphide semiconductors like CdS and ZnS can be synthesized easily by what is known as co-precipitation. For example to obtain ZnS nanoparticles any zinc salt like Zinc sulphate (ZnSO₄), zinc chloride (ZnCl₂) can be dissolved in aqueous (or nonaqueous) liquid and Na₂S is added to the solution. Following simple reaction results to give particles of ZnS.



To obtain zinc oxide particles one can use following reactions:



Selenide particles can be obtained using appropriate selenium giving salt. However, all these nanoparticles need to be surface passivated as colloids formed in liquids have a tendency to coagulate or ripen due to attractive forces existing between them. The electrostatic and other repulsive forces may not be sufficient to keep them apart. However, steric hindrance can be created by appropriately coating the particles to keep them apart. This is often known as 'chemical capping' and has become a widely used method in the synthesis of nanoparticles. Advantage with this chemical route is that, one can get stable particles of variety of materials not only in the solution, but even after drying off the liquid. Coatings may be part of post-treatment or a part of the synthesis reactions to obtain nanoparticles. If it is a part of the synthesis reaction, the concentration of capping molecules can be used in two ways, to control the size as well as to protect the particles from coagulation. Chemical capping can be carried out at high or low temperature depending on the reactants. In high temperature reactions, acid organometallic reactants are injected in some solvent like triethylamine and held at temperature

>300 °C.

(b) Langmuir-Blodgett (L-B) method: This technique to transfer organic layers at air-liquid interface onto solid substrates is known for nearly 70 years. The technique was developed by the two scientists Langmuir and Blodgett. In this technique one uses amphiphilic long chain

molecules like that in fatty acids. An amphiphilic molecule has a hydrophilic group (water loving) at one end and a hydrophobic group (water hating) at the other end. As an example consider the molecule of arachidic acid, which has a chemical formula $[\text{CH}_3(\text{CH}_2)_{16}\text{COOH}]$. There are many such long chain organic chains with general chemical formula $[\text{CH}_3(\text{CH}_2)_n\text{COOH}]$, where n is a positive integer. In this case, $-\text{CH}_3$ is hydrophobic and $-\text{COOH}$ is hydrophilic in nature.

Usually molecules with $n > 14$ are candidates to form L-B films. This is necessary in order to keep hydrophobic and hydrophilic ends well separated from each other. When such molecules are put in water, the molecules spread themselves on surface of water in such a way that their hydrophilic ends, often called as heads, are immersed in water, whereas the hydrophobic ends called as tails remain in air. They are also surface active agents or surfactants. Surfactants are amphiphilic molecules i.e. an organic chain molecule in which at one end there is polar, hydrophilic (water loving) and at the other a nonpolar, hydrophobic (water hating) group of atoms. Using a movable barrier, it is possible to compress these molecules to come close together to form a monolayer and align the tails. It is however necessary that hydrophilic and hydrophobic ends are well separated. Such a monolayer is two dimensionally ordered and can be transferred on some suitable solid substrates like glass, silicon etc. This is done by dipping the solid substrate in the liquid, in which ordered organic molecular monolayer is already formed.

Deposition of L-B films is done by following steps: (1) A monolayer of amphiphilic molecules is formed

(2) A substrate is dipped in the liquid (3) The substrate is pulled out, during which ordered molecules get attached to the substrate (4) When the substrate is again dipped, molecules again get deposited as the substrate forming a second layer on the substrate (5) As the substrate is again pulled out a thin layer gets deposited. By repeating the procedure large number of ordered layers can be transferred on a substrate.

In general there are three types of L-B films with different multilayer sequence. These are known as X, Y, and Z type. (1) X-type: Deposition only during insertion of substrate (2) Y-type: Deposition both the times except no deposition during first immersion (3) Z-type: Deposition only during removal of substrate. Y type of films are most common. Although the layers are ordered, there is only the van der Waals interaction between different layers. Thus L-B films are good examples of nanostructured materials.

It is possible to obtain nanoparticles using L-B technique. A metal salt like CdCl_2 or ZnCl_2 is dissolved in water on surface of which a compressed uniform monolayer of

surfactant is spread. When H₂S gas is passed in the solution, CdS or ZnS nanoparticles of few tens of nanometers can be formed. Particles are uniform in size. If surfactants are not present, uniform nanoparticles are not formed.

(c) Sol-Gel Method: As the name implies sol-gel involves two types of materials or components 'sol' and 'gel'. There are several advantages of sol-gel: All sol-gel formation process is usually a low temperature process. This means less energy consumption and less pollution too. Some of the benefits like getting unique materials such as aerogels, zeolites, ordered porous solids by organic-inorganic hybridization are unique to sol-gel process. It is also possible to synthesize nanoparticles, nanorods, nanotubes etc., using sol-gel technique.

Sols are solid particles in a liquid. They are thus a subclass of colloids. Gels are nothing but a continuous network of particles with pores filled with liquid (or polymers containing liquid). A sol-gel process involves formation of 'sols' in a liquid and then connecting the sol particles (or solid network capable of forming a porous network) to form a network. By drying the liquid, it is possible to obtain powders, thin films or even monolithic solid.

Synthesis of sol-gel in general involves hydrolysis of precursors, condensation followed by polycondensation to form particles, gelation and drying process by various routes. Precursors (starting chemicals) are to be chosen so that they have a tendency to form gels. Both alkoxides or metal halides can be used. Alkoxides have a general formula $M(\text{ROH})_n$, where M is a cation, R is alkyl group, and n is the number of (ROH) groups with each cation. Salts are denoted as MX, in which M is a cation and X is an anion. Although it is not mandatory that only oxides be formed by a sol-gel process, often oxide ceramics are best synthesized by a sol-gel route. For example in silica, SiO₄ group with Si at the centre and four oxygen atoms at the vertices of tetrahedron are very ideal for forming sols with interconnectivity through the corners of tetrahedrons, creating some cavities or pores. By polycondensation process (i.e., many hydrolyzed units coming together by removal of some atoms from small molecules like OH) sols are nucleated and ultimately sol-gel is formed. Sol-gel method is particularly useful to synthesize ceramics or metal oxides although sulphides, borides and nitrides also are possible.

(d) Microemulsion: Synthesis of nanoparticles in the cavities produced in microemulsion is a widely used method. Advantage of this method is the biocompatibility and biodegradability of synthesized materials. Biocompatibility is useful in drug delivery of nanomaterials and biodegradability is environmentally useful. Whenever two immiscible liquids are

mechanically agitated or stirred together, they are known to form what is called 'emulsion'. The tendency of the liquids is such that the liquid in smaller quantity tries to form small droplets, coagulated droplets or layers so that they are all separated from the rest of the liquid (for example droplets of fat in milk). The droplet sizes in emulsion are usually larger than 100 nm up to even few millimeters. Emulsions are usually turbid in appearance. On the other hand, there is another class of immiscible liquids, known as microemulsions which are transparent and the droplets are in the range of ~1 to 100 nm. This is size needed for the synthesis of nanomaterials. Microemulsions are stabilized using surfactants (surface stabilized active agents). When an organic liquid or oil (O), water (W) and surfactant (T) are mixed together, under some critical concentration, 'micelles' or inverse micelles are formed, depending upon the concentration of water and organic liquid. Micelles are formed with excess water and inverse micelles are formed in excess of organic liquid or oil. The ratio of water, oil and surfactant is important to decide which type of micelle will be formed and can be represented in a ternary phase diagram, using a triangle. Composition can be determined by drawing lines parallel to all three sides of the triangle. A modified phase diagram known as 'Winsor Diagram' also can be constructed for finer details. The critical micelle concentration (CMC) depends upon all W, O and T concentrations. Effect of T is to reduce the surface tension of water dramatically below CMC and remain constant above it, as the organic solvent concentration is kept on increasing. There are four types of surfactants in general:

Cationic: eg. $\text{C}_{12}\text{H}_{25}\text{N}^+\text{Br}^-$ Anionic: eg. $\text{R-SO}_3^-\text{Na}^+$

Nonionic: $\text{R-(C}_6\text{H}_{11}\text{O)}_2\text{CH}_2\text{-O-H}$

Amphiphilic: eg. betaines.

A large number of nanoparticles of (metals, semiconductors and insulators) cobalt, copper, CuCO_3 , NiSO_4 , CdS , ZnS etc, have been synthesized using microemulsions or inverse micelles. Synthesis of cobalt nanoparticles – A reverse micellar solution of water and oil can be stabilized using a monolayer of surfactant like sodium bis (2-ethylhexyl) sulfosuccinate or Na(AOT) . The droplet diameter is controlled simply by controlling the amount of water. Two micellar solutions having same diameter of droplets can be formed. Thus one solution should have Co(AOT)_2 i.e., cobalt bis (2-ethylhexyl) sulfosuccinate and the other should have sodium tetrahydroborate (NaBH_4). When two solutions are mixed together the solution appears clear but the color changes from pink to black. One can find by electron microscopy analysis that cobalt nanoparticles are formed.

(e) *Other Chemical Methods:* Several types of reducing agents can be used to produce nanoparticles such as NaBEt_3H , LiBEt_3H , and NaBH_4 where Et denotes ethyl ($-\text{C}_2\text{H}_5$) radical. For example, nanoparticles of molybdenum (Mo) can be reduced in toluene solution with NaBEt_3H at room temperature, providing a high yield of Mo nanoparticles having dimensions of ~ 5 nm.

Nanoparticles of aluminum have been made by decomposing $\text{Me}_2\text{EtNAlH}_3$ in toluene and heating the solution to 105°C for 2 h (Me is methyl, $-\text{CH}_3$). Titanium isopropoxide is added to the solution. The titanium acts as a catalyst for the reaction. The choice of catalyst determines the size of the particles produced. For instance, 80 nm particles have been made using titanium. A surfactant such as oleic acid can be added to the solution to coat the particles and prevent aggregation.

Module-IV

Biological methods

Synthesis of nanomaterials using biological ingredients can be roughly divided into following three types:

- use of microorganisms
- use of enzymes or plant extracts
- use of templates like DNA, membranes, viruses

(a) **Synthesis using microorganisms:** Microorganisms are capable of interacting with metals coming in contact with them through their cells and form nanoparticles. Different processes of metal- microorganism interactions are: (i) Some microorganisms produce hydrogen sulfide (H₂S). It can oxidize organic matter forming sulphate, which in turn acts like an electron acceptor for metabolism. This H₂S can, in presence of metal salt, convert metal ions into metal sulphide, which deposits extracellularly. (ii) In some cases, metal ions from a metal salt enter the cell. The metal ions are then converted into a nontoxic form and covered with proteins in order to protect the remainder of cell from toxic environment. (iii) certain microorganisms are capable of secreting some polymeric materials like polysaccharides. They have some phosphate, hydroxyl and carboxyl anionic groups which complex with metal ions and bind extracellularly (iv) cells are also capable of reacting with metals or ions by processes like oxidation, reduction, methylation, demethylation etc.

Examples:

- *Pseudomonas stutzeri* Ag259 bacteria are found in silver mines and are capable of accumulating silver inside or outside of their cells walls. Using this fact these bacterial strains can be employed with high concentration of silver salt like AgNO₃. Numerous silver nanoparticles of different shapes can be produced having size <200 nm intracellularly.
- Low concentrations of metal ions (Au⁺, Ag⁺ etc.) can be converted to metal nanoparticles by *Lactobacillus* strain present in butter milk. By exposing the mixture of two different metal salts to bacteria, it is indeed possible to obtain alloys under certain conditions.
- *Fusarium oxysporum* challenged with gold or silver salt for approximately three days produces gold or silver particles extracellularly. Extremophilic actinomycete *Thiomicrospira* sp. produces gold nanoparticles extracellularly.

- When silver metal salt is treated with fungus *Verticillium* sp. the nanoparticles can be produced intracellularly. Changes in biomass colour from initial yellow to final brown, after exposure to silver salt, is a visual indication of silver nanoparticles formation. Particles can be recovered by washing with some suitable detergent or ultrasonication. In a similar way, gold nanoparticles can be produced using *Verticillium* sp. However, the colour of biomass is from pink to blue depending upon the particle size.
- Semiconductor nanoparticles like CdS, ZnS, PbS etc. can be produced using different microbial routes. *Desulfobacteriaceae* can form 2-5 nm ZnS nanoparticles. Bacteria *Klebsilla pneumoniae* can be used to synthesize CdS nanoparticles. When $\text{Cd}(\text{NO}_3)_2$ is mixed in a solution containing bacteria and solution is shaken for about one day at $\sim 38^\circ\text{C}$, then the CdS nanoparticles in the size range $\sim 5\text{-}200$ nm can be formed. CdS nanoparticles with narrow size distribution can be synthesized using the yeasts like *Candida glabrata* and *Schizosaccharomyces pombe*. Similarly it is possible to synthesize PbS by challenging *Tetrahymena* sp. with lead salt like PbNO_3 .

(b) **Synthesis using plant extracts:** It has been reported that live alfalfa plants are found to produce gold nanoparticles from solids. Leaves from geranium plant (*pelargonium graveolens*) have also been used to synthesize nanoparticles of gold. Nanoparticles obtained using *Colletotrichum* sp. Fungus related to geranium plant has a wide distribution of sizes and particles are mostly spherical. On the other hand, geranium leaves produce rod and disk shaped nanoparticles. Synthesis procedure to obtain gold nanoparticles from geranium plant extract is as follows: Freshly crushed leaves are put in Erlenmeyer flask and boiled in water just for a minute. Cells get ruptured and cells release intracellular material. Solution is cooled and decanted. This solution is added to HAuCl_4 aqueous solution and nanoparticles of gold start forming within a minute.

(c) **Use of templates:** DNA, S-layers or some membranes have long range periodic order in terms of some molecular groups of their constituents. Therefore on some periodic active sites preformed nanoparticles can be anchored. Alternatively, using certain protocols nanoparticles can be synthesized using DNA, membranes etc., as templates. Such ordered arrays are formed as a result of various interactions that take place between the templates and the particles.

Ferritin is a colloidal protein of nanosize. It stores iron in metabolic process and is abundant in animals. It is also capable of forming uniform three dimensional hierarchical

architecture. There are 24 protein (peptides) subunits in a ferritin, which are arranged in such a way that they create a central cavity of ~6nm. Diameter of polypeptide shell is 12 nm. Ferritin can accommodate 4500 Fe atoms. They are in Fe^{3+} state as hydrated iron oxide mineral, ferrihydrite. The protein subunits are composed of light as well as heavy chains having dinuclear ferroxide centres. These centres are catalysts for in vitro oxidation of Fe^{2+} ions. The ferritin without inorganic matter in its cavity is known as apoferritin and can be used to entrap desired nanomaterial inside the protein cage. Therefore, first step is to remove iron from ferritin to form apoferritin and then introduce metal ions to form metal nanoparticles inside the cavity or carry out some controlled reaction with metal ions to make a compound inside the cavity. In any case, ions can be removed or introduced inside the ferritin, through some available channels.

Horse spleen ferritin, diluted with sodium acetate buffer, should be placed in dialysis bag. A solution of sodium acetate and thioglycolic acid is made in which dialysis bag is kept under nitrogen gas flow for 2-3 hours. Solution needs to be replaced from time to time for total 4-5 hours. Further dialysis of apoferritin solution should be done against saline for one hour and in refreshed saline for ~15-20 hours. Apoferritin should then be mixed with solution having sodium chloride (NaCl) and N-tris (hydroxymethyl) methyl-2-aminoethanesulphonic acid (TES). Aqueous cadmium acetate is added to this solution and stirred continuously with constant N_2 gas purging. Process of CdS formation is stepwise with Cd loading of 55 atoms per apoferritin colloid taking place in each step. Higher loading like 110, 165, 220 are possible. Due to remarkably constant size of ferritin colloids and apoferritin derived from them, it is possible to obtain nanoparticles of very uniform size. Besides CdS there are several other examples like controlled iron oxide, manganese, uranyl oxide, cobalt, cobalt-platinum alloy etc., being synthesized inside ferritin. It is possible to fabricate ordered arrays of ferritin as well as of nanoparticles inside them.

DNA can be used for preformed charged nanoparticles can get bonded with phosphate group of DNA and even form organized arrays of nanoparticles. CdS (or other sulfide) nanoparticles can be synthesized using DNA. Organic molecules can cap the surfaces of nanoparticles growing in solutions. Similarly one can use DNA to bind with surface of growing nanoparticles. For example, double stranded Salmon sperm DNA can be sheared to an average size of 500 bp. Cadmium acetate can be added to desired medium like water, dimethylformamide, ethanol, propanol etc., and reaction carried out in a glass flask with facility to purge the solution and flow with an inert gas like nitrogen. Addition of DNA should

cadmium acetate, sodium chloride and DNA nanoparticles of CdS with size less than ~10 nm can be obtained. DNA probably bonds through its negatively charged phosphate group to positively charged (Cd²⁺) nanoparticle surface.



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Department of Chemistry

VALUE ADDED COURSE: Introduction to NanoChemistry

CERTIFICATE

This is to Certify that. Abdul. Raheem Son/Daughter of Shri/Smt Abdul. Yaseen

has Successfully completed value added course in Introduction to NanoChemistry

Conducted by the Department of Chemistry from 02-08-2018 to 31-08-2018 We wish him her bright future


Co-ordinator.


Head of Department


Principal
Principal
Siddhartha Degree College of
Arts & Science VUYYURU-521 165



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SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
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Department of Chemistry

VALUE ADDED COURSE: Introduction to NanoChemistry

CERTIFICATE

This is to Certify that J. Sri. Lekha Son/Daughter of Shri/Smt J. Srinivasa Rao

has Successfully completed value added course in **Introduction to NanoChemistry**

Conducted by the Department of Chemistry from 02-08-2018 to 31-08-2018 We wish him her bright future


Co-ordinator


Head of Department


Principal
Principal
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Siddhartha Degree College of Arts and Science**
Autonomous College :: Aided College of Govt. of AP
NAAC 'A' Grade College
Vuyyuru, Krishna (Dt.), Andhra Pradesh-521165

VALUE ADDED COURSE

TITLE: DIGITAL MARKETING

VAC CODE: COM-DM-02

On 1st OCT 2018 TO 9th NOV 2018

2018-2019

Duration of the Course: 30Hrs

Organized By

Department of Commerce



A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh
(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)
An Autonomous College in the Jurisdiction of Krishna University
Accredited by NAAC with "A" Grade



DEPARTMENT OF COMMERCE

2018-2019

Value Added Course
Title: DIGITAL MARKETING

Name of the Lecturer	:	N.VASANTHA RAO
Class	:	II B.COM
Duration of the Course	:	30 HOURS
VAC Code	:	COM-DM-02

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: DIGITAL MARKETING

Date: From to 01-10-2018 TO 09-11-2018

Date	Content	Module No.
01-10-2018	Unit – I Introduction: Meaning – importance- traditional online marketing vs digital marketing – online market place analysis Micro Environment- online Macro environment- trends in digital marketing- competitive analysis.	I
11-10-2018	Unit – II Website planning and creation; Website meaning- objectives-components of website- website creation- incorporation of design and – adding content- installing and activating plugging.	II
27-10-2018	Unit- III Email marketing: Meaning – Evolution of Email- importance of email marketing- Development and Advancements in email marketing-email marketing platforms.	III

Value Added Course

Title: DIGITAL MARKETING

Objectives :

1. Digital marketing: One of the primary objectives of digital marketing is to enhance brand visibility and make the target audience aware of the company, its products, and its value proposition.
2. Website planning and creation: Digital marketing can focus on generating leads by attracting potential customers and collecting their contact information through various channels like website forms, landing pages, or social media campaigns.
3. Email marketing: Increasing the number of visitors to a website is often a goal of digital marketing. Digital marketing efforts can aim to attract relevant traffic through search engine optimization (SEO), content marketing, social media marketing, Email marketing, paid advertising, and other strategies.

Methodology :Teacher-Centred method

Duration : 30 Hours

AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU

(AUTONOMOUS)

(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION

VIJAYAWADA)

Commerce	COMOB 03	2021-2022	II.B.Com(Gen.com.)
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SEMESTER -III

Digital Marketing

Value added Course

DURATION: 2 HOURS

SECTION - A

Max Marks :50

ANSWER ANY FIVE OF THE FOLLOWING QUESTIONS

(5X10=50M)

1. What are the advantages and disadvantages of digital marketing?
2. Explain latest trends in digital marketing.
3. Explain the SWOT Analysis?
4. Explain the impact of micro and macro environment factors on marketing?
5. What is SEO & why is it important?
6. History and growth of search engine optimization?
7. Explain the objectives of social media marketing?
8. Explain the various types of social media marketing?
9. Explain different types of social media platforms?
10. What is guest blogging?

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Vuyyuru-521165, Krishna District, Andhra Pradesh

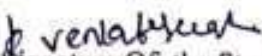
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Value Added Course

Title: DIGITAL MARKETING

Feed Back Form

1. Is the programme interested to you (Yes/No)
2. Have you attended all the session (Yes/No)
3. Is the content of the program is adequate (Yes/No)
4. Have the teacher covered the entire syllabus? (Yes/No)
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the Number of weeks designed for the program? (Yes/No)
7. On the whole, is the program useful in terms of enriching Your knowledge? (Yes/No)
8. Do you have any suggestions on the program? (Yes/No)


Signature Of the Student

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Value Added Course

Title: DIGITAL MARKETING

Feed Back Form

1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
4. Have the teacher covered the entire syllabus? (Yes/No) ✓
5. Is the number of hours adequate? (Yes/No) ✓
6. Do you have any suggestions for enhancing or reducing the
Number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching
Your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

S. Neeraj
Signature Of the Student

Roll No.	Name of the Student	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
830	B. Suma latha		P	A	P	P	F	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
31	B. Sasirekha		P	P	A	A	A	A	P	A	A	P	P	P	P	P	P	P	P	P	P	P
32	K. Bathima		P	P	P	P	P	P	A	P	F	P	P	P	P	P	P	P	P	P	P	P
33	Y. satya Siva Santar		P	P	A	P	P	A	A	A	A	P	A	P	P	P	P	P	P	P	P	P
34	M. Sanjay		A	A	P	P	P	A	A	P	P	P	P	A	P	P	P	P	P	P	P	P
35	M. Prem kumar		A	P	A	P	A	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P
36	G. Sai Kiran		A	A	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P
37	B. Durga Bhavani		P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
38	T. Lavaniya		P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
39	G. Gopi		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
40	M. Sivani		A	A	P	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P
41	M. Chintiah		P	A	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
42	P. Naga Naveen		A	A	A	A	A	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P
43	B. Trivenika		P	P	P	A	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
44	Fathima Zahera		P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
45	R. Gopi Venkata Ram		P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
46	Y.T. G. Satyanarayana																					
47	B. Rakesh		A	A	A	P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P
48	O. Bhavani		A	A	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
49	V. Kranthi Kiran		P	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P
50	K. Seetharamaiah		P	A	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P
51	K. Praveen Kumar		P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
52	V. Yamini		A	A	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
53	P. Bhavya		A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
54	K. Yamini		P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
55	D. Bhavaneswari		P	A	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
56	P. Romiya		A	A	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P
57	Shaik Abdul Rahim		P	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
58	C. Lakshmi Sudha		A	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Title of the Paper: Digital Marketing

Roll No.	Name of the Student	Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
30	P. A. R.		P	A	P	P	P	A	P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
31	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
32	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	41					82%
33	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
34	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
35	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
36	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
37	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
38	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	40					80%
39	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
40	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	40					80%
41	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	45					76%
42	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	42					82%
43	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
44	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	42					84%
45	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
46	Blank																															
47	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	40					80%
48	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
49	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
50	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
51	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
52	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
53	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	40					80%
54	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
55	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
56	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	35					76%
57	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	40					80%
58	P. P. P.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	40					80%

Class : B Com (G)

Course Code : COM 0102

Roll No.	Name of the Student	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			3	4	5	6	8	9	10	11	12	13	15	16	18	20	
130	G. Govatham Vijay		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
131	S. Tindaja		a	P	P	P	P	P	a	P	P	a	P	P	P	P	P
132	k. Kanja		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
133	P. Babalichan		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
134	K. Rasi		P	P	a	P	P	P	a	P	P	a	P	P	P	P	P
135	D. Varasi		a	a	P	P	P	a	P	P	a	P	P	P	P	P	P
136	sheik peer Ahmed		a	a	P	P	P	a	P	P	a	P	P	P	P	P	P
137	k. praveen		P	P	P	P	P	a	P	P	a	P	P	P	P	P	P
138	M siva prabhathi		P	P	P	a	a	P	P	P	a	a	P	P	P	P	P
139	ch. Ganesh		P	P	a	a	P	P	P	P	a	a	P	P	P	P	P
140	B. Sai Kiran		P	P	P	a	a	P	P	P	a	a	P	P	P	P	P
141	V.V. subramanyeswarar An		a	a	a	a	P	P	P	P	P	a	a	P	P	P	P
142	K. Gopi		a	P	P	P	P	P	P	P	a	P	P	P	P	P	P
143	G. Johnson Kumar		a	P	P	P	P	P	P	P	P	a	P	P	P	P	P
144	V. Neeraja		P	P	P	a	P	P	P	P	P	a	P	P	P	P	P
145	G. Varun Kumar		a	P	P	P	a	P	P	P	P	P	P	P	P	P	P
146	P. Sai Sandeep		P	P	P	P	P	P	P	P	a	P	P	P	P	P	P
147	D. Dinakar		P	P	P	P	a	P	P	P	a	a	P	P	P	P	P
148	K. praveen		P	P	P	P	a	a	P	P	P	P	a	a	P	P	P
149	M. jyothi		P	P	P	P	P	a	P	P	P	P	a	a	P	P	P
150	m. Rangit Kumar		P	P	P	a	P	P	P	P	P	P	P	P	P	P	P
151	E. Pravin Kumar		P	P	P	a	a	P	P	P	P	a	P	P	P	P	P
152	P. Naga jyothi		P	a	P	P	P	a	P	P	P	P	a	P	P	P	P
153	T. Dhyan Lakshmi		P	P	P	P	P	a	a	P	P	P	P	P	P	P	P
154	T. scathi		P	P	P	P	a	a	P	P	P	P	P	P	P	P	P
155	D. Bharu prasad		P	P	P	P	a	a	P	P	P	P	P	P	P	P	P
156	T. Sasi Kumar		P	P	P	P	a	P	P	P	P	P	P	P	P	P	P
157	T. Naga Anusha		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
158	P. Anuritha		a	P	P	P	P	a	P	P	P	P	P	P	P	P	P

Title of the Paper : Digital Marketing (Value Added Course)

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
22	23	24	25	26	27	29	30	1	2	3	5	6	8	9									M					P	
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**ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)**



Department Commerce

VALUE ADDED COURSE: DIGITAL MARKETING

CERTIFICATE

This is to Certify that*Gr. Gopi*.....of*II B.com*..... has successfully completed Value Added Course in **DIGITAL MARKETING** organised by the Department of Commerce during the Year 2018-2019 and passed the Examination in grade....*'A'*.....

N. Venkatesh
Co-ordinator

K. Venkatesh
Head of Department

D. Sankar
Principal
Adusumilli Gopalakrishnaiah & Sugarcane Growers
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Department Commerce

VALUE ADDED COURSE: DIGITAL MARKETING

CERTIFICATE

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**Adusumilli Gopalakrishnaiah & Sugarcane Growers
Siddhartha Degree College of Arts and Science**
Autonomous College :: Aided College of Govt. of AP

NAAC 'A' Grade College
Vuyyuru, Krishna (Dt.), Andhra Pradesh-521165

VALUE ADDED COURSE

TITLE: MANAGERIAL ECONOMICS

VAC CODE: ECO-ME-02

On 16th Nov, 2019 TO 30th Dec 2019

Duration of the Course: 30 Days

Organized By

Department of ECONOMICS



A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF ECONOMICS

2018-2019

Value Added Course

Title: **MANAGERIAL ECONOMICS**

Name of the Lecturer	:	NAGADESI RAMARAO
Class	:	II B.SC.
Duration of the Course	:	30 HOURS
VAC Code	:	ECO-ME-02

3

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: MANAGERIAL ECONOMICS

Objectives : 1)Improving the quality of life of the rural population.

2)To improve the infrastructure of the rural areas.

3)To reduce unemployment by providing opportunities for employment.

4)To provide clean water, education facilities, electricity and proper communication.

Methodology : Teacher - Centered method

Duration : 30 Hours

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course Student Enrolment Sheet

Class: II B.A.C

S. No	Roll No.	Name of the Student	Signature
1	17-401	P. Bhargavi	P. Bhargavi
2	402	B. Ramadevi	B. Ramadevi
3	403	M. Aparna	M. Aparna
4	404	Ab. Fathima	Ab. Fathima
5	405	K. Naga Sudha	K. Naga Sudha
6	406	K. Ramya	K. Ramya.
7	407	K. Anusha	K. Anusha
8	408	P. Rajya Lakshmi	P. Rajya Lakshmi
9	409	M. Chandravardhan	M. Chandravardhan
10	410	M. Naseema	MD. Naseema
11	411	K. Anitha	K. Anitha.
12	412	S. B. Durga Bhavani	S. B. Durga Bhavani
13	413	V. Nagamani	V. Nagamani
14	416	P. K. S. Subasini	P. K. S. Subasini
15	417	G. Sai Kumar	G. Sai Kumar

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S. Sulekhi
PRINCIPAL
AG & SG Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru

Value Added Course

Title: MANAGERIAL ECONOMICS

Date From 16-11-2018 TO 30-12-2018

Date	Content	Module No.
16/11/18 to 29/11/18	Introduction to Managerial Economics: <ul style="list-style-type: none">• Definition, nature, and scope of managerial economics.• Role and importance of managerial economics in decision-making.• Basic economic concepts and principles.	I
29/11/18 to 5/12/18	Demand Analysis and Forecasting: <ul style="list-style-type: none">• Demand theory and determinants of demand.• Demand elasticity and its applications.• Demand forecasting techniques and methods.• Factors influencing demand forecasting.	II
6/12/18 to 18/12/18	Production and Cost Analysis: <ul style="list-style-type: none">• Production theory and production functions.• Short-run and long-run production decisions.• Cost concepts, types, and cost-output relationships.• Economies of scale and scope.	III
19/12/18 to 30/12/18	Market Structure and Pricing: <ul style="list-style-type: none">• Market structures: perfect competition, monopoly, monopolistic competition, oligopoly.• Pricing strategies and techniques.• Pricing under different market structures.• Price discrimination and pricing in practice.	IV

1. Introduction to Managerial Economics

- **Definition and scope of managerial economics**
- **Role of managerial economics in decision-making**
- **Basic economic concepts and principles**

2. Demand Analysis and Estimation

- **Law of demand and its applications**
- **Elasticity of demand and its importance in decision-making**
- **Demand forecasting techniques**

3. Supply Analysis and Production Decisions

- **Law of supply and its applications**
- **Cost concepts and production functions**
- **Short-run and long-run production decisions**

4. Market Structures and Pricing Strategies

- **Perfect competition, monopolistic competition, oligopoly, and monopoly**
- **Pricing strategies under different market structures**
- **Price discrimination and its implications**

5. Theory of the Firm and Profit Maximization

- **Objective of the firm: profit maximization and other goals**
- **Marginal analysis and profit optimization**
- **Constraints on profit maximization (e.g., resource limitations)**

6. Market Failure and Government Intervention

- Externalities and public goods
- Government policies to correct market failures
- Impact of regulations on business decisions

7. Risk and Uncertainty in Decision-Making

- Decision-making under risk and uncertainty
- Decision criteria (e.g., expected utility, risk aversion)
- Risk management and insurance

8. Capital Budgeting and Investment Decisions

- Time value of money and discounted cash flow analysis
- Capital budgeting techniques (e.g., NPV, IRR, payback period)
- Investment decisions and risk assessment

9. Pricing and Output Decisions in the Short Run and Long Run

- Short-run and long-run profit maximization
- Shut-down and break-even analysis
- Capacity planning and output decisions

10. Game Theory and Strategic Decision-Making

- Introduction to game theory
- Oligopolistic competition and strategic interactions
- Nash equilibrium and decision-making in strategic environments

11. Managerial Economics and Global Markets

- International trade and comparative advantage

- Exchange rates and their impact on business decisions
- Global market entry strategies

12. Business Strategy and Managerial Economics

- Integration of managerial economics with business strategy
- Decision-making in competitive and dynamic markets
- Case studies and real-world applications

UNIT -1

1. Managerial Economics Definition:

- Managerial economics is the application of economic principles and concepts to solve managerial decision-making problems. It helps managers make informed choices that optimize the use of limited resources in achieving organizational goals.

2. Economic Principles and Business Decisions:

- Managerial economics draws from microeconomics and macroeconomics to analyze and address business-related issues.
- Microeconomics focuses on individual firm and consumer behavior, while macroeconomics examines the broader economic environment.

3. Scarcity and Resource Allocation:

- Scarcity is a fundamental concept in managerial economics, highlighting the limited availability of resources (such as capital, labor, and time) relative to unlimited wants and needs.
- Managers must make choices about how to allocate these scarce resources to maximize value and profitability.

4. Key Concepts in Managerial Economics:

- **Opportunity Cost:** The cost of forgoing the next best alternative when making a decision.
- **Marginal Analysis:** Evaluating the incremental costs and benefits associated with a decision.
- **Incremental Decision-Making:** Managers should make decisions based on changes from the current situation.
- **Sunk Costs:** Costs that cannot be recovered and should not influence future decisions.
- **Elasticity:** A measure of how responsive demand or supply is to changes in price or other factors.

5. Goals of Managerial Economics:

- **Profit Maximization:** Traditionally, businesses seek to maximize profits, which means earning more revenue than incurring costs.
- **Wealth Maximization:** Some firms focus on maximizing shareholder wealth, which considers the time value of money and risk.
- **Sales Growth:** In some cases, firms prioritize expanding their market share and sales revenue.

6. Managerial Decision Areas:

- **Production and Cost Analysis:** Managers assess production processes and costs to optimize efficiency.

- **Pricing Strategy:** Setting prices that maximize revenue and profit while considering demand elasticity.
- **Market Structure Analysis:** Understanding the level of competition in the market, which influences pricing and strategy.
- **Demand Forecasting:** Estimating future demand for products or services to guide production and inventory decisions.
- **Capital Budgeting:** Evaluating investment projects to determine their financial viability.
- **Risk Analysis:** Assessing and managing risks associated with business decisions.
- **Government Regulations:** Considering legal and regulatory constraints in decision-making.

7. Role of Data and Information:

- Data analysis and information gathering are crucial in managerial economics to make well-informed decisions.
- Data analytics, market research, and financial analysis help managers understand market dynamics and consumer behavior.

8. Decision-Making Models:

- Managerial economics employs various decision-making models, including cost-volume-profit analysis, break-even analysis, and game theory.

9. Ethical Considerations:

- Managers must make ethical decisions that align with the values and principles of their organizations and society at large.

10. Continuous Learning:

- Managerial economics is a dynamic field, and managers must continuously adapt their strategies and decisions to changing market conditions, economic trends, and consumer preferences.

Managerial economics plays a vital role in guiding business decisions, ensuring efficient resource allocation, and achieving organizational objectives in a competitive and dynamic business environment.

UNIT-2

Demand Analysis:

1. **Definition of Demand:** Demand refers to the quantity of a product or service that consumers are willing and able to purchase at various price levels and during a specific period.
2. **Factors Influencing Demand:**
 - Price: As price increases, demand generally decreases, and vice versa (law of demand).
 - Income: An increase in consumer income often leads to increased demand for most goods (normal goods), while some goods may be considered inferior.
 - Tastes and Preferences: Consumer preferences and trends play a significant role in shaping demand.
 - Population: An increase in population can lead to increased demand for various goods and services.
 - Substitutes and Complements: Availability and prices of substitute and complementary goods affect demand.
3. **Elasticity of Demand:** Elasticity measures how sensitive demand is to changes in price. It's calculated as the percentage change in quantity demanded divided by the percentage change in price.
 - Elastic Demand: When elasticity is greater than 1, demand is elastic. Price changes have a proportionally larger impact on quantity demanded.
 - Inelastic Demand: When elasticity is less than 1, demand is inelastic. Price changes have a proportionally smaller impact on quantity demanded.

Demand Forecasting:

1. **Definition of Demand Forecasting:** Demand forecasting is the process of estimating future customer demand for a product or service. It involves analyzing historical data and using various techniques to make predictions.
2. **Methods of Demand Forecasting:**
 - Time Series Analysis: This method involves studying historical data to identify patterns and trends.
 - Market Research: Surveys, focus groups, and consumer interviews can provide valuable insights into future demand.
 - Regression Analysis: This statistical technique uses the relationship between variables like price, income, and demand to make forecasts.

- Delphi Method: Involves collecting expert opinions and making forecasts based on their insights.
- Simulation and Modeling: Complex models and simulations can be used to predict demand under various scenarios.

3. **Challenges in Demand Forecasting:**

- Uncertainty: Future events and market conditions are uncertain, making accurate forecasts challenging.
- Data Quality: Inaccurate or incomplete data can lead to unreliable forecasts.
- Seasonality: Some products have seasonal demand patterns that must be accounted for.
- External Factors: Economic, political, and environmental factors can impact demand unpredictably.

4. **Importance of Accurate Forecasting:**

- Efficient Resource Allocation: Helps in optimizing production, inventory management, and resource allocation.
- Pricing Strategy: Enables setting competitive and profitable prices.
- Customer Satisfaction: Ensures products are available when and where customers need them.
- Risk Management: Reduces the risk of overproduction or underproduction.

5. **Continuous Improvement:** Demand forecasting is an ongoing process that should be regularly reviewed and adjusted to account for changing market conditions and new data.

In conclusion, demand analysis and forecasting are essential tools for businesses to make informed decisions and adapt to market dynamics. Accurate forecasting can help organizations thrive in a competitive marketplace while minimizing risks and maximizing profitability.

UNIT-3

Production and cost analysis are fundamental concepts in economics and business management. They play a crucial role in decision-making, pricing strategies, and overall operational efficiency. Here are some important notes on production and cost analysis:

Production Analysis:

1. **Production Function:** The production function represents the relationship between inputs (factors of production) and outputs (goods or services produced). It shows how different combinations of inputs can produce varying levels of output.
2. **Factors of Production:** There are typically three primary factors of production:
 - **Labor:** The human effort and skills involved in production.
 - **Capital:** The physical and financial assets used in production, such as machinery and equipment.
 - **Land/Natural Resources:** The physical resources like land, minerals, and raw materials required for production.
3. **Short-Run vs. Long-Run Production:** In the short run, at least one input is fixed (usually capital), while in the long run, all inputs are variable. Firms can make different production decisions in these two timeframes.
4. **Production Costs:** Costs incurred in the production process include:
 - **Fixed Costs (FC):** Costs that do not change with the level of production (e.g., rent, salaries).
 - **Variable Costs (VC):** Costs that vary with the level of production (e.g., raw materials, labor).
 - **Total Costs (TC):** The sum of fixed and variable costs ($TC = FC + VC$).
 - **Average Total Cost (ATC or AC):** Total cost per unit of output ($ATC = TC / \text{Quantity}$).
 - **Marginal Cost (MC):** The cost of producing one additional unit of output.
5. **Production Optimization:** Firms aim to produce at the level where marginal cost equals marginal revenue ($MC = MR$) to maximize profit. This is known as the profit-maximizing level of production.

Cost Analysis:

1. **Types of Costs:**
 - **Explicit Costs:** Direct, out-of-pocket expenses incurred in production.
 - **Implicit Costs:** Opportunity costs associated with using resources for a particular activity (e.g., the owner's salary when running their own business).

2. **Total Cost (TC):** The sum of explicit and implicit costs.
 - $TC = \text{Explicit Costs} + \text{Implicit Costs}$
3. **Average Cost (AC):** Total cost per unit of output.
 - $AC = TC / \text{Quantity}$
4. **Marginal Cost (MC):** The additional cost incurred by producing one more unit.
 - $MC = \Delta TC / \Delta \text{Quantity}$
5. **Economies of Scale:** Occurs when increasing production leads to lower per-unit costs. This is often observed in large-scale production.
6. **Diseconomies of Scale:** Occurs when increasing production results in higher per-unit costs, often due to inefficiencies in large organizations.
7. **Cost Curves:**
 - **Average Total Cost Curve (ATC or AC Curve):** U-shaped, with a minimum point indicating the optimal level of production.
 - **Marginal Cost Curve (MC Curve):** Typically intersects the ATC curve at its lowest point.

Key Takeaways:

- Production analysis helps firms understand how to produce goods efficiently.
- Cost analysis helps firms make pricing decisions and manage their resources effectively.
- Firms aim to produce where MC equals MR for profit maximization.
- Cost curves, including ATC and MC, provide insights into cost behavior at different levels of production.

These concepts are essential for businesses to make informed decisions regarding production levels, pricing strategies, and resource allocation, ultimately contributing to their profitability and sustainability in the marketplace.

UNIT-4

Market structure and pricing are interconnected concepts in economics that influence how firms operate and make pricing decisions in various market environments. Different market structures have distinct characteristics that affect pricing strategies. Here are some key notes on market structure and pricing:

Market Structures:

1. **Perfect Competition:**
 - Many small firms sell identical products.
 - Easy entry and exit of firms from the market.

- No individual firm has control over price (price taker).
- Firms in perfect competition typically charge the market price.

2. **Monopoly:**

- A single firm dominates the market and is the sole seller of a unique product.
- High barriers to entry, such as patents or economies of scale.
- The monopolist has significant control over pricing (price maker).
- Monopolists often charge higher prices and produce less output than in competitive markets.

3. **Monopolistic Competition:**

- Many firms offer similar but differentiated products.
- Relatively easy entry and exit.
- Firms have some control over pricing due to product differentiation.
- Pricing may be influenced by advertising and branding efforts.

4. **Oligopoly:**

- A few large firms dominate the market.
- High barriers to entry.
- Firms are interdependent and consider competitors' reactions when setting prices.
- Pricing strategies may include collusion (price-fixing) or non-price competition (product differentiation).

Pricing Strategies:

1. **Price Discrimination:**

- Occurs when a firm charges different prices to different customer groups for the same product or service.
- Common in industries like airlines, where prices vary based on factors like demand and booking time.

2. **Cost-Plus Pricing:**

- Setting prices by adding a markup to the production cost.
- May not consider market demand and competitive factors adequately.

3. **Skimming Pricing:**

- Setting an initially high price for a new product and gradually lowering it over time.
- Used to capture maximum profit from early adopters before expanding to a broader market.

4. **Penetration Pricing:**

- Setting a low initial price for a new product to gain market share quickly.
- The goal is to attract a large customer base and increase prices later.

5. **Dynamic Pricing:**

- Adjusting prices in real-time based on changing market conditions, demand, and other factors.
- Common in e-commerce and industries with fluctuating demand.

6. **Predatory Pricing:**

- Deliberately setting prices below cost to drive competitors out of the market.
- Often illegal in many jurisdictions due to antitrust concerns.

Factors Influencing Pricing:

1. **Market Demand:** Understanding consumer preferences, elasticity of demand, and pricing sensitivity is crucial.
2. **Cost Structure:** A firm's cost of production, including fixed and variable costs, affects pricing decisions.
3. **Competition:** The behavior and strategies of competitors influence a firm's pricing choices.
4. **Regulation:** Industries like utilities or healthcare may face price regulations imposed by governments.
5. **Economic Conditions:** Economic factors such as inflation and recession can impact pricing strategies.
6. **Brand Image and Quality:** Premium brands can command higher prices based on perceived quality.

In summary, market structure and pricing strategies are intertwined. Firms consider market conditions, competition, and their own cost structures when determining how to set prices. The specific market structure in which a firm operates also plays a significant role in shaping its pricing strategy, as each structure presents unique challenges and opportunities for pricing decisions.

Value Added Course
Title: MANAGERIAL ECONOMICS

17-4-03

M. Aparna

15
20

Test Exercise:

Question 1: ABC Manufacturing Company is considering introducing a new product to the market. The company estimates that the fixed costs for production will be \$100,000. The variable cost per unit is expected to be \$10, and the selling price per unit is projected to be \$30. Calculate the break-even point in terms of the number of units the company needs to sell to cover its costs.

Ans: High

Question 2: A company is analyzing the demand for its product. The price elasticity of demand is estimated to be -1.5. If the company currently sells 10,000 units at a price of \$20, how many units can it expect to sell if it reduces the price to \$15?

Ans: Banking

Question 3: A company is analyzing two investment projects. Project A has an initial investment of \$50,000 and is expected to generate cash flows of \$20,000 per year for the next five years. Project B has an initial investment of \$80,000 and is expected to generate cash flows of \$25,000 per year for the next six years. Calculate the net present value (NPV) of each project assuming a discount rate of 10%. Which project should the company choose based on NPV?

Ans: NPV

4. The Insolvency and Bankruptcy Board of India (IBBI) was established in the year -

Ans: 2014

5. Which one of the following central features is not associated with Capitalist Economy?

Ans: Economic organization

6. India is still a young country as the median age of its population is -

Ans: 5-10 years

7. Which one of the following forms of money supply is considered the most widely used in the Indian monetary system?

Ans: M1

8. Which one of the following statements about a borrower from a Microfinance Company is not correct?

Ans: The borrower should not refuse to offer a collateral

M. Aparna

K. Anisha

N. Rangana
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Value Added Course
Title: MANAGERIAL ECONOMICS

Key:

1.High

2.Banking

3.NPV

4.2016

5.Economic Organisation

6.25-30 years

7.MI

8. The borrower should not refuse to offer a collateral

Department of Economics

Value Added Course
Title: MANAGERIAL ECONOMICS

Marks List

Class: II B.Sc.

S. No	Roll No.	Name of the Student	Marks
1	17-401	P. Bhargavi	18
2	402	B. Ramadevi	14
3	403	M. Aparna	15
4	404	Ab. Fathima	20
5	405	K. Naga Sudha	18
6	406	K. Ramya	20
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14	416	P.K.S. Subasini	10
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Department of Economics

Value Added Course
Title: MANAGERIAL ECONOMICS

Title: _____

Feed Back Form

M. Aparna

1. Is the programme interested to you ✓
(Yes/No)
2. Have you attended all the session ✓
(Yes/No)
3. Is the content of the program is adequate ✓
(Yes/No)
4. Have the teacher covered the entire syllabus? ✓
(Yes/No)
5. Is the number of hours adequate? ✓
(Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? ✓
(Yes/No)
7. On the whole, is the program useful in terms of enriching your knowledge? ✓
(Yes/No)
8. Do you have any suggestions on the program? ✓
(Yes/No)

M. Aparna IBSC.

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section: IV B SC

Year : 2018-19

Department of: Economics

Paper: MANAGERIAL ECONOMICS

Lecturer: N. RAMA RAO

Sl. No	Roll No	Student Name	Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1	17-401	P. Bhargami	B.C.B	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	14
2	402	B. Ramadevi	B.C.A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
3	403	M. Aparna	S.C.	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
4	404	Ab. Fathima	B.C.E	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	14
5	405	K. Naga Sudha	S.C.	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
6	406	K. Ramya	B.C.B	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	14
7	407	K. Anusha	B.C.D	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
8	408	P. Rajyalakshmi	S.C.	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14
9	409	M. chandravardhan	B.C.A	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	14
10	4	MD. Naseema	B.C.E	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
11	411	K. Anitha	S.C.	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	14
12	412	S.B. Duriga Bhavani	B.C.D	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	14
13	413	V. Nagambini	S.C.	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	14
14	41	P.K.S. Subasini	B.C.D	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
15	417	G. Sai kumari	B.C.D	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14

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Value Added Course / Certificate Course - Attendance Register

Class / Section: II B-5 Year : 2018-19 Department of: Economics Paper: ECONOMICS Lecturer: N. RAMA RAO

Sl. No	Roll No	Student Name	Category	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	17-401	P. Bhargavi	B.C.A.	P	P	P	P	P	A	.	P	P	P	P	P	P	P	P	14
2	402	B. Ramadevi	B.C.A.	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	14
3	403	M. Aparna	S.C.	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	14
4	404	Ab. Fathima	B.L.E	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
5	405	K. Naga Sudha	S.C.	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	14
6	406	K. Ramya	B.L.B	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14
7	407	K. Anusha	B.L.D.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
8	408	P. Rajya Lakshmi	S.C.	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	14
9	409	M. Chandravasidhan	B.L.A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
10	410	M.D. Naseema	B.L.E	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	14
11	411	K. Anitha	S.C.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
12	412	S. B. Duriga Bhavani	B.L.D.	P	P	P	A	P	P	P	P	P	P	P	P	P	A	P	14
13	413	V. Nagamahi	S.C.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	14
14	416	P. K. S. Subasini	B.L.D.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
15	417	G. Sai Kumari	B.L.D.	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14

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SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P**
(Accredited at "A" level by NAAC, Bengaluru)



Department of Economics

VALUE ADDED COURSE: MANAGERIAL ECONOMICS

CERTIFICATE

This is to Certify that. **M. APARNA** Son/Daughter of Shri/Smt **M. SUBBARAO**

has Successfully completed value added course in **MANAGERIAL ECONOMICS**
Conducted by the Department of Economics from 16-11-2018 to 30-12-2018 We wish him her bright future

N. Ramanao
Co-ordinator

N. Ramanao
Head of Department

D. Saleem

Principal
PRINCIPAL

A.G. & S.G. Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru



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Autonomous College :: Aided College of Govt. of AP
NAAC 'A' Grade College
Vuyyuru, Krishna (Dt).,Andhra Pradesh-521165

CERTIFICATE COURSE

TITLE: Journalism

CC CODE: JOU002

On 14-11-2018 to 30-12-2018

Duration of the Course: 30DAYS

Organized By

Department of Telugu



A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF Telugu

Certificate Course

Title: Journalism

2018-2019.

Name of the Lecturer : M. U.S. Kumari

Class : II B.A/B.Com/B.Sc

Duration of the Course : 30 days

VAC Code : JOU002

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyuru-521165, Krishna District, Andhra Pradesh

CERTIFICATE COURSE

Title: Journalism

Date From: 14-11-2018 to 30-12-2018

Content	Module No.
Journalism: Meaning, Definition, Nature, Scope	I
Principles and significance, Functions of Journalism, kinds of journalism	II
History of Indian Journalism: JA Hickey, Raja Rammohum Roy, M.K. Gandhi.	III
Magazine Journalism, Scope, trends and challenges.	IV

Module - I

Journalism Meaning:

Journalism refers to the profession or activity of collecting, verifying, synthesizing, and presenting information and news to the public through various media platforms, such as newspapers, magazines, television, radio, websites, and social media. It involves the process of researching, investigating, and reporting on current events, issues, and topics of interest to inform, educate, and engage the audience.

Journalists play a crucial role in society by providing accurate and timely information, holding governments, institutions, and individuals accountable, and facilitating public discourse and understanding. Ethical journalism involves adhering to principles such as objectivity, accuracy, fairness, and transparency while reporting and presenting information.

Journalists use various forms of media, including written articles, photographs, videos, podcasts, and more, to convey news and stories. They often work under tight deadlines and in diverse environments, covering a wide range of subjects such as politics, economics, science, culture, sports, and human interest stories.

Overall, journalism plays a vital role in shaping public opinion, fostering an informed citizenry, and contributing to the democratic process by providing the information needed for people to make informed decisions and engage in meaningful discussions about the world around them.

Journalism Definition

Journalism is the profession or practice of gathering, verifying, and presenting information, news, and stories to the public through various media outlets, such as newspapers, magazines, television, radio, and digital platforms. It involves the collection of facts, data, and firsthand accounts to create informative and engaging content that informs, educates, and engages the audience about current events, issues, and topics of interest. Journalists play a critical role in providing accurate and timely information, promoting transparency, and facilitating public discourse. Ethical journalism adheres to principles of accuracy, fairness, objectivity, and integrity in the process of reporting and sharing information.

Journalism Nature

The nature of journalism encompasses various aspects that define the profession and its role in society. Here are some key dimensions of journalism's nature:

Information Gathering: Journalism involves the collection of facts, data, and information from multiple sources, including interviews, research, and investigations. Journalists seek to gather accurate and relevant information to present a comprehensive and unbiased view of events and issues.

Verification and Accuracy: Journalists are responsible for verifying the information they gather to ensure its accuracy and credibility. This process helps maintain the trust of the audience and prevents the spread of misinformation.

Objectivity and Fairness: While complete objectivity may be challenging, journalists strive to present information fairly and impartially, allowing readers or viewers to form their own opinions based on the facts presented.

Public Service: Journalism serves as a public service by informing the public about important events, issues, and developments that impact society. It helps citizens stay informed, make informed decisions, and participate in democratic processes.

Accountability and Watchdog Role: Journalism acts as a check on power and authority by holding governments, institutions, and individuals accountable for their actions. Investigative journalism often uncovers wrongdoing, corruption, and injustices.

Journalism Scope

The scope of journalism is broad and encompasses a wide range of activities, roles, and platforms. It plays a crucial role in informing the public, fostering accountability, and facilitating public discourse. The scope of journalism includes:

News Reporting: Journalists gather, verify, and report on current events, breaking news, and developments across various fields such as politics, economics, science, technology, health, culture, sports, and more.

Investigative Journalism: Investigative journalists delve deeply into issues to uncover hidden truths, expose corruption, and hold powerful individuals or institutions accountable for their actions.

Feature Writing: Feature articles go beyond the news to provide in-depth analysis, human-interest stories, profiles, and cultural explorations. These pieces offer a broader perspective on topics of interest.

Opinion and Editorial Writing: Opinion pieces provide commentary, analysis, and personal perspectives on current events and issues. Editorials express the viewpoint of the publication on specific matters.

Photojournalism: Photojournalists capture powerful images that convey news, emotions, and stories visually. Their work enhances and complements written journalism.

Broadcast Journalism: Broadcast journalists work in television and radio, delivering news through visual and audio formats. This includes news anchors, reporters, and producers.

Digital Journalism: With the rise of the internet, journalists work on online platforms, including news websites, blogs, podcasts, and social media, to reach a global audience.

Data Journalism: Journalists use data analysis and visualization techniques to uncover patterns, trends, and insights within large datasets, providing context and understanding to complex issues.

Multimedia Journalism: This involves combining various media formats, such as text, images, videos, and interactive elements, to create rich and engaging storytelling experiences.

Environmental Journalism: Focuses on reporting environmental issues, conservation efforts, climate change, and the impact of human activities on the planet.

Module – II

Principles of Journalism

Accuracy: Journalists strive to provide accurate and factual information. They must verify their sources, cross-check information, and correct errors promptly to maintain the credibility and trust of their audience.

Objectivity and Fairness: While complete objectivity might be difficult to achieve, journalists aim to present information fairly and impartially, avoiding bias and providing multiple perspectives on a given issue.

Independence: Journalists should be free from undue influence, whether it's from advertisers, governments, or other external parties. They should exercise their professional judgment and adhere to their ethical standards without being coerced.

Transparency: Journalists should be open about their methods, sources, and conflicts of interest. Transparency helps the audience understand how news is gathered and reported.

Minimizing Harm: Journalists should consider the potential impact of their reporting on individuals and communities. They should exercise caution when dealing with sensitive information and prioritize the well-being of those affected by their work.

Accountability: Journalists play a role in holding individuals, institutions, and governments accountable for their actions. They should be willing to correct mistakes and address criticism.

Public Interest: Journalists should prioritize stories and information that serve the public's interest and contribute to informed decision-making. Sensationalism and trivial stories should be balanced with substantive news.

Diversity and Inclusivity: Journalists should strive to reflect the diversity of society in their reporting, including diverse voices, perspectives, and stories that might otherwise be overlooked.

Ethical Behavior: Journalists should uphold ethical standards in their work, including respecting privacy, avoiding plagiarism, and adhering to legal and professional guidelines.

Significance of Journalism:

Informed Society: Journalism provides the public with reliable and accurate information, enabling individuals to make informed decisions about their lives, communities, and societies.

Accountability: Journalists act as watchdogs by holding governments, institutions, and powerful individuals accountable for their actions and decisions.

Transparency and Democracy: Journalism promotes transparency in government and other institutions, fostering a healthy democratic process by allowing citizens to engage in informed discussions and participate in civic life.

Social Change: Investigative journalism can expose social injustices, corruption, and human rights abuses, leading to positive change and reform.

Cultural Understanding: Journalism helps foster understanding and appreciation of different cultures, communities, and viewpoints, promoting tolerance and empathy.

Economic and Business Information: Financial journalism provides crucial information about markets, businesses, and economic trends, assisting individuals and businesses in making sound financial decisions.

Public Safety and Health: Health and safety journalism informs the public about potential risks, outbreaks, and safety measures, contributing to the well-being of communities.

Empowerment: Journalism empowers individuals by giving them the tools to critically evaluate information, question authority, and actively engage in society.

Community Building: Local journalism strengthens communities by highlighting local issues, events, and stories that might otherwise go unnoticed.

Crisis Communication: Journalists play a vital role in providing timely and accurate information during crises, emergencies, and disasters, helping people make informed decisions and stay safe.

Functions of Journalism

Journalism serves several important functions within society, playing a crucial role in informing, educating, and engaging the public. The functions of journalism include:

Informing the Public: Journalism's primary function is to provide accurate and timely information about current events, issues, and developments on a local, national, and global scale. This information allows individuals to stay informed about the world around them.

Watchdog Role: Journalism acts as a watchdog by monitoring and holding individuals, institutions, and governments accountable for their actions. Investigative reporting uncovers corruption, abuses of power, and wrongdoing, helping to ensure transparency and prevent abuse.

Providing Analysis and Context: Journalists provide analysis, interpretation, and context to help the audience understand complex issues, policies, and events. This function goes beyond simply reporting facts to offering insights that facilitate informed discussions.

Fostering Public Discourse: Journalism serves as a platform for public discussion and debate. It provides a space for different viewpoints and opinions, contributing to the exchange of ideas and democratic dialogue.

Gatekeeping: Journalists decide which stories to cover and how to present them, influencing what information the public receives. This gatekeeping function helps prioritize and filter the news to ensure it's relevant and meaningful.

Providing a Voice to the Marginalized: Journalism can amplify the voices of marginalized and underrepresented communities, giving them a platform to share their stories and concerns with a broader audience.

Cultural Preservation: Journalism records and preserves cultural events, traditions, and histories, helping to maintain cultural identity and heritage.

Emergency and Crisis Communication: During emergencies, natural disasters, or crises, journalism plays a crucial role in disseminating important information, safety instructions, and updates to the public.

Promoting Accountability and Transparency: By exposing wrongdoing and holding those in power accountable, journalism contributes to a more accountable and transparent society.

Educating the Public: In addition to reporting news, journalism educates the public about various topics, from science and technology to health and social issues, helping people make informed decisions in their daily lives.

Entertainment and Cultural Exploration: Journalism covers entertainment, arts, and cultural events, providing a source of leisure and exploration of creativity and human expression.

Monitoring Social Change: Journalism tracks social, political, and economic changes over time, documenting shifts in society and identifying trends.

Community Building: Local journalism brings communities together by covering local events, activities, and issues, fostering a sense of connection and identity.

Setting the Agenda: Journalism helps shape public opinion and policy agendas by highlighting certain issues and influencing what topics receive attention from the public and policymakers.

Championing Human Rights: Journalism plays a role in advocating for human rights, social justice, and equality by shedding light on injustices and advocating for positive change.

Kinds of Journalism

Journalism encompasses a wide range of specialized fields, each focusing on specific topics, formats, and approaches. Here are some of the different kinds of journalism:

News Journalism: The most common form of journalism, focusing on reporting current events, breaking news, and developments across various fields such as politics, economics, and society.

Investigative Journalism: In-depth reporting that involves thorough research and uncovering hidden truths, corruption, or abuses of power. Investigative journalists often work on long-term projects to expose important issues.

Feature Journalism: Feature articles go beyond the news to provide in-depth analysis, human-interest stories, profiles, and cultural explorations. They offer a broader perspective on topics of interest.

Opinion Journalism: Involves expressing personal viewpoints, commentary, and analysis on current events and issues. Editorials and columns are examples of opinion journalism.

Photojournalism: Photojournalists capture powerful images that convey news, emotions, and stories visually. Their work enhances and complements written journalism.

Broadcast Journalism: Includes television and radio reporting, presenting news through visual and audio formats. It encompasses news anchors, reporters, correspondents, and producers.

Online Journalism: Journalism conducted through digital platforms, including news websites, blogs, podcasts, and social media. Online journalists often engage with interactive and multimedia elements.

Data Journalism: Involves analyzing and visualizing large datasets to uncover patterns, trends, and insights, presenting complex information in a more accessible manner.

Cultural Journalism: Focuses on reporting arts, entertainment, and cultural events, including literature, music, theater, and film.

Environmental Journalism: Covers environmental issues, climate change, conservation efforts, and the impact of human activities on the planet.

Business and Financial Journalism: Reports on economic trends, markets, corporate practices, and financial developments.

Science and Technology Journalism: Focuses on scientific discoveries, technological advancements, and their societal implications.

Health Journalism: Covers health-related topics, medical breakthroughs, public health concerns, and healthcare policies.

Travel Journalism: Explores travel destinations, cultures, and experiences, often providing advice and insights for travelers.

Political Journalism: Focuses on politics, government policies, elections, and political developments.

Sports Journalism: Covers sporting events, athletes, teams, and related issues in the world of sports.

Educational Journalism: Reports on education-related topics, trends, challenges, and innovations in the education sector.

Conflict Journalism: Covers conflicts, wars, and geopolitical issues, often involving on-the-ground reporting from conflict zones.

Fashion Journalism: Focuses on fashion trends, designers, and the fashion industry.

Automotive Journalism: Covers the automotive industry, vehicle reviews, technological advancements, and trends.

Module – III

History of Indian Journalism

The history of journalism in India is rich and diverse, spanning over centuries and reflecting the country's social, political, and cultural evolution. Here is an overview of the key milestones and developments in Indian journalism:

18th Century: The first known newspaper in India was "Bengal Gazette," launched by James Augustus Hicky in 1780 in Calcutta (now Kolkata). It covered a variety of topics, including local news, cultural events, and political commentary.

19th Century: The 19th century witnessed the emergence of several influential newspapers, often playing a role in advocating for political and social reform. Notable publications included "The Hindu" (1878), which focused on nationalist and social issues, and "Amrita Bazar Patrika" (1868), which covered political events and supported Indian nationalism.

Freedom Struggle: Indian journalism played a significant role in the fight for independence from British colonial rule. Newspapers like "Young India" (1919-1932) and "Harijan" (1933-1956), both edited by Mahatma Gandhi, became platforms for promoting civil disobedience and nonviolent resistance.

Post-Independence Era: After India gained independence in 1947, journalism continued to evolve. Newspapers like "The Times of India" and "The Indian Express" played important roles in shaping public opinion and contributing to the nation-building process.

Broadcast Media: The 1950s saw the establishment of the All India Radio (AIR) and Doordarshan, India's state-owned radio and television broadcasters, respectively. These platforms became major sources of news and information for the masses.

Print Boom: The latter half of the 20th century witnessed a proliferation of newspapers and magazines across various languages and regions. This period also saw the rise of investigative journalism and a growing emphasis on social issues.

Liberalization and Digital Age: In the 1990s, economic liberalization led to the growth of private media outlets and a diversification of content. The advent of the internet in the 21st century brought about a digital revolution, with online news platforms gaining prominence.

Challenges and Opportunities: Indian journalism faces challenges such as concerns over press freedom, censorship, and financial sustainability. However, it continues to thrive as a dynamic and influential force in society, covering a wide range of topics and contributing to public discourse.

Regional Journalism: Regional languages and cultures have a significant impact on Indian journalism. Many newspapers and media outlets cater to diverse linguistic and cultural communities, ensuring a vibrant and varied media landscape.

Social Media Impact: The rise of social media platforms has transformed the way news is consumed and shared. Social media enables real-time information dissemination and has become a tool for citizen journalism.

JA Hicky (James Augustus Hicky):

James Augustus Hicky was an Irishman who is credited with establishing the first known newspaper in India, the "Bengal Gazette" or the "Calcutta General Advertiser." He started the newspaper in 1780 in Calcutta (now Kolkata). Hicky's newspaper covered a variety of topics, including local news, cultural events, and political commentary. He was known for his outspoken and critical views, which often led to conflicts with British colonial authorities. Despite facing legal challenges and financial difficulties, Hicky's newspaper played a significant role in shaping the early landscape of journalism in India.

Raja Rammohun Roy:

Raja Rammohun Roy (1772–1833) was a prominent Indian social reformer, scholar, and writer during the 19th century. While not primarily a journalist, he used his writings and publications to advocate for social and religious reform. Rammohun Roy was a strong proponent of religious tolerance, women's rights, and education. He established the BrahmoSamaj, a reformist movement that aimed to modernize and rationalize Indian religious practices. Rammohun Roy's publications, including tracts, articles, and translations, played a crucial role in challenging orthodoxy and promoting social reform in colonial India.

Mahatma Gandhi (MK Gandhi):

Mohandas Karamchand Gandhi (1869–1948), popularly known as Mahatma Gandhi, was a preeminent leader of the Indian independence movement against British rule. While not a journalist in the traditional sense, Gandhi used various forms of media and publications to spread his ideas and promote his philosophy of nonviolent resistance (Satyagraha). He edited and wrote for several newspapers during his lifetime, including "Indian Opinion" and "Young India." These publications served as platforms for Gandhi to advocate for civil rights, social justice, and India's independence. Gandhi's writings and speeches, often disseminated through newspapers, played a pivotal role in mobilizing public support and galvanizing the masses during the freedom struggle.

Module – IV

Magazine Journalism

Magazine journalism is a form of media that involves the creation, editing, and publication of content in magazines. Magazines are periodical publications that cover a wide range of topics, including news, features, analysis, commentary, and specialized interests. Magazine journalism offers in-depth and comprehensive coverage on subjects that might not be as time-sensitive as daily news.

Here are some key aspects of magazine journalism:

Diverse Topics: Magazines cover a broad spectrum of subjects, including politics, culture, fashion, lifestyle, travel, science, technology, health, entertainment, and more. This diversity allows magazines to cater to specific interests and niche audiences.

Long-Form Content: Unlike newspapers, which often focus on breaking news, magazines typically feature longer and more in-depth articles. This allows for detailed analysis, investigations, and storytelling.

Visual Appeal: Magazines often emphasize visual elements, such as photographs, illustrations, and infographics, to enhance the reader's experience and provide context to the content.

Editorial Voice: Magazines develop their unique editorial voice and style, which can range from authoritative and serious to informal and conversational, depending on the target audience and content.

Specialized Columns and Features: Magazines frequently include specialized columns, features, and regular sections that cater to specific interests or provide expert insights.

Editorial Planning: Magazine journalists often work on editorial calendars, planning content for upcoming issues well in advance. This allows for a strategic approach to covering timely and evergreen topics.

Audience Engagement: Magazines build a sense of community and engagement with their readers by fostering discussions, feedback, and reader-contributed content.

Magazine Formats: Magazines can be published in various formats, including print, digital, or both (print and online). Digital magazines may include interactive elements, videos, and multimedia content.

Print and Digital Design: Design plays a crucial role in magazine journalism. Print magazines focus on layout, typography, and visual aesthetics, while digital magazines may include interactive design elements for a dynamic reading experience.

Magazine Journalism Careers: Magazine journalists work as editors, writers, reporters, photographers, designers, and illustrators. They may contribute to mainstream consumer magazines, trade publications, specialty magazines, and more.

Independent and Alternative Magazines: In addition to mainstream magazines, there is a vibrant scene of independent and alternative magazines that focus on unique perspectives, subcultures, and creative expression.

Global Reach: Magazines can have a global reach, allowing them to cover international issues and connect with audiences around the world.

Scope of Magazine Journalism:

Magazine journalism continues to have a significant scope in the media landscape, offering a platform for in-depth analysis, storytelling, and catering to niche interests. The scope of magazine journalism includes:

In-Depth Coverage: Magazines provide the space for comprehensive and in-depth coverage of topics, allowing for thorough analysis and exploration beyond the constraints of daily news.

Niche Audiences: Magazines can target specific audiences and cater to niche interests, which helps build engaged and loyal readerships.

Long-Form Journalism: Magazines allow journalists to create long-form content that delves into complex issues, personal stories, and expert insights.

Visual Storytelling: Visual elements such as photographs, infographics, and illustrations enhance storytelling and provide a visually appealing experience for readers.

Specialized Columns: Magazines often feature specialized columns, sections, and features that focus on particular subjects, contributing to a comprehensive understanding of various topics.

Cultural Exploration: Magazines can explore cultural trends, art, literature, and lifestyle, fostering an appreciation for creativity and diversity.

Global Perspectives: Magazines can cover international issues, providing readers with a broader understanding of global events and trends.

Trends in Magazine Journalism:

Digital Transformation: Magazines are adapting to digital platforms, offering online editions, mobile apps, and interactive content to reach a wider and more tech-savvy audience.

Multimedia Integration: Magazine journalism is incorporating multimedia elements such as videos, podcasts, and interactive graphics to enhance storytelling and engage readers.

Personalization: Many magazines are leveraging data analytics to personalize content for individual readers, offering tailored recommendations and experiences.

Sustainability and Social Responsibility: Magazines are increasingly covering environmental and social issues, reflecting a growing interest in sustainability and responsible living.

Diversity and Inclusion: Magazines are focusing on representing diverse voices and perspectives, promoting inclusivity and reflecting the multicultural nature of society.

Community Engagement: Magazines are using social media and online forums to engage with readers, fostering discussions and building a sense of community.

Challenges in Magazine Journalism:

Digital Disruption: The shift to digital platforms has led to challenges in monetization, subscription models, and maintaining a loyal online readership.

Competition: Magazines face competition from various sources, including online news, blogs, social media, and other digital content.

Attention Span: In an era of information overload, capturing and maintaining readers' attention is a challenge, particularly for longer-form content.

Financial Sustainability: Securing advertising revenue and subscriptions while managing production costs is an ongoing challenge for magazine publications.

Misinformation and Trust: Like other forms of media, magazines must combat the spread of misinformation and fake news while building and maintaining reader trust.

Changing Reading Habits: Evolving reading habits, such as shorter attention spans and increased reliance on mobile devices, impact how magazines are consumed.

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Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Student Enrolment Sheet

Class: U. B. A / B. Com / B. Sc

S. No	Roll No.	Name of the Student	Signature
1	001	K. Swathi	K. Swathi
2	004	G. Sobha Rani	G. Sobha Rani
3	006	Ad. Bari	Ad. Bari
4	008	D. Narayana	D. Narayana
5	009	S. V. D. Bhavani	S. V. D. Bhavani
6	013	G. Rama Krishna	G. Rama Krishna
7	016	D. Aparna Jyothi	D. Aparna Jyothi
8	020	K. Prasad	K. Prasad
9	021	Md. Imran	Md. Imran
10	023	Ch. Rahul	Ch. Rahul
11	024	A. Pavan Kumar	A. Pavan Kumar
12	025	J. Naga Bhanu	J. Naga Bhanu
13	026	M. N. Bhashanam	M. N. Bhashanam
14	027	M. Munni	M. Munni
15	028	N. Sai Prakash	N. Sai Prakash

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Student Enrolment Sheet

Class : TC B.A/B.Com/B.Sc

S. No	Roll No.	Name of the Student	Signature
16	201	K. N. Hemanth babu	K.N. Hemanth babu
17	202	T. John Micheal	T. John Micheal
18	203	B. Sai Kiran	B. Sai Kiran
19	204	G. Ramu	G. Ramu
20	205	G. Ravi Kishor	G. Ravi Kishor
21	207	D. Subramanyam	D. Subramanyam
22	215	Ch. Rambabu	Ch. Rambabu
23	217	M. Prityanka	M. Prityanka
24	218	K. Manasa	K. Manasa
25	219	P. Naga balaji	P. Naga balaji
26	220	L. N. S. Manikanta	L. N. S. Manikanta
27	221	V. Nithin	V. Nithin
28	222	R. Srinivasa Rao	R. Srinivasa Rao
29	223	K. Vijay	K. Vijay
30	224	B. Srilatha	B. Srilatha

M. C. S. Kumari
Lecturer
Signature

H. Saleem
Principal's
Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Journalism

Objectives : Objectivity in journalism aims to help the audience make up their own mind about a story , providing the facts alone and then letting audiences interpret those on their own.To maintain objectivity in journalism ,journalists should present the facts whether or not they like or agree with those facts.

Methodology :Lecture based learning

Duration :30 hours

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Journalism

Test Exercise:

1. Breaking news means
2. Feature stories means
3. The people or documents you use when reporting a story are called
4. Journalism with its modern characteristics originated from --- in the 18th century.
5. The history of modern journalism in Bengal was inaugurated by ---
6. What is yellow journalism?
7. What is editorial?
8. What is ABC?
9. The news that appears two or three days before an event is called?
10. A journalist who is not attached with any news paper is called?

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Journalism

Key:

1. Telling about an event as it happens.
2. A detailed look at something interesting that's not breaking news.
3. Sources
4. Europe
5. Augustus hicky
6. Exploitative sensational
7. A point of view of the newspaper
8. Audit bureau of Circulation
9. Curtain Raiser
10. Free lancer

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course - Attendance Register

Class / Section: IV B.A | B.Com | B.Sc Year : 2018-2019 Department of: Telugu

Paper: Journalism Lecturer: M. V. S. Chinnu

Sl. No	Roll No	Student Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1	001	K. Sowathi	P	P	P	P	P	A	P	P	P	P	P	P	P	A	P	13
2	004	G. Sobha Rani	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	14
3	006	Ad. Bari	P	A	P	P	P	P	A	P	P	P	A	P	P	P	P	12
4	008	D. Narayana	A	P	P	P	A	P	P	A	P	P	A	P	P	A	P	10
5	009	S. V. D. Bhavani	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	14
6	013	G. Rama Krishna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
7	016	D. Aparna Jyothi	P	P	P	A	P	P	P	P	P	P	P	A	P	P	P	13
8	020	K. Prasada	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
9	021	Hd. Imran	P	P	P	P	P	A	P	P	P	P	P	A	P	P	A	12
10	023	Ch. Rahul	P	A	P	P	P	A	P	P	P	A	P	P	A	P	A	10
11	024	A. Pavan Kumar	P	P	P	A	P	P	P	P	P	P	A	P	P	P	P	13
12	025	J. Naga Bharu	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
13	026	M. N. Bhashanam	P	A	P	P	P	A	P	P	A	P	P	P	A	P	P	11
14	027	M. Munni	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	13
15	028	N. Sai prakash	P	P	P	A	P	P	P	P	A	P	P	P	A	P	P	12

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course - Attendance Register

Class / Section: II B.A/B.Com/B.Sc Year : 2018 - 2019 Department of: Telugu.

Paper: Journalism Lecturer: Mrs. S. Chandra

Sl. No	Roll No	Student Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
16	201	K.N. Hemanth babu	P	P	P	P	P	A	A	P	P	P	A	P	P	P	P	12
17	202	T. John Michael	A	P	A	P	P	A	P	P	A	P	P	A	P	P	P	10
18	203	B. Sai Kiran	P	P	P	A	P	P	P	P	P	A	P	P	P	A	P	13
19	204	G. Ramu	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	14
20	205	G. Ravi Kishor	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	13
21	207	D. Subramanyam	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	13
22	215	Ch. Rambabu	P	P	A	P	P	A	P	P	P	P	P	P	P	P	A	12
23	217	M. Priyanka	A	P	P	P	P	P	P	P	P	A	P	P	P	P	A	12
24	218	K. Manasa	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
25	219	P. Naga balaji	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	14
26	220	L.N.S. Manikanta	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
27	221	V. Nithin	A	A	P	P	P	P	P	P	P	P	P	P	A	P	P	12
28	222	R. Srimivasa Rao	P	P	P	P	P	P	A	P	P	P	P	A	A	P	P	13
29	223	K. Vijay	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
30	224	B. Sripatha	P	P	P	P	P	P	A	A	P	P	P	P	A	P	P	12

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Telugu.

Certificate Course

Title: Journalism

Marks List

Class: B.A/B.Com/B.Sc

S. No	Roll No.	Name of the Student	Marks
1	001	K. Swathi	40
2	004	G. Sobha Rani	35
3	006	Ad. Bari	28
4	008	D. Narayana	38
5	009	S. V. D. Bhavani	41
6	013	G. Rama Krishna	35
7	016	D. Aparna Jyothi	40
8	020	K. Prasad	42
9	021	Md. Imran	41
10	023	Ch. Rahul	38
11	024	A. Pavan Kumar	29
12	025	J. Naga Bharu	30
13	026	M. N. Bhashanam	42
14	027	M. Munni	43
15	028	N. Sai Prakash.	32

M. C. S. Kumari
Lecturer

S. Sankar
Principal's

S. Sankar

S. Sankar

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Telugu.

Certificate Course

Title: Journalism

Marks List

Class: II B.A/B.Com/B.Sc

S. No	Roll No.	Name of the Student	Marks
16	201	K. N. Hemanth babu	40
17	202	T. John Michael	36
18	203	B. Sai Kiran	28
19	204	G. Ramu	42
20	205	G. Ravi Kishor	45
21	207	D. Subramanyam	33
22	215	Ch. Rambabu	29
23	217	M. Prityanka	34
24	218	K. Manasa	41
25	219	P. Nagabala Ji	42
26	220	L. N. S. Manikanta	45
27	221	V. Nithin	38
28	222	R. Srinivasa Rao	39
29	223	K. Vi Jay	40
30	224	B. Srilatha	41

D. Saleem
Principal's

Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Telugu

Certificate Course

Title: Journalism.

Feed Back Form

1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
4. Have the teacher covered the entire syllabus? (Yes/No) ✓
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

Ch. Rahul

(II B.A)



ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)



Department of Telugu

CERTIFICATE COURSE: Journalism

CERTIFICATE

This is to Certify that D. Aparna Jayanthi.....ofII B.A...... has successfully completed Certificate Course in **Journalism** organised by the Department of Telugu during the Year-2018-2019 and passed the Examination in grade...A.....

M. C. S. Kumar
Co-ordinator

Jm
Head of Department

D. Balakrishna
Principal

Principal
Adusumilli Gopalakrishnaiah & Sugarcane Growers
Siddhartha Degree College of Arts & Science,
Vuyyuru-521 165, Krishna District.



ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)



Department of Telugu

CERTIFICATE COURSE: Journalism

CERTIFICATE

This is to Certify thatB. Sai Kiran.....ofT. B. Se. M.P...... has successfully completed Certificate Course in **Journalism** organised by the Department of Telugu during the Year-2018-2019 and passed the Examination in grade...A.....

M. C. S. Kumari
Co-ordinator

[Signature]
Head of Department

D. Balakrishna
Principal
Principal
Adusumilli Gopalakrishnaiah & Sugarcane Growers
Siddhartha Degree College of Arts & Science,
Vuyyuru-521 165, Krishna District.



**Adusumilli Gopalakrishnaiah & Sugarcane Growers
Siddhartha Degree College of Arts & Science**

Vuyyuru – 521165, Krishna District, Andhra Pradesh

(An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam)

Accredited by NAAC with "A" Grade

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**DEPARTMENT OF BOTANY
CERTIFICATE COURSE
MUSHROOM CULTIVATION**

2018-19



**COURSE CODE:-BOTCCMC02
DATE:-03/12/2018 TO 11/01/2019 &
20/01/2019 TO 06/03/2019**

2

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF BOTANY

Certificate Course

Title: Mushroom Cultivation

2018-19

Name of the Lecturer	: Ch. Beulah Ranjani
Class	: II BZC (T.M&E.M)
Duration of the Course	: 03.12.2018 to 11.01.2019 & 20. 01.2019 to 06.03.2019.
Course Code	: BOTCCMC - 02

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Objectives:

Mushroom production can play an important role in managing farm organic wastes when agricultural and food processing by-products are used as growing media for edible fungi.

Methodology: Mushroom farming consists of six steps, and although the divisions are somewhat arbitrary, these steps identify what is needed to form a production system. The six steps are Phase I composting, Phase II composting, spawning, casing, pinning, and cropping.

Duration : 30 days (03. 12. 2018 to 11.01.2019 & 20.01.2019 to 06.03.2019)

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course

Student Enrolment Sheet

Class : B.A., B.ZC., B.Sc.

S. No	Roll No.	Name of the Student	Signature
1	17-006	Abdul Bhari	Ab Bhari
2	17-007	K. Muralimohan	K. Muralimohan
3	17-051	G. Ashok kumar	G. Ashok kumar
4	17-013	O. Rama Krishna	O. Ramakrishna
5	17-026	M. Naga Bhushaniam	M. NAGA BHUSHANIAM
6	17-029	K. Pavan Kalyan	k. pavan kalyan
7	17-020	K. Prasad	k. prasad
8	17-023	CH. Rahul	CH. Rahul
9	17-030	M. Vinay Babu	M. Vinay Babu
10	17-050	J. Rajesh	J. Rajesh
11	17-021	Md. Imran	Md. Imran
12	17-019	P. Naveen	P. Naveen
13	17-041	Y. Bhavya	Y. Bhavya
14	17-034	P. Madhuri	P. Madhuri
15	17-022	Y. Swapna	Y. Swapna

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course

Student Enrolment Sheet

Class : II B.A. BZC

S. No	Roll No.	Name of the Student	Signature
1	17-434	G. Prudhvi Raja	G. Prudhvi Raja
2	17-428	T. Lavanya	T. Lavanya
3	17-422	K. Siva Rama Krishna	K. Siva Rama Krishna
4	17-237	K. Nagarjuna	K. Nagarjuna
5	17-239	S. Rahetullah	S. Rahetullah
6	17-231	V. Sai Prathyscha	V. Sai prathyscha
7	17-332	V. Tanaki	V. Tanaki
8	17-508	V. Bhargavi	V. Bhargavi
9	17-516	M. Vimala Kumari	M. Vimala Kumari
10	17-509	A. Vijaya Rani	A. Vijaya Rani
11	17-335	M. Sathuxa	M. Sathuxa
12	17-331	P. Pooja	P. Pooja
13	17-511	L. Dhavani	L. Dhavani
14	17-311	K. Usha Rani	K. Usha Rani
15	17-301	K. Sathavathi	K. Sathavathi

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course

Student Enrolment Sheet

Class : II . B . A . B . Zc .

S. No	Roll No.	Name of the Student	Signature
1	17-303	V. Dhananjali	V. Dhananjali
2	17-304	P. Keerthana	P. Keerthana.
3	17-308	G. Lavanya	G. Lavanya
4	17-513	D. Deepthi	D. Deepthi
5	17-507	P. Naga Rani	D. Deepthi
6	17-520	D. Deepika	D. Deepika
7	17-502	G. Sandeep	G. Sandeep
8	17-505	K. Tejaswi	K. Tejaswi
9	17-503	K. Mounika	K. Mounika
10	17-514	Y. Rushyanth	Y. Rushyanth
11	17-024	A. Pavan Kumar	A. Pavan Kumar
12	17-424	G. Y. S. Pavan	G. Y. S. Pavan.
13	17-512	Srikanth-B	G. Y. S. Srikanth B.
14	17-515	T. Naga Divya	T. Naga Divya.
15	17-337	D. Haritha	D. Haritha

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course

Student Enrolment Sheet

Class : _____

S. No	Roll No.	Name of the Student	Signature
1	17-525	B. Chandana	B. Chandana
2	17-641	T. Kalyan Gurra Antta	T. Kalyan Gurra Antta
3	17-650	D.N. Mallikaisu	D.N. Mallikaisu
4	17-637	P.V.V. Chinnana Rao	P.V.V. Chinnana Rao
5	17-643	M. Tarun Sai	M. Tarun Sai
6			
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11			
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13			
14			
15			

C. B. Ranjan

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Mushroom Cultivation

Date: (03. 12. 2018 to 11.01.2019 & 20.01.2019 to 06.03.2019)

Date	Content	Module No.
	1. Mushroom Cultivation- Introduction, Uses, Types of mushrooms (6hr). 2. Preparation of Mother Spawn in Saline bottle, sterilization. 3. Cultivation of milky mushrooms.	UNIT-1
	4. Soil PH, Water, Soil sterilization, dark room, light room. 5. Controlled room temperature, culture caring. 6. Diseases and their controlling methods.	UNIT-2
	7. Storage and nutritional value. 8. Industrial edible mushrooms, poisonous mushrooms. 9. Importance and Medicinal value of mushrooms.	UNIT-3
	10. Types of food prepared from mushrooms 11. Marketing in India. Export value.	UNIT-4

INTRODUCTION

Mushrooms are one of the most loved food not only for its exotic taste but also for the benefits with which it comes. It can be consumed in various forms like fresh, pickled, dried, powdered, canned etc. Its farming has picked up a fast pace among contemporary entrepreneurs owing to its nutritional and medicinal benefits and low cost input with high output. Mushrooms are a fleshy fungi (Basidiomycota, Agaricomycetes) having a stem, cap and gills underneath the cap. They can be edible, wild and some of them can be toxic too. It contains more than 90% water and less than 1% fat, loaded with Vitamin B, copper and selenium and low in sodium. Usually vegetables, milk and other food products are fortified with Vitamin D by irradiation or direct addition but mushrooms are unique in this sense because they are naturally a rich source of Vitamin D which otherwise is procured from animals or poultry . The reason being that it contains copious amount of plant sterol “Ergo sterol”. It is a precursor of Vitamin D which when stimulated by sunlight or artificial lightening source converts to Vitamin D.

Uses of mushrooms

- Decrease the risk of cancer
- Lower sodium intake
- Promote lower cholesterol
- Protect brain health
- Provide a source of vitamin D
- Stimulate a healthier gut
- Support a healthy immune system.

TYPES OF MUSHROOMS:

A good test for edibility however is the taste test, if a tiny amount is placed on the tongue and chewed a burn like chilli means the mushroom is poisonous, a pleasant mushroomy taste means it is edible.

Mushrooms are easily cultivable in hilly regions due to abundant moisture but can also be grown in artificial environment with proper temperature and humidity control. Varieties must be identified thoroughly as some of them might cause food poisoning or allergy upon consumption.

Some of the major varieties consumed in India are as follows: Button Mushroom
Button mushroom (*Agaricus bisporus*) belongs to Class Basidio mycetes and Family Agaricaceae. It is of two types white and brown, out of which white button mushrooms commonly grown in India.

Shiitake Mushroom Shiitake Mushrooms are native to East Asia and are highly consumed in Asian countries. They readily grow on wood of deciduous and hard wood trees such as Oak, Chestnut, and Maple etc. and require moist and warm climate. In rare cases they may cause allergic reaction like itching but can be eliminated by thorough cooking. These are used in Asian cuisines and traditional medicines.

Oyster Mushroom Oyster Mushrooms (*Pleurotus ostreatus*) belongs to *Pleurotus* species. It is known as “Dhingri” in India and has fan or oyster shaped cap. They grow easily on decaying wood or straw. **Paddy Straw Mushroom** *Volvariella volvacea* belongs to division Basidiomycota. It is usually grown on Rice straw bed and is used extensively in Asian Cuisines .

Spawn preparation:

Fill the grains in saline bottles up to 3/4th height (approximately 300-330 g / bottle), insert a PVC ring , bold the edges of the bag down and plug the mouth tightly with non-absorbent cotton wool. Cover the cotton plug with a piece of waste paper and tie tightly around the neck with a jute thread.

A small tissue from a well-grown mushroom is aseptically transferred to agar medium in a test tube in a culture room. The test tubes are incubated under room temperature for 10 days for full white growth of fungal culture. This is further used for preparation of mother spawn.

In the spawn-production process, mycelium from a mushroom culture is placed onto steam-sterilized grain, and in time the mycelium completely grows through the grain. This grain/mycelium mixture is called spawn, and spawn is used to "seed" mushroom compost.

Milky mushroom, otherwise known as summer mushroom, is a long sized, white and attractive mushroom of India. This is a tropical mushroom like paddy straw mushroom. Artificial cultivation started as early as 1976 in the state of West Bengal. Now, this mushroom has gained popularity in the states of Karnatak, Tamilnadu, Kerala and Andhra Pradesh. The climatic condition of these states including Odisha is suitable for milky mushroom cultivation from March to October. However, in some states this has not been commercialized yet because of the preference of paddy straw mushroom by the people. At present efforts are on to popularize milky mushroom in India like paddy straw and oyster mushroom.

Attributes:

- The mushroom is bright white in colour and attractive.
- Different types of cellulosic wastes can be used as basal substrate.
- The cultivation procedure is simple and easy
- Productivity is higher – 80 to 100 %
- Milky mushroom has good self life. Fruit bodies can be stored for 3-4 days in ambient condition.
- Fresh mushroom can be exported.



CLIMATIC REQUIREMENT

Temperature: Milky Mushroom can be grown in the temperature range of 25⁰ - 40⁰C. However, for best yields, 25⁰ - 35⁰C is necessary. Hence, this mushroom can be cultivated from the month of March to October in major states of India. During summer months, it may be necessary to bring down the temperature and to improve the relative humidity for obtaining higher yields.

Relative humidity: Atmospheric relative humidity should be in the range of 80 – 85 %. Under low humidity, young fruit bodies dry up or the upper surface of the mushroom becomes rough.

Light: During fruiting, low light (200 lux) is necessary. However during the mycelium growth period, light requirement is still minimal.

Ventilation: During fruiting stage, more oxygen is required and therefore, bags are kept in a well-ventilated room.

MATERIAL REQUIREMENT

Substrate: Different types of cellulosic agricultural residues such as **paddy straw, wheat straw, barley straw, maize, jowar and bajra stalkm groundnut haulms, sugarcane bagasse, wheat bran and cotton waste** can be used as basal substrate. However, **paddy straw** is the best substrate for cultivation of Milky Mushroom. About one kilogram of dry straw is necessary for raising a single bag.

Mushroom Spawn: Three weeks to one month old 100 grams of good quality seeds (10 % of dry weight of straw) is necessary for raising a bag. The spawn should be procured from a recognized spawn laboratory.

Organic Supplement: For improving productivity one may use pasteurized maize meal, wheat bran, paddy husk or boiled wheat grain at 100-150 gm per bag during spawning.

Polythene Bag: Polythene tube of dimension **60 cm x 40 cm** with 100 gauge thickness and open at both sides is required for milky mushroom cultivation.

CULTIVATION PROCEDURE

Substrate Processing: Good quality paddy straw is chopped to 4-5 cm size with chaff cutter. The chopped straw is soaked in clean and cold water for six hours. However, the soaking period is varied with nature of substrate. Excess water is drained from the straw and it is subjected to physical and chemical means of pasteurization as in the case of oyster mushroom. Straw should contain **50-55%** moisture at the end for giving better productivity.

Raising of Bags: One end of the polythene tube is tied with rubber band and the moistened and pasteurized substrate is put inside to a height of **7.5 cm**. Substrate is then gently pressed and **one third each** of spawn and supplement (35 gm) spread at the **periphery** close to polythene. Likewise, **three such layers** are made and the bag is closed at the upper end after pressing the substrate. **15 to 20 small holes** (0.5 cm to 1.0 cm dia) should be made on all sides to facilitate gas exchange. Instead of layer spawning, mixed spawning may also be followed where the required quantity of spawn is mixed with the prepared substrate (soaked and pasteurized straw) and incorporated into the bag. The bags are then incubated in a dark room where a temperature of **25-35⁰C** and a relative humidity of **80%** are maintained. It takes about **20 days** when substrate is fully colonized

and bags are ready for casing. Bags are shifted to cropping room for casing and cropping.

Casing and after care : Casing means covering the top surface of bags after spawn run is over, with pasteurized casing material in about **2-3 cm** thickness. Casing provides physical support, moisture and allows gases to escape from the substrate. **Casing material(soil 50% + Compost 50%)** with pH adjusted to 7.8 to 7.9 with **chalk powder** is pasteurized in autoclave at 15 psi for one hour or chemically treated with **4 % formaldehyde** solution about a week in advance of casing. It is covered with polythene sheet to avoid escape of chemical and turned at 2 days interval so that at the time of casing, soil is free from formalin smell. Top of the bag is opened, polythene is folded and casing material is uniformly spread in 2-3 cm thickness.

Cropping : It takes about 10 days for the mycelium to reach the top of the casing layer when fresh air is introduced along with appropriate temperature and humidity. The changes thus made in the environment, result in the initiation of fruit bodies within 3-5 days which may mature in about a week.

Mushroom of **7-10 cm** diameter are harvested by twisting, cleaned and packed in perforated polythene/polypropylene bags for marketing. In a **40 days** duration crop, around 800-1000 g of mushroom may be harvested per bag. Hence, the biological efficiency of milk mushroom is 80-100%.

Average Yield per bag: 1 Kg

SOIL PH:

One of the most comprehensive studies of the influence of pH on mushroom mycelial growth in nutrient solutions was that by Treschow (6). Values of pH between pH 6.0 and pH 7.0 have been reported as optimum values for mycelial growth on liquid and semisolid media.

SOIL STERILIZATION:

Substrate is filled in polypropylene bags (x45cm, holding 2-3 kg wet substrate) and sterilized at 15 lb psi for 1 hour. Once pasteurization/sterilization is over straw is shifted to spawning room for cooling, bag filling and spawning.

DARK ROOM:

It's more related to the increased humidity as a result of less direct sunlight that produces more favorable conditions. Sunlight, as well as more open areas tend to

dry out much more quickly. Mushrooms do not need light to grow, as they do not photosynthesize their nutrients but pull them in from their substrate.

LIGHT ROOM:

Light: During fruiting, low light (200 lux) is necessary. However during the mycelium growth period, light requirement is still minimal.

Ventilation: During fruiting stage, more oxygen is required and therefore, bags are kept in a well-ventilated room.

Controlled room temperature:

Optimum temperature requirement for spawn running 30-32°C. Spawn running period 25-30 days. Cropping requires an optimum temperature of 30- 32°C, humidity of 80-85%, light and ventilation. Mushrooms can be harvested in 2-3 flushes after which the entire cycle is repeated.

Diseases and their control:

Maintain the surroundings of the mushroom farm in good condition, avoiding the accumulation of organic matter (compost, casing soil, mushroom stalks) which can act as a reservoir and refuge for spore-laden debris and flies. Inspect mushroom beds regularly for disease, especially prior to watering and picking.

Fungicides are pesticides that kill or prevent the growth of fungi and their spores. They can be used to control fungi that damage plants, including rusts, mildews and blights. They might also be used to control mold and mildew in other settings.

UNIT - 3

Storage and nutritional value:

Canning is the most common process for preserving mushrooms. For this, cleaned mushrooms are placed in cans containing 2.5 % sodium chloride and 0.25–0.5 % citric acid. The cans are then sealed and sterilized in autoclave for one hour at 100-120°C. It is one of the best long term storage.

Nutritive value of milky mushroom is comparable with other mushrooms. Mature fruit body of *C. indica* contains highest protein (17.2% on dry weight basis), while young pin heads contain the lowest proteins (15% on dry weight basis), 4.1% fat, 3.4% crude fibre and 64.26% carbohydrate on dry wt basis.

Industrial edible mushroom:

Milky mushroom is gaining popularity among the edible mushrooms because of its white attractive robust spore caps, highest protein content, long shelf life and taste. Production The milky mushroom (*Calocybe indica*) is a potentially new species to the world mushroom growers.

The most cultivated edible mushroom worldwide is *Agaricus bisporus* (common mushroom) followed by *Lentinus edodes* (shiitake mushroom), *Pleurotus* spp. (in particular oyster mushroom), and *Flammulina velutipes*.

1) *Cantharellus* It is the wild species of edible mushrooms. The fruiting body varied from orange, yellow to white colored. The shape was found funnel shaped. The fruiting body has shown rounded to forked folds all the way down the stipe. The folds are more wrinkled or rounded and randomly forked. The fruiting body emitted a peculiar fruity aroma and peppery taste. The gills were found more

2) *Calvatia* It is commonly called as Puffballs. It produce clouds of brown dust-like spores from fruiting body. The fruiting body do not have distinct stalk or stem. They do not have spore-bearing gills. The fruiting body produced mass of spores. The spores are produced to the basidia. The fruiting body has distinct colour and texture.

3) *Coprinus* It is known as shaggy mane or shaggy ink cap or lawyer's wig or shaggy mane. It is found on lawn waste areas. The fruiting body turns black and dissolves itself after picked. The fruiting body remains shaggy and with cylindrical ink cap. The cap of fruiting body is white and covered with scales. The gills beneath the cap are white to pink or black. It secretes a black liquid containing mass of spores.

4) *Pleurotus* It is commonly known as oyster mushroom. It was found on decomposed wood. The fruiting body is broad fan shaped or oyster-shaped. It may be white to gray or tan to dark-brown. The margin of fruiting body is in rolled. It becomes smooth and somewhat lobed or wavy. Its fruiting body is white and fleshy. The stipe is short and thick. The gills are white to cream and descend on the stalk or stipe of fruiting body.

5) *Laetiporus* It is known as Sulphur shelf or chicken of the woods or chicken mushroom or chicken fungus. Its texture is same as flesh of chicken. The fruiting body constitute of shelves which are made up of tiny tubular filaments or hyphae. The fruiting body forms large brackets. The young fruiting bodies are characterized by moist, rubbery and sulphur-yellow to orange colored body. The brackets may become pale and brittle with increase in age.

Poisonous mushrooms:

Poisonous mushrooms contain a variety of different toxins that can differ markedly in toxicity. Symptoms of mushroom poisoning may vary from gastric upset to organ failure resulting in death. Serious symptoms do not always occur immediately after eating, often not until the toxin attacks the kidney or liver, sometimes days or weeks later.

Poisonous mushrooms, such as Amanita sp and others can cause acute fatal liver necrosis. Intoxication by Amanita phalloides, known as the death cap, is caused by a group of toxins termed toxic cyclopeptides.

The most common consequence of mushroom poisoning is simply gastrointestinal upset. Most "poisonous" mushrooms contain gastrointestinal irritants that cause vomiting and diarrhea (sometimes requiring hospitalization), but usually no long-term damage. However, there are a number of recognized mushroom toxins with specific, and sometimes deadly, effects.

Importance and medicinal value of mushroom:

Mushrooms contain macronutrients that support a healthy immune system. According to the Mushroom Council, your immune system will benefit from mushrooms whose nutrients include: Selenium, which helps your body make antioxidant enzymes to prevent cell damage. Choose cremini or portabella mushrooms for the most benefit.

Medicinal value of mushroom:

More than 100 medicinal functions are produced by mushrooms and fungi and the key medicinal uses are antioxidant, anticancer, antidiabetic, antiallergic, immunomodulating, cardiovascular protector, anticholesterolemic, antiviral, antibacterial, antiparasitic, antifungal, detoxification, and hepatoprotective effects.

UNIT – 4:

Types of food prepared from mushroom:

Mushroom dishes and foods.

Cream of mushroom soup prepared with wild, edible mushrooms.

Duxelles.

Mushroom gravy atop French fries.

Mushroom ketchup in a plastic tub.

Filet mignon with a chunky, cream-based mushroom sauce.

Sautéed mushrooms.

Stuffed mushroom cap.

Marketing in india, export value:

The total mushroom exported around the world was 0.69 million tons. Globally India's share in total exports is insignificant. India exported 6167 tons of mushrooms in 2019. Mushroom is either processed or sold fresh.

With proper management and marketing, a farmer can generate a profit of Rs. 50,000-1,00,000 per 1000 bags annually. This Will vary according to Mushroom type and material used for production. If you start growing it in 100-500 square feet, you can make between Rs 1 lakh and Rs 5 lakh annually.

The value of goods exported to a foreign country by residents according to international trade statistics.

The global mushroom market is witnessing a significant growth in the demand for mushrooms with each passing year. They are a healthy and nutritious food that can be used in many different dishes. They are also relatively easy to grow, so they are becoming more popular with farmers and home gardeners alike.

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Mushroom Cultivation

Text Exercise:

1. _____ is known as temperature tolerant white button mushroom.
a. Agaricus b. Pleurotus c. Voveriella d. Agaricus bitorquis
2. Agaricus bisporus belongs to family_____.
a. Agaricaceae b. Malvaceae c. Rubiaceae d. Solanaceae
3. Basidiospores are_____spores.
a. exogenous b. endogenous c. Both a and b d. None of these
4. _____ toxin is present in Amanita muscaria.
a. Ibotenic acid b. Lactic acid c. Acidic acid d. All of the above
5. _____ is known as ‘king oyster mushroom’.
a. Pleurotus eryngii b. Volveriella c. Agaricus d. None of the above
6. Formaldehyde is used as_____in mushroom cultivation.
a. Disinfectant b. Fertilizer c. Insect repellent d. Food material
7. Short method of button mushroom compost preparation requires_____ days.
a. 14-18 days b. 10 days c. 20 days d. 30 days
8. What is the other name of Mushroom?
a. Funaria b. Dryopteris c. Agaricus d. Ferus
9. To which division does it belong?
a. Basidiomycetes b. Pteridophyta c. Thallophyta d. Mollusca
10. Mushroom is:
a. Saprophytic fungus b. Autotrophic Algae c. Heterotrophic fungus d. None of the above
11. Mycelium produces white or colored umbrella shaped fruiting bodies called:
a. Haphae b. Basidiocarp c. Annalus d seta
12. Basidiocarp consist of a fleshy stalk called _____ and umbrella like head borne on its top called _____
a. Hyphae and Seta b. Seta and Annulus c. Annulus and Antheridia
d. Stipe and Pileus

13. When young fruiting body is completely enveloped by a thin membrane, it is called

- a. Mycelium b. Rhizoids c. Velum(veil) d. Septate

14. With the growth of _____ velum gets ruptured, while a part of it remained attached to stipe in the form of ring or _____.

- a. Basidiocarp and Slender b. Pileus and Annulus c. Pyrenoid and Conjugation
d. Hyaline and Pyrenoid

15. On the lower side of Pileus number of vertical plates like structure is present called _____

- a. Spores b. Organelles c. Mushroom Dryopteris d. Gills

16. The gills on either side bear club shaped basidia which produce _____

- a. Basidiocarp b. Chloroplasts c. funaria d. None of these

17. It grows during _____

- a. Summer season b. winters c. Rainy season d. In all seasons

18. An edible mushroom is a mushroom that can potentially be safely eaten.

- a. True b. False

19. Mushrooms are fruit. Do you know what kind of fruit they are?

- a. Mold b. Fungus c. Blackberry d. Cherry

20. What kind of equipment do you need to go mushrooming?

- a. flat-bottomed basket or box b. A roll of waxed paper
c. A digging tool d. All of the Above

21. Two common poisonous mushrooms are the jack-o'lantern and the green-spored Lepiota.

- a. A. True b. B. False

22. Every mushroom hunter should be familiar with the three most dangerous groups of fungi.

- a. A. True b. B. False

23. To avoid mushroom poisoning, you should follow one rule.

- a. A. True b. B. False

24. Is it true that one cap of a Destroying Angel (*Amanita virosa*) can kill a man.

- a. A. True b. B. False

25. The shaggy mane mushroom is edible and easy to identify.

- a. A. True b. B. False

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Mushroom Cultivation

Key:

1. d. Agaricus bitorquis
2. a. Agaricaceae
- 3 a. exogenous
4. a. Ibotenic acid
5. a. Pleurotus eryngii
6. a. Disinfectant
7. a. 14-18 days
8. c. Agaricus
9. a. Basidiomycetes
- 10 a. Saprophytic fungus
11. b. Basidiocarp
12. d. Stipe and Pileus
13. c. Velum(veil)
14. b. Pileus and Annulus
15. d. Gills
16. a. Basidiocarp
17. c. Rainy season
18. a .True
19. b. Fungus
20. d. All of the Above
21. a. True
22. b. False
23. a. True
- 24 a. True
25. a. True

17-17

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Botany

Value Added Course / Certificate Course

Title: Mushroom cultivation

Marks List

Class: II BZC

S. No	Roll No.	Name of the Student	Marks
1	17-006	Abdul Bhorji	34
2	17-007	K. Muralimohan	30
3	17-051	G. Ashok Kumar	31
4	17-013	O. Rama Krishna	35
5	17-026	M. Naga Bhushanom	29
6	17-029	K. pavan kalyan	33
7	17-020	K. prasad	24
8	17-023	CH. Rahul	26
9	17-030	M. Vinay Babu	25
10	17-050	J. Rajesh	25
11	17-021	mt. Imran	25
12	17-019	P. Naveen	36
13	17-041	Y. Bhanya	32
14	17-034	P. madhuri	26
15	17-022	y. Swapha	30

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Botany

Value Added Course / Certificate Course

Title: Mushroom cultivation

Marks List

Class: II BZC

S. No	RollNo.	Name of the Student	Marks
1	17-434	G. prudhi Raja	20
2	17-428	T. Lavanya	24
3	17-422	K. Siva Rama Krishna	22
4	17-237	K. Nagarjuna	24
5	17-239	B. Rabethullah	21
6	17-231	V. Sai prathyusha	28
7	17-332	V. Janaki	40
8	17-508	V. Bhargavi	31
9	17-516	CH. Vimala Kumari	34
10	17-509	A. Vijaya Rani	34
11	17-335	M. Sundhuxa	28
12	17-331	P. pooja	27
13	17-511	L. Dharani	30
14	17-311	K. Usha Rani	29
15	17-301	K. Sathavathi	25

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Botany

Value Added Course / Certificate Course

Title: Mushroom cultivation

Marks List

Class: II BZC

S. No	Roll No.	Name of the Student	Marks
1	17-303	V. Dhahanjali	32
2	17-304	p. Keerthana	29
3	17-308	G. Lavanya	33
4	17-513	D. Deepthi	34
5	17-507	p. Naga Rani	25
6	17-520	D. Deepika	31
7	17-502	G. Sandeep	27
8	17-505	k. Tejaswi	44
9	17-503	k. mounika	40
10	17-514	y. Rushyanth	26
11	17-024	A. pavan kumar	25
12	17-424	G. y.s. pavan	20
13	17-512	Srikanth . B	27
14	17-515	T. Naga Divya	31
15	17-337	D. Haritha	36

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Botany

Value Added Course / Certificate Course

Title: Mushroom cultivation

Marks List

Class: II BZC

S. No	Roll No.	Name of the Student	Marks
1	17-525	B. Chandana	33
2	17-641	T. Kalyan Guru Datta	30
3	17-650	D. N. Mallikaisu	29
4	17-637	P. V. V. Chinnana Rao	29
5	17-643	M. Tarun Sai	31
6			
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A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Mushroom cultivation

Feed Back Form

- | | |
|--|---------------|
| 1. Is the programme interested to you | ✓
(Yes/No) |
| 2. Have you attended all the session | ✓
(Yes/No) |
| 3. Is the content of the program is adequate | ✓
(Yes/No) |
| 4. Have the teacher covered the entire syllabus? | ✓
(Yes/No) |
| 5. Is the number of hours adequate? | ✓
(Yes/No) |
| 6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? | ✓
(Yes/No) |
| 7. On the whole, is the program useful in terms of enriching your knowledge? | ✓
(Yes/No) |
| 8. Do you have any suggestions on the program? | ✓
(Yes/No) |

CH. Beulah Ranjani

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section:

Year :

Department of:

Paper:

Lecturer:

Sl. No	Roll No	Student Name	Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1	17-006	Abdul Bhari		P	A	P	P	P	A	P	P	A	P	A	P	P	A	P	10
2	17-007	K. Muralimohan		P	P	A	P	P	A	P	P	P	A	P	P	A	P	P	11
3	17-051	G. Ashok Kumar		P	A	P	P	A	P	P	P	A	P	P	P	A	P	A	10
4	17-013	O. Rama Krishna		P	P	A	P	P	A	P	P	A	P	P	A	P	P	A	10
5	17-026	M. Naga Bhushamam		A	P	P	A	P	P	P	A	P	P	P	A	P	P	P	11
6	17-029	K. pavan Kalyan		P	P	A	P	P	A	P	P	A	P	P	A	P	P	P	11
7	17-020	K. Prasad		P	P	P	P	A	P	P	P	A	P	P	A	P	P	P	12
8	17-023	CH. Rahul		P	A	P	A	P	P	P	P	P	P	A	P	P	A	P	11
9	17-030	M. Vinay Babu		P	P	P	A	P	P	A	P	P	A	P	P	P	P	P	12
10	17-050	J. Rajesh		P	P	A	P	P	P	P	P	P	A	P	P	A	P	P	13
11	17-021	md. Imran		P	A	P	A	P	A	P	A	P	P	P	A	P	P	P	10
12	17-019	P. Naveen		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
13	17-041	Y. Bharja		A	P	A	P	A	P	A	P	A	P	P	A	P	P	P	9
14	17-034	P. madhuri		P	A	P	A	A	P	A	P	P	A	P	A	P	P	P	9
15	17-022	y. Swapna		P	P	A	P	A	P	P	A	P	P	A	P	A	P	P	10

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section:

Year :

Department of:

Paper:

Lecturer:

Sl. No	Roll No	Student Name	Category	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	17-303	V. Dhananjali		P	P	A	P	P	A	P	P	A	P	P	P	P	P	A	11
2	17-304	P. Keerthana		P	A	P	A	P	P	P	P	P	A	P	P	A	A	P	10
3	17-308	G. Lavanya		P	P	A	P	P	P	P	P	P	P	P	A	P	P	P	13
4	17-513	D. Deepthi		A	P	P	P	A	P	P	A	P	P	A	P	P	P	P	11
5	17-507	P. Naga Rani		P	P	A	P	P	A	P	P	A	P	P	A	P	P	P	11
6	17-520	D. Deepika		P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	13
7	17-502	G. Sandeep		P	A	P	A	P	A	P	P	P	P	A	P	A	P	P	10
8	17-505	K. Tejaswi		P	P	P	P	A	P	P	A	P	P	P	A	P	P	P	12
9	17-503	K. mounika		P	P	A	P	P	A	P	P	P	A	P	P	P	P	P	12
10	17-514	y. Rushyanth		P	A	P	P	P	P	P	A	P	P	P	A	P	P	P	12
11	17-024	A. pavan kumar		A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	12
12	17-424	G.y.s. pavan		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
13	17-512	Srikanth B		P	A	P	P	P	A	P	P	A	P	P	P	P	P	P	12
14	17-515	T. Naga Divya		P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	13
15	17-337	D. Haritha		P	A	P	P	P	P	P	P	P	P	A	P	P	A	P	12

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Attendance Register

Class / Section:

Year :

Department of:

Paper:

Lecturer:

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1	17-525	B. Chandana		P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	14
2	17-641	T. Kalyan Guru Datta		P	A	A	P	A	A	P	P	P	P	P	P	P	P	P	11
3	17-650	D.N. Mallikalsu		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
4	17-637	P.V.V. Chinnana Rao		P	P	P	A	P	P	P	P	P	P	P	P	A	A	P	13
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6																			
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13																			

CH. Beulah Ranjani


AG & SG Siddhartha Degree College of Arts & Science (Autonomous), Vuyyuru



A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

(AUTONOMOUS)

Re Accredited with Grade 'A' by NAAC, Bangalore

VUYYURU - 521 165, Krishna Dist., A.P



Certificate

This is to certify that **P.Naveen** of **II B.A** has successfully completed the certificate course in Mushroom Cultivation organized by the department of **Botany** during the year 20 18 - 20 19 , in association with IQAC and passed the examination in grade **A**

C. B. Raju
Course Coordinator

Shave
Principal

AG & SG Siddhartha Degree College of Arts & Science (Autonomous) Vuyyuru



**A.G&S.G
SIDDHARTHA
DEGREE
COLLEGE,
VUYYURU**

**CERTIFICATE
COURSE IN
COMPETITIVE
ENGLISH**

Organized by

**DEPARTMENT
OF ENGLISH**

A.G. & S.G. Siddhartha Degree College of Arts & Science,

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade

2018-2019



DEPARTMENT OF ENGLISH

Certificate Course

Title: **COMPETITIVE ENGLISH**

Name of the Lecturer : Ms.G.Soni

Class : II DEGREE

Duration of the Course : 45 days (3-12-2018 to 4-04-2019)

Course Code : CE401C

A.G. & S.G. Siddhartha Degree College of Arts & Science,

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course Title: Competitive English

Objectives:

1. **Enhancing Language Proficiency:** The primary objective is to improve participants' overall language proficiency, including grammar, vocabulary, sentence structure, and pronunciation.
2. **Effective Communication:** The course aims to develop participants' ability to communicate effectively in English, both in written and spoken forms. This includes skills such as public speaking, group discussions, and expressing ideas clearly and coherently.
3. **Reading Comprehension:** Participants will learn strategies to comprehend and analyze complex texts quickly, which is crucial for competitive exams that involve reading comprehension sections.
4. **Grammar and Syntax:** Thorough understanding of English grammar rules and proper syntax is essential for constructing correct and coherent sentences. The course will focus on refining these aspects.
5. **Time Management:** Many competitive exams have time constraints. The course aims to improve participants' ability to read, understand, and answer questions within the given time frame.
6. **Critical Thinking:** Participants will be encouraged to think critically and analyze information presented in texts, which is valuable for answering questions that require interpretation.
7. **Exam Strategies:** The course will provide strategies and tips specific to competitive exams, such as time allocation, question selection, and how to approach different types of questions.
8. **Mock Tests and Practice:** Regular practice tests and mock exams will be conducted to simulate real exam conditions, helping participants become familiar with the format and build confidence.
9. **Interview Preparation:** For exams that include an interview round, the course may provide guidance on how to present oneself confidently and effectively during interviews.
10. **Professional Communication:** The course might cover the nuances of professional communication, including email etiquette, report writing, and business correspondence.

By focusing on these objectives, a certificate course in competitive English aims to equip individuals with the skills and confidence needed to succeed in competitive exams, interviews, and other professional contexts where strong English language proficiency is a requirement.

Outcomes:

Upon completing of certificate course in competitive English, participants can expect to achieve a variety of outcomes that will enhance their language skills, boost their confidence, and improve their performance in competitive exams and professional scenarios. Some of the key outcomes include:

1. **Enhanced Language Proficiency:** Participants will have a significantly improved grasp of English grammar, vocabulary, and syntax, leading to more accurate and coherent communication.
2. **Effective Communication Skills:** Participants will be able to communicate their ideas clearly and confidently, both in writing and speaking. This is invaluable for interviews, group discussions, and presentations.
3. **Improved Reading Comprehension:** Participants will have honed their ability to read and understand complex texts quickly, enabling them to perform well in reading comprehension sections of competitive exams.
4. **Critical Thinking Skills:** Participants will have developed the ability to analyze information critically and draw reasoned conclusions, which is essential for answering challenging questions accurately.
5. **Time Management Abilities:** Through practice, participants will have improved their time management skills, enabling them to efficiently tackle questions within the given time limits.
6. **Exam Strategies and Techniques:** Participants will have learned various strategies to approach different types of questions, increasing their chances of scoring well in competitive exams.
7. **Confidence Building:** The improved language skills and exam strategies will contribute to participants' overall confidence in their ability to excel in competitive scenarios.
8. **Mock Test Experience:** Participants will have gained exposure to mock tests and practice exams, familiarizing them with the exam format and allowing them to refine their approach.
9. **Interview Readiness:** For exams with interview rounds, participants will be better prepared to articulate themselves effectively and confidently during interviews.
10. **Certificate of Completion:** Participants will receive a certificate at the end of the course, validating their achievement and indicating their improved language proficiency.

Overall, the outcomes of a certificate course in competitive English are designed to empower participants with the skills, knowledge, and confidence needed to excel in competitive exams, interviews, and various professional communication scenarios where strong English language skills are essential.

Methodology: Teacher assisted learning Course

A.G. & S.G. Siddhartha Degree College of Arts & Science,

Vuyyuru-521165, Krishna District, Andhra Pradesh

Accredited at 'A' Grade by NAAC

CERTIFICATE COURSE IN COMPETITIVE ENGLISH

Semester – IV

CURRICULUM AND CONTENTS

Unit I Vocabulary Usage

- Synonyms
- Antonyms
- Cloze Test
- One Word Substitution
- Verbal Analogies

Unit II Comprehension Ability

- Comprehension – I
- Comprehension – II
- Theme Detection
- Deriving Conclusions From Passages

Unit III Selecting Words/Phrases

- Sentence Completion
- Passage Completion
- Choosing The Appropriate Filler

Unit IV Error Detection

- Common Errors – How To avoid Them
- Spotting Errors
- Sentence Improvement
- Passage Correction
- Choosing The Correct/Incorrect Sentence

Unit V Rearrangement

- Reconstruction of Sentences
- Rearrangement of Sentences in a paragraph
- Reconstruction of Paragraph
- Rearrangement of Jumbled Parts
- Word Formation

Unit VI General Usage

- Idioms and Phrases
- Active and Passive Voice
- Direct and Indirect Speech

COMPETITIVE ENGLISH

CHAPTER-WISE DETAILS

- 1. ACTIVE / PASSIVE VOICE**
- 2. DIRECT / INDIRECT SPEECH (CHANGE OF SPEECH)**
- 3. ANTONYMS**
- 4. SYNONYMS**
- 5. ONE WORD SUBSTITUTION**
- 6. IDIOMS & PHRASES**
- 7. SPOTTING ERRORS (COMMON ERRORS)**
- 8. ORDERING OF SENTENCES (SEQUENCE)**
- 9. SELECTING WORDS**
- 10. VERBAL ANALOGIES**
- 11. CLOZE TEST**
- 12. FILL IN THE BLANKS (PHRASE REPLACEMENT)**
- 13. PARA JUMBLES**
- 14. READING COMPREHENSION**
- 15. FILL IN THE BLANKS WITH APPROPRIATE WORD**
- 16. PARAGRAPH FORMATION**

A.G&S.G.SIDDHARTHA DEGREE COLLEGE, VUYURU

CERTIFICATE COURSE IN COMPETITIVE ENGLISH

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25.	II-B.Sc(MPC)	17-649	Ch. Jyoti Sai
26.	II-B.Sc(MPC)	17-658	G. Radhavya
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A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYURU
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COMPETITIVE ENGLISH	IV SEMESTER	2018-2019	B.A,B.Com & B.Sc
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INTERNAL ASSESSMENT
QUESTION PAPER FOR BATCH-I&II

Max Marks: 50

Awarded Marks:

Time: 1 hr

Date: 19-02-2019

I. Read the passage carefully and choose the best answer to each question out of the four alternatives. 5M

The United Nations Fourth World Women's Conference had a colourful start at Beijing on September 4th. This is the century's most crucial conference which aimed at changing the status quo of women's lives characterized by inequality. In a preliminary session Ms. Aung Suu Kyi the Nobel Peace Prize winner said that expanding women's power will bring greater peace and tolerance to the world. "It is not the prerogative of men alone to bring light to this world. Women with their capacity for compassion and self-sacrifice with their courage and perseverance have done much to dissipate the darkness of intolerance and hate" said Ms. Suu Kyi. In the afternoon session Ms. Ayako Yamaguchi a Japanese delegate launched a petition against beauty pageants. "What right do men have to evaluate women in a few minutes? All women are beautiful. Beauty is something different for everyone" Ms. Ayako Yamaguchi said. "Beauty contests are used as trade and exploitation. The training is very vigorous but it is the organizers not the women who get the full benefit" said Ms. Ranjana Bhargava. "After the competition the women become trapped and the abuse and the bad things begin. The women are tainted no one else will accept them".

1. The Women's World Conference was very important because__

- (a) Ms. Aung Suu Kyi has just been awarded the prestigious Nobel Peace Prize.
- (b) Ms. Aung Suu Kyi was taking part in the Conference.
- (c) its main purpose was to change inequalities between men and women.
- (d) it was to protest against beauty contests.

2. Which of the following arguments of Ms. Aung Suu Kyi is not true?__

- (a) Women also can bring greater peace to the world.
- (b) Men cannot claim they have done more for peace.
- (c) Women have the capacity for compassion and sacrifice.
- (d) Men have done nothing to dissipate ignorance.

3. The main emphasis in Ms. Ayako Yamaguchi's argument is__

- (a) men have no right to judge women.
- (b) men should be given more time to evaluate women.
- (c) all women are beautiful in a way.
- (d) beauty contests are not necessary.

4. "Beauty is something different for everyone". This statement means__

- (a) beauty is certainly different from ugliness.
- (b) beautiful women do not mingle with other women.
- (c) beauty cannot be defined adequately
- (d) each woman is beautiful.

5. "Colourful start" in the first sentence refers to__

- (a) participants who were all beautiful.
- (b) a lot of excitement and cheerfulness in the conference hall.
- (c) absence of black coloured girls.
- (d) flags of various colours outside the conference hall.

II. Read the passage carefully and choose the best answer to each question out of the four alternatives. 5M

A reason why people at school read books is to please their teacher. The teacher has said that this that or the other is a good book and that it is a sign of good taste to enjoy it. So a number of boys and girls anxious to please their teacher get the book and read it. Two or three of them may genuinely like it for their own sake and be grateful to the teacher for putting it in their way. But many will not honestly like it or will persuade themselves that they like it. And that does a great deal of harm. The people who cannot like the book run the risk of two things happening to them either they are put off the idea of the book-let us suppose the book was David Copperfield-either they are put off the idea of classical novels or they take a dislike to Dickens and decide firmly never to waste their time on anything of the sort again or they get a guilty conscience about the whole thing they feel that they do not like what they ought to like and that therefore there is something wrong with them. They are quite mistaken of course. There is nothing wrong with them. The mistake has all been on the teacher's side. What has happened is that they have been shoved up against a book before they were ready for it. It is like giving a young child food only suitable for an adult Result indigestion violent stomach-ache and a rooted dislike of that article of food evermore.

1. The passage is about what _____

- (a) we should do to make children read.
- (b) we should not do when we ask children to read.
- (c) teachers should teach in the classroom.
- (d) treatment is to be given for indigestion.

2. The writer says that teachers should _____

- (a) prevent children from reading any book.
- (b) compel children to read moral stories.
- (c) stop compelling children to read books recommended by them.
- (d) carefully supervise what children read.

3. According to the author many boys and girls read books to _____

- (a) win the favour of their teachers.
- (b) spend money in a useful way.
- (c) express their gratitude to their teachers.

(d) show others that they are lovers of books.

4. The mistake has been on the teacher's side.

Here the mistake refers to _____

- (a) making the children to please the teacher.
- (b) asking the children to read books which teachers do not like.
- (c) discouraging children from reading more books.
- (d) recommending them the books intended for adults.

5. Indigestion and violent stomach-ache will be the result if the child _____

- (a) reads books not suitable for his age
- (b) does not read any book.
- (c) is forced to eat food meant for adults.
- (d) is not taken to doctor regularly.

III. Rearrange the following sentences in proper sequence. 5M

1. A Study to this effect suggests that the average white-collar worker demonstrates only about 25% listening efficiency.
2. However for trained and good listeners it is not unusual to use all the three approaches during a setting, thus improving listening efficiency.
3. There are three approaches to listening: Listening for comprehension, Listening for empathy and Listening for evaluation.
4. Although we spend nearly half of each communication interaction listening, we do not listen well.
5. Each approach has a particular emphasis that may help us to receive and process information in different settings.

ANS: _____

IV. Rearrange the following sentences in proper sequence. 5M

1. Its current was very powerful and could take away big tree trunks.
2. There were some children, playing on the bank of waterway
3. In the forest of Madhubani, there is big lake.
4. The excess water started flowing forcefully through the waterway.
5. Once there was a very heavy rain because of which the lake started overflowing.
6. A poor man noticed it and rushed to save them.

ANS: _____

V. Choose another pair from the following with the same relationship. $\frac{1}{2} \times 10 = 5M$

1. poetry : rhyme :: philosophy : _____
a. imagery b. music c. bi-law d. theory
2. jibe : praise :: _____ : enlighten
a. jib b. delude c. worship d. wed
3. marshal : prisoner :: principal : _____
a. teacher b. president c. doctrine d. student
4. alphabetical : _____ :: sequential : files
a. sort b. part c. list d. order
5. monarch : _____ :: king : cobra
a. queen b. butterfly c. royal d. venom
6. pan : _____ :: ban : judge
a. band b. critic c. author d. lawyer
7. somnolent : nap :: truculent : _____
a. sleepwalker b. journey c. war d. mood
8. _____ : play :: sing : anthem
a. act b. scene c. theater d. field
9. mouse : _____ :: flash : camera
a. rat b. computer c. cord d. dessert
10. scrub : wash :: sob : _____
a. cry b. water c. sad d. tease

VI. Out of the four alternatives, choose the one which can be substituted for the given words/sentence. $\frac{1}{2} \times 20 = 10M$

1. Call upon God or any other power (like law) etc. for help or protection ____
(a) Invocation
(b) Involution
(c) Inundation
(d) Revocation
2. Words written on a tomb ____
(a) Epithet
(b) Epigraph
(c) Soliloquy
(d) Epitaph
3. One who can think about the future with imagination and wisdom ____
(a) Dreamer
(b) Seer
(c) Idealist
(d) Visionary
4. Science of the races of mankind ____
(a) Genealogy
(b) Epistemology
(c) Ethnology
(d) Sociology
5. Concluding part of a literary work ____
(a) Epilogue
(b) Bibliography
(c) Soliloquy
(d) Episode
6. A paper written by hand ____
(a) Handicraft
(b) Handiwork
(c) Manuscript
(d) Thesis
7. One who does not make mistake ____
(a) Pessimist
(b) Optimist
(c) Infallible
(d) Hypocrite
8. Group of people living together in the same locality ____
(a) Neighborhood
(b) Crowd
(c) Community
(d) Public
9. A proficient public speaker ____
(a) Curator
(b) Orator
(c) Narrator
(d) Arbitrator
10. At one's beck and call ____
(a) to attend a call
(b) to be helped by someone
(c) to be useful to someone
(d) to be dominated by someone
11. As the bomb exploded people ran helter-skelter ____
(a) in great fear
(b) in disorderly haste
(c) in haste
(d) in great sorrow
12. Loss Of memory ____
(a) Ambrosia
(b) Amnesia
(c) Insomnia
(d) Forgetting
13. As usual he is blowing his own trumpet ____
(a) refusing to use anybody else's trumpet
(b) playing a tune on the trumpet
(c) praising himself
(d) praising himself and others
14. To call it a day ____
(a) to conclude proceedings
(b) to initiate proceedings
(c) to work through the day
(d) None of the above
15. He is always praised for his gift of the gab ____
(a) being lucky
(b) getting something free
(c) talent for speaking
(d) great skill
16. Fear of being enclosed in a small closed space ____
(a) Agoraphobia
(b) Claustrophobia
(c) Xenophobia
(d) Paranoia
17. One who hates mankind ____
(a) Philanthropist
(b) Terrorist
(c) Misanthrope
(d) Misogynist

18. One who walks on ropes ____
 (a) Funambulist
 (b) Upholsterer
 (c) Acrobat
 (d) Aviator

19. The study of the origin and history of words ____
 (a) Linguistics
 (b) Etymology
 (c) Verbose
 (d) Anthology

20. A person who breaks into a house in order to steal ____
 (a) Poucher
 (b) Bandit
 (c) Intruder
 (d) Burglar

VII. Choose the word **opposite in meaning** to the word given in bold. 5X $\frac{1}{2}$ =2 $\frac{1}{2}$ M

- | | | |
|--|---|--|
| 1. PRUDENT ____
(a) silly
(b) unwise
(c) idiotic
(d) poor | (d) cry
3. RELUCTANTLY ____
(a) pleasingly
(b) willingly
(c) satisfactorily
(d) happily | (c) indefinite
(d) declan
5. AGONY ____
(a) pleasure
(b) laughter
(c) bliss
(d) ecstasy |
| 2. LAMENT ____
(a) rejoice
(b) rejuvenate
(c) complain | 4. CAPRICIOUS ____
(a) firm
(b) fickle | |

VIII. Choose the word **similar in meaning** to the word given in bold. 5X $\frac{1}{2}$ =2 $\frac{1}{2}$ M

- | | | |
|--|--|--|
| 1. AMICABLE ____
(a) poisonous
(b) friendly
(c) satisfying
(d) heartening | 3. CONVICT ____
(a) adventurer
(b) fugitive
(c) criminal
(d) impostor | (c) kindness
(d) vision
5. STUBBORN ____
(a) timid
(b) arrogant
(c) adamant
(d) angry |
| 2. SUPERSTITIOUS ____
(a) pious
(b) traditional
(c) irrational
(d) vision | 4. BENEVOLENCE ____
(a) ill-will
(b) morbidity | |

IX. In these questions A&B, the first and last sentence of the passage is numbered 1 and 6. The rest of the passage is split into four parts and named P, Q, R, S. These four parts are not given in proper order. Read the sentences and find out which of the four combinations is correct. 5X2=10M

A.

1. Most people are afraid of snakes.
 P. There may be some truth in this theory, because Monkeys have a deep, instinctive fear of pythons and other tree snakes.
 Q. But this fear is as irrational as the fear of ghosts.
 R. Anyway, snakes have been feared and hated for thousands of years.
 S. The fear of snakes, according to some biologists, may be an instinct passed on to us by our ancestors.
 6. In the literature of many countries the snake is regarded as a symbol of evil.
 (a) PQRS (b) QPSR (c) RQSP (d) QSPR

Ans : ____

B.

1. I was in awe of Einstein and hesitated before approaching him about some ideas had been working on.
 P. I entered his office and found him seated at a table, calculating and smoking his pipe.
 Q. When I finally knocked on his door, a gentle voice said, 'come'.
 R. The single word was both a welcome and a question.
 S. Dressed in ill fitting clothes, his hair characteristically awry, he smiled a warm welcome.
 6. His utter naturalness at once set me at ease.
 (a) QPRS (b) QRPS (c) PQRS (d) SRQP

Ans : ____

NAME: _____ CLASS: _____ ROLLNO: _____

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COMPETITIVE ENGLISH	IV SEMESTER	2018-2019	B.A,B.Com & B.Sc
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EXTERNAL ASSESSMENT
QUESTION PAPER FOR BATCH-I&II

Max Marks: 50
Awarded Marks:

Time: 2 hrs
Date: 04-04-2019

I. **Directions:** In the following questions the sentences have been given in **Active/ Passive Voice**. From the given alternatives choose the one which best expresses the given sentence in **Passive/Active Voice**.

5M

Q1.The principal kept the staff members waiting.

- (a) The staff members are kept waiting for the principal.
- (b) The staff members were kept waiting by the principal.
- (c) The staff members were being kept waiting by the principal.

Q2.The government has granted him a scholarship.

- (a) A scholarship has granted to him by the government.
- (b) He has been granted a scholarship by the government.
- (c) He has granted a scholarship by the government.

Q3.The telegraph wires have been cut.

- (a) Someone has been cut the telegraph wires.

(b) The telegraph wires have cut someone.

(c) Someone has cut the telegraph wires.

Q4.They pick the flowers fresh every morning.

- (a) The Fresh flowers are pickod every morning by them.
- (b) The flowers are fresh and picked every morning by them.
- (c) The flowers are picked fresh every morning by them.

Q5.The reporter was interviewing the political leaders.

- (a) The political leaders were being interviewed by the reporter.
- (b) The political leaders were be being interviewed by the reporter.
- (c) The political leaders are being interviewed by the reporter.

II. **Directions:** In the following questions, a sentence has been given in **Direct/Indirect Speech**. Out of the four alternatives suggested, select the one which best expresses the same sentence in **Indirect/Direct Speech**.

5M

Q1.He said to the interviewer, "Could you please repeat the question?"

- (a)He requested the interviewer if he could please repeat the question.
- (b)He requested the interviewer to please repeat the question.
- (c)He requested the interviewer to repeat the question.
- (d)He requested the interviewer if he could repeat the question

Q2.I said to him, "Where have you lost the pen I brought for you yesterday?"

- (a)I asked him where he had lost the pen I had brought him yesterday.
- (b)I asked him where he had lost the pen I have brought for him the previous day
- (c)I asked him where he had lost the pen I had brought for him the previous day.
- (d)I asked him where had he lost the pen I had brought him the previous day.

Q3. I said, "Father, when will you buy me a motor cycle?"

- (a) I asked my father when will he buy me a motorcycle.
- (b) I asked my father when he will buy me a motor cycle.
- (c) I asked my father when would he buy me a motor cycle.
- (d) I asked my father when he would buy me a motor cycle.

Q4. "Many happy returns of your birthday", we said

- (a) We greeted him on his birthday.

(b) We said that many happy returns of your birthday.

(c) We wished him many happy returns of his birthday.

(d) We prayed for many happy returns of his birthday.

Q5. The police said to the thief, "Don't move."

- (a) The police ordered the thief not to move.
- (b) The police ordered the thief that he should not move.
- (c) The police told the thief that he did not move.
- (d) The police ordered to the thief to not move.

III. Choose the word **opposite in meaning** to the word given in bold.

10X¹/₂=5M

Q1. OBSCENE

- (a) disobedient
- (b) decent
- (c) dislocate
- (d) cautious

Q2. ORTHODOX

- (a) Revolutionary
- (b) Heretical
- (c) Anarchist
- (d) generous

Q3. AMBIGUOUS

- (a) concealed
- (b) precise
- (c) complete
- (d) magnified

Q4. KEEN

- (a) blunt
- (b) foolish
- (c) insipid
- (d) plain

Q5. INVINCIBLE

- (a) Small
- (b) Invisible
- (c) Vulnerable
- (d) reachable

Q6. MAMMOTH

- (a) quiet
- (b) significant
- (c) huge

(d) small

Q7. AUTONOMOUS

- (a) self-government
- (b) dependent
- (c) defensive
- (d) neutral

Q8. EXAGGERATE

- (a) underwrite
- (b) understate
- (c) ignore
- (d) condemn

Q9. CONTROVERSIAL

- (a) indisputable
- (b) restrained
- (c) controlled
- (d) appeasing

Q10. CALLOUS

- (a) rude
- (b) Insensitive
- (c) indifferent
- (d) Sympathetic

IV. Choose the word **similar in meaning** to the word given in bold.

10X $\frac{1}{2}$ =5M

Q1. INCESSANTLY

- (a) continuously
- (b) inevitably
- (c) regularly
- (d) indiscreetly

Q2. COLOSSAL

- (a) gigantic
- (b) colourful
- (c) beautiful
- (d) fantastic

Q3. DUBIOUS

- (a) doubtful
- (b) disputable
- (c) duplicate
- (d) dangerous

Q4. ACRONYM

- (a) A word with two or more meanings

(b) A word of new coinage

- (c) A word formed by the initial letters of words
- (d) A word of picturesque effect

Q5. ANTIPATHY

- (a) dishonesty
- (b) disturbance
- (c) demonstration
- (d) dislike

Q6. PHILANTHROPIST

- (a) benefactor
- (b) beneficiary
- (c) matron
- (d) sponsor

Q7. EXOTIC

- (a) alien
- (b) strange

(c) rare

- (d) grand
- Q8. KNAVE**
- (a) emperor
 - (b) enchanter
 - (c) soldier
 - (d) scoundrel

Q9. COARSE

- (a) academic
- (b) grain
- (c) rough
- (d) training

Q10. OSTRACISE

- (a) banish
- (b) belittle
- (c) beguile
- (d) besiege

V. Out of the four alternatives, choose the one which can be substituted for the given words/sentence.

10X $\frac{1}{2}$ =5M

Q1. A written statement about someone's character, usually provided by an employer

- (a) Testimonial
- (b) Memorandum
- (c) Certificate
- (d) License

Q2. A small room in a big house, hotel, ship etc. where glasses, dishes, spoons, food etc. are kept.

- (a) Portico
- (b) Pantry
- (c) Mezzanine
- (d) Kitchen

Q3. Place where wine is made

- (a) Bakery
- (b) Cloakroom
- (c) Tannery
- (d) Brewery

Q4. A paper written by hand

- (a) Handicraft
- (b) Handiwork
- (c) Manuscript
- (d) Thesis

Q5. A remedy for all diseases

- (a) Narcotic
- (b) Antiseptic
- (c) Tonic
- (d) Panacea

Q6. The study of ancient civilizations

- (a) History
- (b) Anthropology
- (c) Ethnology
- (d) Archaeology

Q7. Animal that feeds on plants

- (a) Carnivorous
- (b) Herbivorous

- (c) Insectivorous
- (d) Graminivorous

Q8. The absence of law and order

- (a) Rebellion
- (b) Mutiny
- (c) Revolt
- (d) Anarchy

Q9. Something kept as a reminder of an event

- (a) Trophy
- (b) Souvenir
- (c) Prize
- (d) Antique

Q10. An established principle of practical wisdom

- (a) Marxism
- (b) Maxim
- (c) Neologism
- (d) Platonism

VI. Directions: In the following questions, four alternatives are given for the **Idiom/Phrase** printed in bold in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase.

10X $\frac{1}{2}$ =5M

Q1. Wear and tear

- (a) a brand name
- (b) damage
- (c) lot of sorrow
- (d) a warning

Q2. The two famous writers crossed swords with each other on every issue.

- (a) fought physically
- (b) crossed the road on meeting

- (c) took different routes
- (d) disagreed

Q3. George Bernard Shaw was blessed with the gift of the gab.

- (a) enormous wealth

- (b)ability to work hard
- (c)ability to speak impressively
- (d)luck on one's side

Q4. Some people do not grease anybody's palm on any account.

- (a)bribe
- (b) flatter
- (c) cheat
- (d) fight

Q5. Having no arguments to defend his point, the speaker began to beat about the bush.

- (a)wander across the words
- (b)speak in a haphazard manner
- (c)speaking a round-about manner

- (d)make use of irrelevant reference

Q6. The Kenyan team proved to be the dark horse in the ICC World Cup Cricket.

- (a)a strong intruder
- (b)a skilled team
- (c)the most powerful
- (d)an unexpected winner

Q7. A little gush of gratitude

- (a)gradual recovery
- (b)friendly feeling
- (c)excessive labour
- (d)excessive enthusiasm

Q8. To lose ground

- (a)to become less powerful
- (b)to become less popular
- (c)to lose foundation

- (d)to be without a leader

Q9. To fall back on

- (a)to oppose something important
- (b)to suffer an injury on the back in an accident
- (c)to fail to do something important in time
- (d)to seek support out of necessity

Q10. Most parents find it difficult to make both ends meet because of inflation.

- (a)to lead a lavish life
- (b)to live within one's income
- (c)to live a miserly life
- (d)to lead an active life

VII. Directions: In the following passages (A&B) there are blanks, each of which has been numbered. Against each number, five words are suggested, one of which fits the blank appropriately. Find out the appropriate word in each case.

Most of us are (___1___) of open conflict and avoid it if we can. And there is a (___2___) to expressing and working through conflict. If the working through involves harsh words and name-calling people feel deeply hurt and relationships can be (___3___). Sometimes permanently. Some group members may be afraid that if they really (___4___) their anger, they may go out of control and become violent, or they may do this. These fears can be very (___5___) and based on experience. So why take the risk? Why not avoid conflict at all costs? Conflict is rather like disease (___6___) is best, that means attuning to areas where (___7___) may occur before they become an issue. If you have, not (___8___) a conflict happening, your next choice is to treat it early, or hope that it goes away. If it goes away over time fine. If it (___9___), then you will still have to handle (treat) it and it is likely to be more (___10___).

Q1.

- (a) scared
- (b) careful
- (c) reckless
- (d) aware
- (e) worried

Q2.

- (a) challenge
- (b) measure
- (c) principle
- (d) chance
- (e) risk

Q3.

- (a) established
- (b)maligned
- (c)damaged
- (d) rebuilt
- (e) involved

Q4.

- (a) sublimate
- (b) express
- (c) minimize

- (d) regulate

- (e) control

Q5.

- (a) baseless
- (b) imaginary
- (c)exaggerative
- (d)real

- (e) national

Q6.

- (a) cure
- (b) diagnosis
- (c)prescription
- (d)prevention

- (e) medicine

Q7.

- (a) harmony
- (b) discomfiture
- (c)disagreement
- (d)consensus
- (e) statement

Q8.

- (a) expressed
- (b) ignored
- (c) induced
- (d) seen
- (e)perverted

Q9.

- (a) doesn't
- (b) wont
- (c) don't
- (d) not
- (e)hasnt

Q10.

- (a) credible
- (b) serious
- (c) fraudulent
- (d) urgent
- (e)skilled

10X $\frac{1}{2}$ =5M

A. On October 2, 1983 the Grameen Bank Project (1) the Grameen Bank, We invited the Finance Minister to be the Chief Guest at our (2) ceremony. But when the Ministry came to (3) that the ceremony would take place in a remote district, they said it would not be an (4) place to launch a Bank and that the ceremony should be (5) in Dhaka so that all the top Government Officials could (6). We stood firm and (7) to them that we did not work in urban areas so it made no (8) to have the ceremony in a city (9) we had no borrowers. We had the ceremony in a big open field with the Finance Minister present as Chief Guest. For all of us who had worked so hard to (10) this it was a dream come true.

10X $\frac{1}{2}$ =5M

Q1.

- (a) became
- (b) reorganised
- (c) merged
- (d) named
- (e) converted

Q2.

- (a) Induction
- (b) opening
- (c) closing
- (d) dedicated
- (e) Inaugurate

Q3.

- (a) acquaint
- (b) reveal
- (c) know
- (d) aware
- (e) inform

Q4.

- (a) obvious
- (b) excellent
- (c) available
- (d) inauspicious
- (e) appropriate

Q5.

- (a) held
- (b) invited
- (c) assembled
- (d) done
- (e) shifted

Q6.

- (a) entertain
- (b) present
- (c) accompany
- (d) attend
- (e) involve

Q7.

- (a) refused
- (b) apologised
- (c) told
- (d) explained
- (e) denied

Q8.

- (a) point
- (b) difference
- (c) sense
- (d) difficulty
- (e) meaning

Q9.

- (a) which
- (b) where
- (c) while
- (d) that
- (e) however

Q10.

- (a) perform
- (b) obey
- (c) achieve
- (d) discover
- (e) built

VIII. Directions: In the following questions, a sentence/ part of the sentence is printed in bold. Below are given alternatives which may **improve** the bold part. Choose the correct alternative. In case no improvement is needed, your answer shall be 'No Improvement'.

20X $\frac{1}{2}$ =10M

Q1.It took a long time for him to realise, **what was truth.**

- (a)what is truth.
- (b)what was the truth.
- (c)what the truth was
- (d)No Improvement

Q2.The flood affected people are **looking forward with** the visit of the Governor.

- (a)looking forward to
- (b)looking forward on
- (c)looking forward for
- (d)No improvement

Q3.He is fond of **saving** money.

- (a)hoarding
- (b)not spending
- (c)spending carefully
- (d)No improvement

Q4.He **backed out of** the agreement.

- (a)gave his full support
- (b)reconsidered the point
- (c)withdrew his support from
- (d)went through the back door

Q5.If I **am** the P.M. I would ban all processions.

- (a)will be
- (b)were
- (c)am
- (d)No improvement

Q6.Its high time that you **go** home.

- (a)have gone
- (b)should go
- (c)went
- (d)No improvement

Q7.**Will** you type these letters now ?

- (a)Could
- (b)Can
- (c)Shall
- (d)No improvement

Q8.The traveller **commanded of** the peasant **he would** tell him the way to the nearest village.

- (a)exclaimed of the peasant if he would
- (b)enquired of the peasant if he could
- (c)replied of the peasant whether he will
- (d)No improvement

Q9.When we saw him last, he **ran** to catch a bus.

- (a)has run
- (b)was running
- (c)had inn
- (d)No improvement

Q10.He suddenly struck **a note of discord** in his otherwise harmonious presentation.

- (a)unhappiness
- (b)regret
- (c)anger
- (d)No improvement

Q11.Americans do not object **my calling them** by their first names.

- (a)my calling the
- (b)to my calling them
- (c)been called
- (d)No Improvement

Q12.**I hope that** I shall get a First Class.

- (a)I feel that
- (b)I hope
- (c)I am doing
- (d)No improvement

Q13.They **only work when** they have no money.

- (a)When they have no money, they only work.
- (b)they only work
- (c)work only when.
- (d)No improvement.

Q14.By this time tomorrow, I **will reach** my home.

- (a)will be reaching
- (b)shall have reached
- (c)can reach
- (d)No improvement

Q15.India will enter the league of major developed nations as a space **giant** within a short time.

- (a)energy
- (b)force
- (c)power
- (d)No improvement

Q16.**Many a man** would welcome the opportunity.

- (a)Many man
- (b)A many man
- (c)Many men
- (d)No improvement

Q17.The greater the demand **higher** the price.

- (a)High
- (b)the high
- (c)the higher
- (d)No improvement

Q18.**I prefer to ride than to walk.**

- (a)riding to walking
- (b)ride to walk
- (c)riding than walking
- (d)No Improvement

Q19.God has **bestowed man** unusual gifts.

- (a)bestowed with man
- (b)bestowed for man
- (c)bestowed on man
- (d)No improvement

Q20.For me, money is **only the means** to an end.

- (a)only means
- (b)only the mean
- (c)only a means
- (d)No improvement

ADUSUMILLI GOPALA KRISHNAIAH AND SUGAR CANE GROWERS SIDDHARTH
DEGREE COLLEGE OF ARTS AND SCIENCE, VUYYURU
AUTONOMOUS Accredited at Grade 'A' (3.05/4.00) by NAAC

DEPARTMENT OF ENGLISH
CERTIFICATE COURSE IN COMPETITIVE ENGLISH

BATCH : I

MARKS LIST

Roll No	Name of the Student	Internal Marks(50)	External Marks(50)	Total	Pass/ Fail
17-162	G.Sampath Kumar	ABSENT	11	11	Fail
17-170	V.Kalyan	16	14	30	Fail
17-234	K.Sailaja	18	36	54	
17-412	S.Bala Durga Bhavani	15	41	56	
17-413	V.Nagamani	16	38	54	
17-421	M.Meghana	22	12	34	Fail
17-431	D.Parameswari	13	28	41	
17-615	N.Vijaya Lakshmi	13	28	41	
17-617	V.Divya	22	39	61	
17-629	N.Jhansi Prasanna	9	42	51	
17-634	V.Rasiveni	27	35	62	
17-637	S.Tapaswi	12	22	34	Fail
17-639	P.Janu	15	18	33	Fail
17-651	G.Jwalitha	15	42	57	
17-652	G.Rama Devi	17	45	62	
17-657	G.Rama	19	40	59	
17-701	Y.Sravani	19	28	47	
17-702	K.Bhargavi	13	30	43	
17-703	A.Pooja Sri	21	23	44	
17-708	Ch.Hudvitha	21	23	44	
17-709	K.Naga Pushpa Latha	17	21	38	Fail
17-727	E.Naga Suritha Devi	18	31	49	
17-734	K.Srinath	21	24	45	

Course Duration : 45 days (Hours)

No.of students enrolled in Batch - I : 23

Commencement of Classes: 3-12-2018

Date of Internal Exam conducted :9-1-2019

Date of External Exam conducted :4-4-2019


Coordinator


H.O.D


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BATCH : II

MARKS LIST

Roll No	Name of the Student	Internal Marks(50)	External Marks(50)	Total	Pass/ Fail
17-013	O.Rama Krishna	15	12	27	Fail
17-045	Ch.Sekhar Babu	ABSENT	ABSENT	0	Fail
17-236	Abdul Shabana Sultana	28	38	66	
17-403	M.Aparna	24	35	59	
17-404	Abdul Fathima	17	36	53	
17-405	K.Naga Sudha	17	29	46	
17-406	K.Ramya	24	35	59	
17-407	K.Anusha	28	31	59	
17-408	P.Rajya Lakshmi	11	17	28	Fail
17-410	Md.Naseema	28	36	64	
17-416	P.K.S.Subhasini	23	27	50	
17-420	D.Ramya Sai	22	39	61	
17-434	G.Prudhvi Raja	28	37	65	
17-602	V.Tejasri	20	29	49	
17-603	G.Sai Tejaswi	21	19	40	
17-623	G.Sireesha	17	20	37	Fail
17-718	P.Bhanu Sri	19	32	51	
17-739	K.Teja Kiran	26	23	49	
17-818	E.Naga Bhanusri	27	28	55	
17-835	D.Venkata Lakshmi	17	24	41	

Course Duration : 45 days (Hours)

No.of students enrolled in Batch -II : 20

Commencement of Classes: 21-1-2019

Date of Internal Exam conducted :19-2-2019

Date of External Exam conducted :4-4-2019


Coordinator


H.O.D


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**ADUSUMILLI GOPALAKRISHNAIAH
& SUGARCANE GROWERS SIDDHARTHA COLLEGE OF ARTS & SCIENCE**

(AUTONOMOUS), VUYYURU

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DEPARTMENT OF ENGLISH

Certificate of Completion

This certificate is awarded to

Mr / Ms G. Sireesha, II BSc (CS)

for having successfully completed and fulfilled the requirements of the course for

Competitive English (English for Professional Success)

Course Duration: 45 days (from 3rd December 2018 to 4th April 2019)

given at English Language Laboratory, AG&SG SIDDHARTHA COLLEGE, VUYYURU

on 10th June, 2019


(G.SONI)

COURSE INSTRUCTOR




(G.SONI)

HEAD, DEPT OF ENGLISH
A.G&S.G.S COLLEGE, VUYYURU



(Dr.D.BALA KRISHNA)

PRINCIPAL
A.G&S.G.S COLLEGE, VUYYURU

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Mr / Ms P. Rajya Lakshmi of II B.Sc (EM)

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given at English Language Laboratory, AG&SG SIDDHARTHA COLLEGE, VUYYURU

on 10th June, 2019


(G. SONI)

COURSE INSTRUCTOR




(G. SONI)

HEAD, DEPT OF ENGLISH
A.G&S.G.S COLLEGE, VUYYURU


(Dr. D. BALA KRISHNA)

PRINCIPAL
A. G&S. G. S COLLEGE, VUYYURU

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(AUTONOMOUS), VUYYURU**



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Mr / Ms G. Sampath Kumar of II B.Com

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Competitive English (English for Professional Success)

Course Duration: 45 days (from 3rd December 2018 to 4th April 2019)

given at English Language Laboratory, AG&SG SIDDHARTHA COLLEGE, VUYYURU

on 10th June, 2019


(G.SONI)

COURSE INSTRUCTOR




(G.SONI)

HEAD, DEPT OF ENGLISH
A.G&S.G.S COLLEGE, VUYYURU



(Dr.D.BALA KRISHNA)

PRINCIPAL
A.G&S.G.S COLLEGE, VUYYURU



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Siddhartha Degree College of Arts and Science
Autonomous College :: Aided College of Govt. of AP
NAAC 'A' Grade College
Vuyyuru, Krishna (Dt),Andhra Pradesh-521165**

CERTIFICATE COURSE

TITLE: INTRODUCTION TO MEDIA MANAGEMENT

CC CODE: MMT001

On 03- 12-2018 to 11-1-2019

Duration of the Course: 30DAYS

Organized By

Department of Telugu



A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF TELUGU

Certificate Course

Title: Introduction to media management

2018-19

Name of the Lecturer	:	smt. M.LS Kumari
Class	:	II B.A/ B.Com/B.Sc
Duration of the Course	:	30 Days (03-12-2018 to 11-1-2019)
CC Code	:	MMT001

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title : Introduction to Media Management

Date: 03-12-2018 to 11-01-2019

Date	Content	Module No.
3.12.2018 To 10.12.2018	Introduction,Importance of media management,personal manag ment,media Training	I
11.12.2018 To 17.122018	Skiledl labour Problems ,trade unions,external focus in management,co-ordination between various branches of medium	II
18.12.2018 To 26.12.2018	Inter relations between various media security arrangements in media centors,problems of quality control,Influence of Government on production and broadcasting	III
27.12.2018 To 11.01.2019	Review by public and servise organisations ,Internal arrangements in broadcasting radio and television	IV

Introduction to Media Management

Introduction

The truth is that nobody really knows – yet. The only thing that's absolutely certain is that the old certainties have gone for good. The BBC was designed in the 1920s on the pattern of the British civil service to run a monopoly. If it had stayed that way, it would now be as dead as the dodo. As will be any broadcasting organisation which fails to adapt to the new media environment.

There's no market more dynamic and fast-moving than that of the media. New technologies – and convergence among existing ones – are causing monumental shifts both in consumer behaviour and in the potential for content providers and distributors. Some will emerge as big winners; but the actual take-up by consumers is by no means universally assured and is constantly changing.

As digital technology brings with it a previously unimaginable proliferation of media outlets, the audience share of any individual broadcaster must inexorably fall. The figures are already a fraction of what they were even ten years ago: programmes once watched by 15 or 20 million viewers are now lucky to attract five million and the figures are still falling. In fact, in this new media world, to speak of broadcasting in its traditional sense may become an anachronism.

Though people are still spending a lot of time in front of their screens, they're devoting much less of it to viewing broadcast schedules. In 2006, internet use in Britain exceeded broadcast television viewing for the first time; at the time of writing, Google's UK advertising revenue has already overtaken that of the terrestrial commercial television channels.

So content providers are increasingly integrating terrestrial transmission with satellite, cable, broadband and telephony. And with print: the web-sites of newspapers are increasingly indistinguishable from those of broadcasters; which raises interesting questions for regulators in countries where, historically, the regulatory regimes for the two means of publishing are significantly different.

For broadband distribution of similar content, which rules should apply? DVDs, video-on-demand, interactive channels and video games are all transforming the traditional

viewing experience. PVR ('every viewer his or her own scheduler') enables the audience to by-pass commercial breaks, with major consequences for conventional advertising revenue. With the spread of broadband, the internet is becoming a distribution network on a scale inconceivable when its only access was by slow and expensive dial-up links. Mobile reception is making significant inroads, suggesting that 'place-shifting' will be the next step-change beyond (now long-established) time-shifting: viewers will be able to watch their own television on a laptop or other device anywhere in the world via the internet.

And the simplification – and the cheapness – of authoring equipment and software means that anyone can now shoot and edit their own material and blog and vlog it world-wide over the net. The use by the professional media of more and more so-called UGC (user-generated content), both on-screen and in print, suggests that the 'citizen journalist' is becoming a reality.

We're seeing a democratisation of the airwaves – a major shift from a channel based to a network-based world, from 'push' to 'pull' consumption. That doesn't mean, of course, that 'linear' broadcasting will disappear; indeed, it's likely to remain the principal content-source for very many people. But it will have to learn how to co-exist with many other competing outlets and to survive with much-reduced audiences.

Importance of Media Management

The right public connections is essential if you are into different kinds of marketing and advertising programs that are developed towards improving the image of your business. As it is, press release is entirely about building the right relationship to promote or advance the reputation of the company, its management as well as employees.

In addition to this, you require the best insider marketing in order to communicate your message to obtain supporters, advocates and allies in the institution and the entire community. By means of the right press exposure, you can even seek the services of people to help you in boosting the image of your company and in improving your organization's image in the unique internet.

However, if you will work with several funding organizations, you will know that you can actually obtain the result that you have always wanted. True enough, it is not that easy for any one to build a company name especially in these modern times when several organizations are currently improving their own reputation so as to convince the group that they have the most popular and top quality offers.

True enough, the best press exposure can also help in the growth of any company and getting it connected to the right establishments as well as economical aid from various departments. The fact remains that press release is not simple advertising or marketing; you also have to include exposing the company to various special events, community relations, social networking, blogging, internal relations, and other important works that are geared towards achieving the best media exposure.

Hence, what is the most excellent way for you to be sure that you are going to get the best possible result?

Public or media connections is very essential especially for a new company; this is applicable to an organization's connection with several press websites and even professionals in the online press release world.

The same as any other type of media consulting, the concept performs through developing connection so as to link the organization's objective, goals, ideas and other newsworthy actions. Notwithstanding the fact that most organizations want to keep their primary focus on creating more highly effective relationships with the group, it's simply essential for any organization to make sure that it has a powerful connection with the press in order to obtain the best results.

True enough, there are times when information launch is seen or considered as a device that is used for boosting certain information experiences, but if you truly evaluate its significance, you will see that it will certainly increase the image of the organization and persuade many people to use the products which are being marketed.

Personnel management

Administrative discipline of hiring and developing employees so that they become more valuable to the organization. It includes (1) conducting job analyses, (2) planning personnel needs, and recruitment, (3) selecting the right people for the job, (4) orienting and training, (5) determining and managing wages and salaries, (6) providing benefits and incentives, (7) appraising performance, (8) resolving disputes, (9) communicating with all employees at all levels.

Media training

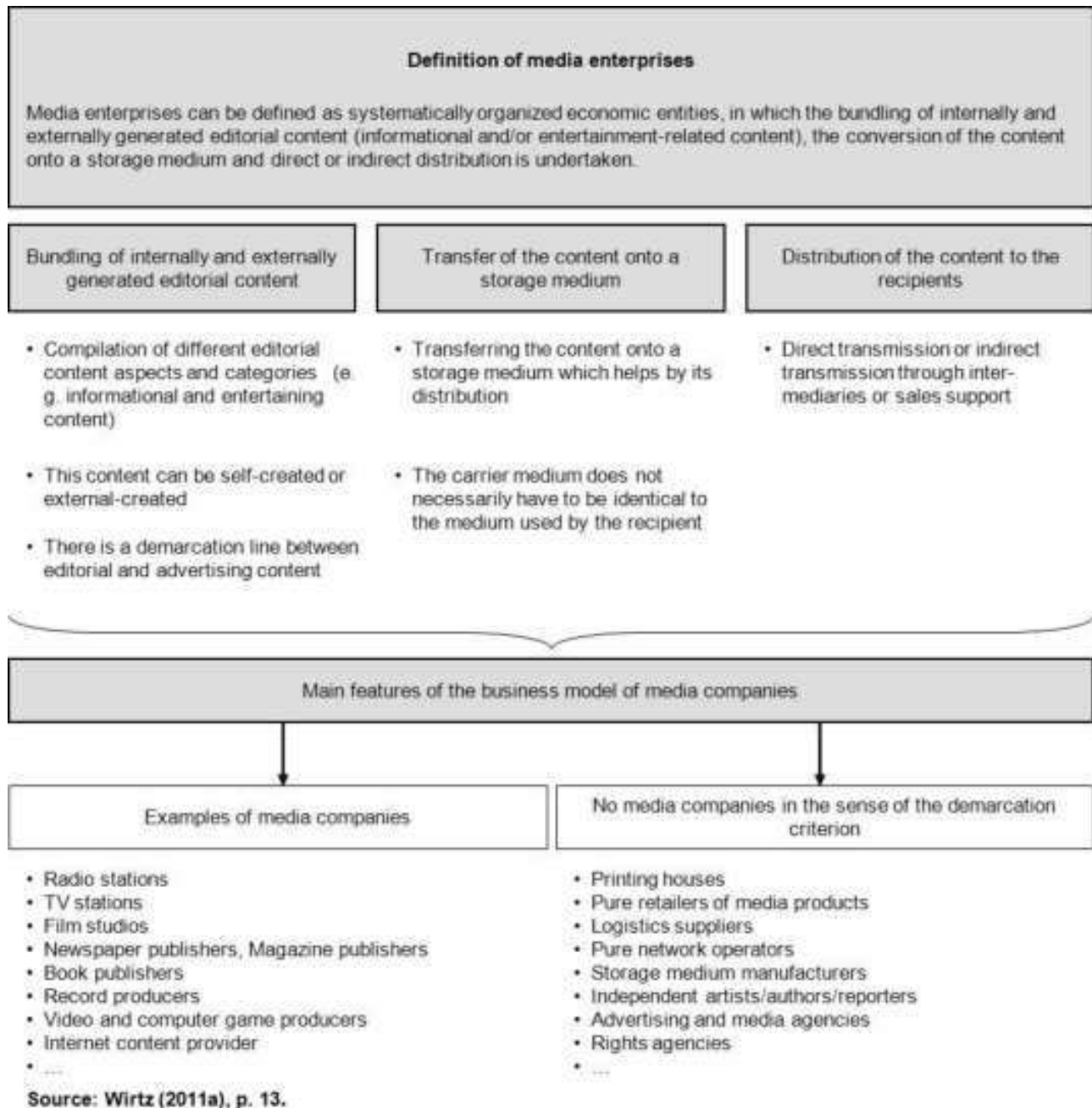
Media Training helping people to understand the media, develop spokesperson skill and the confidence to be effective in interviews with reporters on TV, radio or news stations. The goal of media training should be to ensure that your spokesperson feels a sense of confidence and control when approaching interviews with the news media.

To achieve this confidence, media training should include, but not be limited to, three critical elements:

Understanding the media: spokespersons should be taught to think like reporters so they understand reporters' roles, their needs and their tactics. This should include work on messaging to make them clear, substantive and media-friendly.

Real world practice exercises: interviewees should be subjected to on-camera interviews with a trainer playing the role of a reporter. The questions asked should be realistic and focused on the industry-specific issues the person is most likely to face.

Expert evaluation: the greatest value for spokespeople comes from seeing themselves on screen and being evaluated on their verbal responses, message control, body language and overall presentation. While media training involves much more than this, these are by far the most important parts of effective media training.



Skilled labour problems

The following points highlight the eight major problems faced by labour market in India. The problems are: 1. Surplus Labour Force 2. Unskilled Labour 3. Lack of Absorption of

Skilled Labour 4. Imperfections 5. Work Culture 6. Militant Unionism 7. Unemployment
8. Lack of Labour Reforms.

1. Surplus Labour Force:

Labour market in India is suffering from surplus labour force. A huge number of labourers are rendered surplus due to lack of adequate demand arising out of both primary, secondary and tertiary sector. Due to high rate of growth of population, a huge number of labour forces is continuously being added with the existing labour force leading to a huge surplus in the labour market.

2. Unskilled Labour:

Another major problem of labour market in India is that there is a growing number of unskilled labourers in the country. In the absence of adequate vocational institutes, skill formation among the labour force in the country is very slow. This huge number of unskilled labourers find it difficult to become self employed and thus create a huge army of unemployed in the country.

3. Lack of Absorption of Skilled Labour:

In India the absorption rate of skilled labour force is also very poor. A huge number of technically educated youths after completing their technical education like engineering, vocational courses etc. are finding it difficult to get themselves absorbed in the secondary sector, leading to a huge problem educated unemployment in India.

4. Imperfections:

Labour market in India is also suffering from some imperfections such as lack of adequate information regarding jobs, lack of suitable agency for the proper utilisation of labour force, child labour practices, lack of proper manpower planning etc. Such imperfections have been resulting in various hurdles in the path of absorption of labour force smoothly.

5. Work Culture:

Work culture among the Indian labour force is not at all good. Whatever work force is absorbed in various productive sectors it is not adhered to healthy work culture. This has been resulting in lesser economic surplus in the production system which restricts indirectly its absorption capacity in future.

6. Militant Unionism:

Labour market in India is also facing the problem of militant unionism. In some productive sectors and that too in some particular states, trade unions are not adhering to healthy practices. This has led to militancy in the union structure and its activities, which is detrimental for the greater interest of the nation.

7. Unemployment:

Labour market is also facing a serious problem of unemployment. A huge number of work forces of our country remain partially or wholly unemployed throughout the year or

some part of the season. This has led to the problems like disguised unemployment, seasonal unemployment, general unemployment and educated unemployment.

In the absence of adequate growth of employment avenues, unemployment problem in the country is gradually becoming much more alarming day by day.

Moreover, due to the policy of downsizing followed both in public and private sector and also in government administration and services sector, the problem of unemployment is becoming much more acute. This has also been putting much pressure on the labour market of the country.

8. Lack of Labour Reforms:

Labour market in India is also suffering from lack of adequate labour reforms provision. Economic reforms introduced in the country during the 1990s have changed economic scenario of the country. But the country is lagging behind in adopting necessary labour reforms which are rational and important under the present context.

We have seen that the labour market in India has been suffering from the aforesaid serious problems. Thus the Government should chalk out proper policy for bringing necessary reforms in the labour market for the greater interest of the country as well as for the interest of labour force (both working and non-working) in general.

Trade Unions

1. Concept: The trade union came in to being as an agent of workers and working class. Over the years workers struggled hard to achieve an adequate measure of their protection against exploitation. With the growth of modern industrial establishment, involving the employment of large no. of workers under the condition of poor bargaining power at individual level, the growth of trade union became necessary.

2. A continuous association of wage earners for the purpose of maintaining and improving the condition of their working lives. A continuous long term association of employees formed and maintained for the specific purpose of advancing and protecting the interests of members in their working relationship. A trade union is any combination, whether temporary or permanent, formed primarily for the purpose of regulating the relation between workmen and employer, or between workmen and workmen, and between employer and employer or for imposing restrictive conditions on the conduct of any trade or business. Thus as a whole trade union is an instrument of defense against exploitation and provide a forum for collecting the forces of working class.

3. Characteristics: Trade union is voluntary association of either employee or employer or independent workers. Trade union is generally permanent combination. Trade union formed by collective actions of workers. Basic objective of any trade union is to promote and protect the economic, social and vocational interest of workers / members. Trade union are adoptable to the changing socio-economic- legal - political environment. •

Trade union are designed to eliminate the exploitation of the workers through workers participation in the management.

4. Trade union emerged due to group psychology. Trade union is an organizing centre, it provide the locus for collecting the forces for working class. Trade union provides job security to the employees. Trade union can negotiate with management on the industrial conflicts. Right of workers i.e. wages and condition of work are protected by the trade union.

External forces in management.

Media Managers must recognize and respond to all factors that affect their organizations. This lesson describes how the internal and external environments of an organization drive change within the company. Navigating in today's chaotic business environments is much like trying to steer a tiny boat back to shore while caught in the center of a hurricane.

There are many forces at work that a person will need to respond to in order to make it safely back to port. Just like this tiny ship, today's organizations and their media managers are faced with a significant amount of factors that require an immediate response, often in the form of organizational change. The forces that drive this change in business are known as the internal and external environments. This lesson will discuss how both the internal and external environments of an organization induce change.

An organization refers to events, factors, people, systems, structures and conditions inside the organization that are generally under the control of the company. The structure of the organization also influences the business decisions. The organizational structure like the composition of board of directors, influences the decisions of business as they are internal factors. The structure and style of the organization may delay a decision making or some other help in making quick decisions.

Those factors that occur outside of the company that cause change inside organizations and are, for the most part, beyond the control of the company. Customers, competition, the economy, technology, political and social conditions and resources are common external factors that influence the organization.

Sociological: Includes; the demographic status and trends, work ethics and personal values, and general cultures. This factors influences differently on how management accomplishes its jobs. The social environment presented by each country is unique and as the business becomes international, management s ought to understand these unique environments. This understanding assists the management to plan for the future and design products for particular groups of people.

Economic and Political: Includes; all the essential factor such as competitors, suppliers and customers in an open model of business the management must study the economy

and political environment for a continual and dynamic relationship. In this system the management assumes that the business or company has both input and output. By studying the companies' suppliers', competitors and customers as well as current political factors, the management are capable of making effective managerial and decisions. The products designed under this should possess place, form and time utility to succeed in the mark place.

Technology: Technology has the most dramatic effect on business as changes in this external environment are often quickly felt by firm. As the market can change overnight the management should be in a position to make decisions that will put the company in a flexible position to adapt with the technological changes.

Co-ordinations between various branches of a medium.

Media management is seen as a business administration discipline that identifies and describes strategic and operational phenomena and problems in the leadership of media enterprises. Media management contains the functions strategic management, procurement management, production management, organizational management and marketing of media enterprises.

A uniform definition of the term media management does not yet exist, and "the field of media management in its present form is neither clearly defined nor cohesive." Notwithstanding this fact, among existing definitions there is a shared base concerning the business administrative character of media management and the functional understanding of management. In the following a number of definitions are provided.

"Media Management consists of (1) the ability to supervise and motivate employees and (2) the ability to operate facilities and resources in a cost-effective (profitable) manner."

"The core task of media management is to build a bridge between the general theoretical disciplines of management and the specificities of the media industry."

"Media and internet management covers all the goal-oriented activities of planning, organization and control within the framework of the creation and distribution processes for information or entertainment content in media enterprises."

Inter-Relations between various media

Media enterprises are strategically organized economic entities whose central work is generating and marketing of media. The generation of media is the bundling of internally and externally generated content and its transformation into a medium. The marketing is the direct or indirect distribution of media. The term media in this connection is restricted to one-to-many-communication with one sender and a large number of consumers. More precisely, the focus is on newspapers, magazines, books, music, television, films, internet and games. More details can be drawn from the graphic illustrating the definition of media enterprises.

In order to understand management in media enterprises it is crucial to build a larger picture of the media marketplace. The characteristics of media markets differ from markets of other economic sectors in several ways.

One characteristic of media markets is the multidimensional competition. Media enterprises operate in three different markets. They sell their services in form of content like information and entertainment, as well as in form of advertising space. These services are offered for different business markets. The content is offered to the consumer markets which differ depending of the type of media and the way it is used by consumers. The advertising spaces are traded on advertisement markets.

The third markets are procurement markets. They are needed as media enterprises generally do not produce all their offered content themselves but buy service packages of both, information and entertainment, from procurement markets. For example, authors and artists contracts or license and copyright deals can be acquired. But procurement markets can turn to business markets if, for example, complete rights to an event are purchased and then resold by a media enterprise in the form of secondary utilization rights. The described market structure is shown in the second image.

Image gives an overview of different media markets.

In fact, the three described media markets each media enterprise can be active in are strongly interdependent. But the intensity of their relationships differs. For example, there is a strong relationship between advertisement and consumer markets as the success among consumers drives advertising revenues. All possible inter-dependencies are pictured in the third graphic.

Furthermore, there are geographic media markets. Media enterprises operate in specific geographic markets. Some firms operate in a national market while other companies, for example, local radio stations operate in a regional area. So the marketplace of a media enterprise consists of the product media markets (consumer market, advertisement market and procurement market) and the geographic media market.

Security arrangements in Media Centres

The precautions taken to prevent the possibility of accidents is called “Media Centres Security Arrangements”. In this lesson you will know about the arrangements which are made at the construction site for various types of security. The aim of this lesson is not only to let you know as to what measures should be taken to prevent the accidents at media site such as what to do and what not to do, rather it is also to let you know as to how such good habits can be inculcated among all the workers starting right from top officers to ordinary workers, which minimizes the chance of accidents, that may cause loss of life/ any of the body parts and also creates hindrances in the construction work.

At the time of first appointment each employee will be got acquainted with the basic principles of media security fully. In this segment following things will be explained in detail:

1. Who should comply with the media security requirements.
2. Role and responsibilities of media security supervisor.
3. General requirement of media security during work.
4. Symbols of different types of security alerts and their observance.
5. Self Protection Equipment and their use.
6. Security Boards for machines, wire mesh, guard etc. their importance and use.
7. Special security zones.

Problems of Quality control

Security officer is required to be alert at all the times during working hour and also after the working hour and see that no lapses occur in the security system at the construction site. If required the employee, who is lax and unaware of the security requirement should be alerted by him and any ignorance on the part of the employee about the security requirement should be removed at once. It is the responsibility of the security supervisor to train the worker about security directives and about the Personal Protective Equipment.

He has the further responsibility to:

- Impart training at the work site about the security requirements.
- Procure all types of general and personal security devices for each and every employee.
- Untrained and unauthorized person should not be allowed to run any equipment or machinery.

Your QC Department Looks Like a Firehouse

Those of us who work in quality control can easily fall into the pattern of fire fighting—running from one issue to the next, solving each problem in the near-term as it crops up. This can work okay for a time, but it's not a great long-term strategy. When you only focus on solutions and never get down to the root causes that are creating your issues, you will find that the same types of issues keep occurring. "An ounce of prevention is worth a pound of cure" should be the mantra of every QC department. It's worth the extra time up front to get at the root causes of an issue.

Your Quality Folks Aren't Talking Cents

The universal language of business is dollars and cents, so if your quality control department isn't translating your issues into actual cost to the business, they might not be heard. For example, you might calculate the cost of the time it takes to close different types of exceptions and add that information to your efficiency evaluations.

There Is a Veil Over the QC Department

Sometimes the quality department is treated differently than manufacturing, engineering, or facilities when it comes to accountability. But it's very important that QC personnel and their equipment are held to certain standards, too. While QC is often responsible for finding solutions, they also need to be held responsible for their share of the causes—for instance, the impact to the supply chain if raw materials or final product testing is not completed effectively. If there has never been an evaluation of your QC department's process, it's definitely time to QC your QC.

Your QC Department Sits in an Ivory Tower

Quality folks can do a much better job if they receive training in other areas, including manufacturing, validation, and project management. When a quality person is too specialized, it can prevent them from seeing the whole picture and finding more comprehensive solutions. If your QC department tends to be resistant to change, that might be a sign that it's time to expand their horizons with some additional training outside their primary field of expertise.

Anything Short of Total Failure Is Considered Success

Let's say you work for a chemical plant that manufactures plastic bags. You make a polymer that requires water, but the water you're using has a bad bacteria in it. There is a corporate requirement that the water be clean, so the bacteria is a problem. However, the finished material passes the test even though there was a deviation earlier in the manufacturing process. So is it really a problem after all? If your client sees a pattern of failure within your process, they will begin to believe that you aren't truly concerned with quality, even if the final product technically meets the specifications. Make sure that you're taking all issues seriously, even if they don't seem to affect the final outcome at first glance.

Influences of Government on production and broadcasting

Publications Division is a repository of books and journals highlighting subjects of national importance and India's rich cultural heritage. The mandate of the organisation is to preserve national heritage and disseminate the same through the production and sale of quality reading material at affordable prices. It is publishing books in Hindi, English and other regional languages and marketing them through its nation-wide sales network..

Publications Division is preserving and presenting diverse aspects of Indian panorama. The organisation is one of the major publishers of Gandhian Literature and has preserved all written words of the Mahatma in its prestigious 100-volume series- the Collected Works of Mahatma Gandhi. Its books on art, culture, Buddhist literature, paintings, dance and music are sought after by experts in respective fields. Its

publications on Indian History and Freedom struggle, national and cultural leaders are considered valuable reading material for serious scholar of Indian history and culture.

The tradition of publishing quality books on diverse areas has been continuing since last seven decades. The forward march of India in science and technology, flora and fauna, geographical, sociological, literary and economic aspects keep finding expression in the Division's books

Publications Division is also publishing magazines and journals on various aspects of Indian life. Yojana, with its 13 language editions, is the flagship magazine on development-related issues. Kurukshetra, in English and Hindi, is devoted to rural development. Ajkal, in Hindi and Urdu, is a prestigious literary magazine.

Government of India, Ministry of Information and Broadcasting established Electronic Media Monitoring Centre with the aim to have effective monitoring of content of various TV channels beaming over Indian Territory for any violation of:

Programme Code

Advertisement Code

Various provisions of Cable Television Networks Regulation Act, 1995

The Centre has been entrusted with the work of monitoring the contents of (a) All TV channels up linking and down linking in India to check the violation of Programme and Advertisement Codes enshrined in Cable TV Networks (Regulation) Act 1995 and Rules framed there under, (b) Any other such work relating to monitoring of contents of broadcasting sector assigned by the Government from time to time.

At present, EMMC records and monitors around 600 TV channels round the clock. EMMC monitors and carries out a scrutiny of violations by electronic media in accordance with Codes framed under the Cable Television Networks Regulation Act, 1995. EMMC puts out reports on violations along with the recorded clips to the Scrutiny Committee, which examines and goes into the purported violations and forwards its findings to the Inter-Ministerial Committee and other bodies for further action.

Different media wings.

Press Information Bureau, Directorate of Advertising & Visual Publicity, Registrar of Newspapers for India, Publication Division, Electronic Media Monitoring Centre, Photo Division, Films Division, Directorate of Film Festivals, Directorate of Field Publicity, New Media Wing.

Review by public and Service Organisations

Directorate of Field Publicity (DFP): It has been mandated to undertake field programmes to create awareness amongst the masses, particularly in rural areas about

government's Policies, Programmes and Schemes for their welfare through interpersonal communication with its network of 207 Field Publicity Units under the control and supervision of 22 Regional Offices. Directorate of Field Publicity came into existence in 1953 with 32 Field Publicity Units under the control of four Regional Offices.

The Press Information Bureau (PIB): It is the nodal agency of the Government of India to disseminate information to the print and electronic media on government policies, programmes, initiatives and achievements. It functions as an interface between the Government and the media and also serves to provide feedback to the Government on peoples reaction as reflected in the media.

PIB disseminates information through different modes of communication viz. press releases, press notes, feature articles, backgrounders, photographs, database available on Bureaus website. Information disseminated is released in English, Hindi and Urdu and subsequently translated in other Indian languages to reach out to about 8,400 newspapers and media organizations in different parts of country.

In addition PIB organizes Press Conferences, Press Briefing, Interviews of the Ministers /Secretarys and other senior officers for sensitizing media persons on important policy initiatives of the Government. The Bureau also conducts Press Tours to successful project sites to enable media to have first hand account of developmental activities going on in the country.

The Directorate of Advertising & Visual Publicity (DAVP): It is the nodal agency to undertake multi-media advertising and publicity for various Ministries and Departments of Government of India. Some of the Autonomous Bodies also route their advertisements through DAVP. As a service agency, it endeavours to communicate at grass roots level on behalf of various Central Government Ministries.

The origin of DAVP can be traced to the times of World War-II. Immediately after the out-break of Second World War, the erstwhile government of India appointed a Chief Press Advisor. Besides other things, advertising was also the responsibility of the Chief Press Advisor. A post of Advertising Consultant was created in June 1941 under the Chief Press Advisor. This is where DAVP has its roots. On March 1, 1942, the Advertising Consultant Office became the Advertising Branch of the Department of Information & Broadcasting. Following the expansion in its scope, functions and activities, this Advertising unit was declared an Attached Office of the Ministry of Information & Broadcasting on October 1, 1955. The office also assumed the name of Directorate of Advertising & Visual Publicity(DAVP). DAVP was further declared as Head of a Department on April 4, 1959. By virtue of this declaration, financial and administrative powers were delegated to DAVP.

International arrangements in broadcasting radio and television

International broadcasting is broadcasting that is deliberately aimed at a foreign, rather than a domestic, audience. It usually is broadcast by means of longwave (LW), mediumwave (MW) and in shortwave radio (SW), but in recent years has also used direct satellite broadcasting and the internet as means of reaching audiences.

Although radio and television programs do travel outside national borders, in many cases reception by foreigners is accidental. However, for purposes of propaganda, transmitting religious beliefs, keeping in touch with colonies or expatriates, education, improving trade, increasing national prestige, or promoting tourism and goodwill, broadcasting services have operated external services since the 1920s.

All India Radio: As India's National Broadcaster and also the premier Public Service Broadcaster, All India Radio (AIR) has been serving to inform, educate and entertain the masses since its inception, truly living up to its motto – 'Bahujan Hitaya : Bahujan Sukhaya'. One of the largest broadcasting organisations in the world in terms of the number of languages of broadcast, the spectrum of socio-economic and cultural diversity it serves, AIR's home service comprises 420 stations today located across the country, reaching nearly 92% of the country's area and 99.19 % of the total population. AIR originates programming in 23 languages and 146 dialects.

All India Radio entered the realm of external broadcasting shortly after the outbreak of the Second World War on 1st October, 1939 when it started a service in Pushtu for listeners across the country's then North West Frontier. The service was designated to counter radio propaganda from Germany, directed at Afghanistan, Iran and Arab countries. After the end of the War, the equipment was presented to AIR, which took over active control. The need of continuing certain services was assessed and the number of services was rearranged.

With the dawn of Independence, the External Services of All India Radio assumed greater importance and significance as a medium for the expression of India's attitude to world events and problems. As a result, the single organization - the Central News Organization, which was dealing primarily with News and also with the External Services, was split in 1948 into two, the News Services Division and the External Services Division. All activities connected with the broadcast of news were taken over by the News Services Division while all programmes in Indian and foreign languages directed at listeners abroad became the responsibility of the External Services Division.

Today, the External Services Division (ESD) of All India Radio broadcasts daily in 57 transmissions with almost 72 hours covering over 108 countries in 27 languages, out of which 15 are foreign and 12 Indian. The foreign languages are Arabic, Baluchi, Burmese, Chinese, Dari, French, Indonesian, Persian, Pushtu, Russian, Sinhala, Swahili, Thai, Tibetan and English (General Overseas Service). The Indian languages are Bengali, Gujarati, Hindi, Kannada, Malayalam, Nepali, Punjabi, Saraiki, Sindhi, Tamil, Telugu and Urdu.

ESD has five major services namely, Urdu (non-stop 24 hours), GOS/English (8 hours 15 minutes), Hindi (5 hours 15 minutes), Bengali (6 hours 30 minutes), and Tamil (7 hours 15 minutes).

External Services Division projects to the world India's viewpoint, progress and policies along with its art and culture. With the changing scenario, its role has been further expanded due to an increasing number of Indian Diaspora, both PIOs and NRIs as well as foreigners interested in knowing India. ESD endeavors to provide them with information, education and entertainment with programmes on India's varied and multifaceted society.

ESD prioritizes its broadcasts on the following factors: 1. Political Relations, 2. Economic Compulsions, i.e. India's trade with other countries, 3. Social Relations: Broadcasts for NRIs and PIOs living in other countries.

The programmes project, Emerging India abroad, The country's democratic institutions and policies, Indian art and culture, India's point of view on major issues, A link with the Indian Diaspora.

Presently ESD is broadcasting to: 1. West, North, East and Southeast Asia, 2. North, West and East Africa, 3. Australia and New Zealand, 4. United Kingdom and some other European countries, 5. Indian Sub-continent.

Since 25th October, 1984, a special weekly capsule is being prepared and despatched for ethnic Indians in USA, Canada and U K through the Ministry of External Affairs.

Doordarshan

It is an Indian public service broadcaster, a division of Prasar Bharati. It is one of the largest broadcasting organisations in the world in terms of the studios and transmitters. Doordarshan has started replacing its analogue transmitters to digital transmitters, which will allow up to 8 channels to be carried from a single transmitter. Doordarshan has a three tier programme services – National, Regional and Local.

The National programmes emphasises on events and issues of interest to the entire nation. These programmes includes news, current affairs, magazine programmes and documentaries on science, art, culture, environment, social issues, serials, music, dance, drama and feature films. The regional programmes are beamed on DD National at specific time and also on the Regional Language Satellite Channels, which caters programmes for interests of a particular state in the language and idiom of that region. The local programmes are area specific and cover local issues featuring local people.

Beginning

Doordarshan celebrates its anniversary on 15th September, every year as Doordarshan had a modest beginning with an experimental telecast starting in Delhi on 15 September

1959, with a small transmitter and a make shift studio. The regular daily transmission started in 1965 as a part of All India Radio. Doordarshan began a five-minute news bulletin in the same year in 1965. Pratima Puri was the first newsreader. Salma Sultan joined Doordarshan in 1967 and later became a news anchor.

The television service was extended to Bombay (now Mumbai) and Amritsar in 1972. Up until 1975, only seven Indian cities had a television service and Doordarshan remained the sole provider of television in India. Television services were separated from radio on 1 April 1976. Each office of All India Radio and Doordarshan were placed under the management of two separate Director Generals in New Delhi. Finally, in 1982, Doordarshan as a National Broadcaster came into existence. Krishi Darshan was the first program telecast on Doordarshan. It commenced on 26 January 1967 and is one of the longest running programs on Indian television.

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Introduction to Media Management

KEY

- 1. TO secure accurate circulation figures and data relating to all periodicals and media**
- 2. Editorial**
- 3. Circulation**
- 4. Balance Sheet**
- 5. Content given to media by Agencies**
- 6. Product, price, place , promotion**
- 7. Digital convergence**
- 8. Individual**
- 9. Through recruitment process and Interview**
- 10. Money generated by advertising**

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

certificate Course

Title: INTRODUCTION TO MEDIA MANAGEMENT

Objectives :

- To know about the Importance of media management.
- Personnel management in media specialization.
- Study the influences of government on production and broadcasting.

Methodology :

Lecture-based learning

Duration :

30 Hours

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

certificate **Course**

Title: INTRODUCTION TO MEDIA MANAGEMENT

Test Exercise:

1. What is primary objective of the ABC?
2. Which of the following is not type of advertising?
3. Advertising revenue and _____ revenue are backbone of newspaper's finance.
4. For any organisation Financial summary of the year is recorded in _____.
5. What is press release?
6. What are 4Ps of marketing mix?
7. What bring different technologies together?
8. In _____ type of ownership owner alone takes all decisions .
9. How does Human Resource department appoint employees?
10. Define advertising-revenue.

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Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: INTRODUCTION TO MEDIA MANAGEMENT

Student Enrolment Sheet

Class: II B.A, B.Com, B.Sc

*** 2018 - 2019 ***

S. No	Roll No.	Name of the Student	Signature
1.	002	C. Bhargavi	C. Bhargavi
2.	003	S. Ramya .	S. Ramya
3.	005	N. Siva Vani	N. Siva Vani
4.	007	C. Murali Mohan	K. Murali Mohan
5.	011	P. Ramya .	P. Ramya
6.	012	B. Roopa Rani	B. Roopa Rani
7.	014	M. Sandhya .	M. Sandhya
8.	015	G. Naga Jyothi	G. Naga Jyothi
9.	017	S. Mounika .	S. Mounika
10.	018	T. Prasanthi	T. prasanthi
11.	019	P. Naveen	P. Naveen
12.	202	T. John Micheal	T. John Micheal
13.	203	B. Sai Kiran	B. Sai Kiran
14.	205	G. Ravi Kishore .	G. Ravi Kishore
15.	208	D. Kishore .	D. Kishore



P. PRINCY DAS

Principal
A.G. & S.G. Siddhartha Degree College of Arts & Science
(Autonomous)


HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: INTRODUCTION TO MEDIA MANAGEMENT

Student Enrolment Sheet

Class : II B.A, B.Com, B.Sc.

2018-2019

S. No	Roll No.	Name of the Student	Signature
	209	T. Prasad babu	T. Prasad babu
	210	V. Mani Kumar.	V. Mani Kumar
	211	M. Krishna babu.	M. Krishna babu
	212	R. Suneel	R. Suneel
	213	P. Gopinadh	P. Gopinadh.
	214	P. Prabha Par.	P. Prabhakar
	302	R. Sridevi	R. Sridevi
	303	V. Dhanajali	V. Dhanajali
	304	P. Keerthana	P. Keerthana.
	306	A. Kavya Sri.	A. kavya sri
	308	G. Lavanya.	G. Lavanya
	802	T. Bhuvaneswari	T. Bhuvaneswari
	803	T. Naga Lakshmi	T. Naga Lakshmi
	808	M. Vineela.	M. Vineela
	817	S. Mahesh	S. Mahesh

D. Salethi

PRINCIPAL

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

[Signature]
HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section : I year


Year : 2018-2019


Department of: Telugu

Paper : Introduction to Media Management Lecturer :

* 2018-2019 *

Sl. No	Roll No	Student Name	Category																Total
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	002	K. Bhangavi		P	P	P	P	A	P	P	P	P	P	P	A	P	P	P	13
2	003	S. Ramya		P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	14
3	005	N. Sravani		P	P	P	P	A	P	P	P	P	P	P	P	A	P	P	13
4	007	K. Murali Mohan		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
5	011	P. Ramya		P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
6	012	B. Roopa Rami		P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	13
7	014	M. Sandhya		P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	14
8	015	G. Naga Jyothi		P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	13
9	017	S. Moumika		P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	14
10	018	T. Prasadanthi		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
11	019	P. Naveen		P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	14
12	202	T. John Michael		P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	13
13	203	B. Sai Kiran		P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	14
14	205	G. Ravi Kishore		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
15	208	D. Kishore		P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	13
16	209	T. Prasad babu		P	P	A	P	P	A	P	P	P	A	P	P	P	P	P	12
17	210	V. Mani Kumar		P	P	P	A	P	P	P	P	A	P	P	P	P	P	A	12
18	211	M. Krishna babu		P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	13
19	212	R. Sumeel		P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	13
20	213	P. Gopinadh		P	P	A	P	P	P	P	P	P	A	P	P	P	P	P	13
21	214	P. Prabhakar		P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	14
22	302	R. Sridevi		P	P	P	A	P	P	P	P	P	A	P	P	A	P	P	13
23	303	V. Dhamaniali		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
24	304	P. Keethama		P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	13
25	306	A. Kanya Sri		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
26	308	G. Lavanya		P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	13
27	802	T. Bhuvaneshwari		P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	14
28	803	T. Naga Lakshmi		P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	13
29	808	M. Vinila		P	P	P	P	P	P	P	P	A	A	P	P	P	P	P	13
30	817	S. Mahesh		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15


 ... Prabhakar ...
 Signature


 HOD Signature

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Value Added Course / Certificate Course - Attendance Register

Class / Section : II year

Year : 2018-2019

Department of: Telugu

Paper : Introduction To Media Management
Lecturer :

Sl. No	Roll No	Student Name	Category	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	002	K. Bhargavi		P	P	P	P	P	P	P	A	P	P	A	P	P	P	P	13
2	003	S. Ramya		P	P	P	P	P	A	P	P	P	P	P	P	A	P	P	13
3	005	N. Sneha Vani		P	P	P	P	P	P	P	P	A	P	P	A	P	P	P	13
4	007	K. Murali Mohan		P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	12
5	011	P. Ramya		P	P	P	A	P	P	P	P	A	P	P	A	P	P	P	14
6	012	B. Roopa Rani		P	P	A	P	P	P	P	A	P	P	P	A	P	P	P	12
7	014	H. Sandhya		P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	13
8	015	G. Naga Jayathi		P	P	P	A	P	P	P	P	A	P	P	P	A	P	P	12
9	017	S. Moimika		P	P	P	P	P	P	P	A	P	P	A	P	P	P	P	14
10	018	T. Prasadambhi		P	P	P	P	P	P	P	P	A	P	P	P	A	P	P	13
11	019	P. Naveen		P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
12	202	T. John Micheal		P	P	P	A	P	P	P	P	P	A	P	P	P	P	P	13
13	203	B. Sai Kiran		P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	14
14	205	G. Ravi Kishore		P	P	A	P	P	P	P	P	A	P	P	P	P	P	P	13
15	208	D. Kishore		P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	14
16	209	T. Prasad babu		P	P	P	P	A	P	P	P	A	P	P	P	A	A	P	13
17	210	V. Mani Kumar		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
18	211	M. Krishna babu		P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	13
19	212	R. Sumeel		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
20	213	P. Gopinadh		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
21	214	P. Prabhakar		P	P	P	P	A	P	P	P	P	P	A	P	P	A	P	13
22	302	R. Sri Devi		P	P	P	A	P	P	P	P	A	A	P	P	P	P	P	12
23	303	V. Dhananjali		P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	14
24	304	P. Keerthana		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
25	306	A. Kavya Sri		P	P	P	A	P	P	P	A	P	P	P	P	A	P	P	12
26	308	G. Lavanya		P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	13
27	802	T. Bhuvaneshwari		P	P	A	P	P	P	A	P	P	P	P	A	P	P	P	12
28	803	T. Naga Lakshmi		P	P	A	P	P	P	P	P	P	P	A	P	P	P	P	13
29	808	M. Vinodha		P	P	A	P	P	P	A	P	P	P	P	A	P	P	P	12
30	817	S. Mahesh		P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	13

D. Sankar
PRINCIPAL

AC : P. Sankar
Signature

[Signature]
HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of TELUGU

certificate Course

Title: INTRODUCTION TO MEDIA MANAGEMENT

Marks List

Class: II B.A, B.Com, B.Sc * 2018-2019 *

S. No	Roll No.	Name of the Student	Marks
16	209	T. Prasad babu .	31
17	210	V. Mani Kumar	45
18	211	M. Krishna babu .	35
19	212	R. Suneel	40
20	213	P. Gop. madh .	45
21	214	P. Prabha Kar	46
22	302	R. Sridevi	48
23	303	V. Dhananjali	41
24	304	P. Deepthama	38
25	306	A. Gayatri Sui	40
26	308	G. Lavanya .	45
27	802	T. Bhuvaneswari	46
28	803	T. Naga Lakshmi	48
29	808	M. Vineela .	45
30	817	S. Mahesh.	42

D. Sankhita

Priyanka

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

[Signature]
HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of TELUGU

certificate Course

Title: INTRODUCTION TO MEDIA MANAGEMENT

Feed Back Form

1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
4. Have the teacher covered the entire syllabus? (Yes/No) ✓
5. Is the number of hours adequate? (Yes/No) ✓
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

K. Bhargavi, II B.A.
Roll no: - 002.

D. Nalapati
Principal
A.G. & S.G. Siddhartha Degree College of Arts & Science
(Autonomous), Vuyyuru

HOD Signature

Department of TELUGU

certificate Course

Title: INTRODUCTION TO MEDIA MANAGEMENT

Feed Back Form

1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
4. Have the teacher covered the entire syllabus? (Yes/No) ✓
5. Is the number of hours adequate? (Yes/No) ✓
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

D. Salethi
PRINCIPAL
AG & S.G. Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru
signature

[Signature]
HOD *signature*



ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)



Department of Telugu

CERTIFICATE COURSE: Introduction to Media management

CERTIFICATE

This is to Certify that, K. Bhargavi Son/Daughter of Shri/Smt K.Srinivas Rao has Successfully completed
Certificate course in Introduction to Media Management Conducted by the Department of Telugu from 03-12-2018 to 11-01-2019
We wish him / her bright future

M. C. S. Srinivas
Co-ordinator

K. Srinivas Rao
Head of Department

B. Balakrishna
Principal
PRINCIPAL
AG & SG Siddhartha Degree College of
Art & Science (Autonomous), Vuyyuru

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF CHEMISTRY

Value Added Course

Title: "BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY"

Name of the Lecturer	:	Sri. K. Ramesh
Class	:	I.B.Sc(M.C.Cs)
Duration of the Course	:	Thirty Days
VAC Code	:	CHEV201



**Adusumilli Gopalakrishnaiah & Sugarcane Growers
Siddhartha Degree College of Arts and Science**
Autonomous College :: Aided College of Govt. of AP
NAAC 'A' Grade College
Vuyyuru, Krishna (Dt), Andhra Pradesh-521165

VALUE ADDED COURSE

TITLE: *Basic Segments of Environmental Chemistry*

VAC CODE: CHE-BSE-01

On 02th JAN, 2019 TO 31th JAN 2019

Duration of the Course: 30 Days

Organized By

Department of Chemistry



Objectives:

“BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY”

To Study the basic situations of the Environment. The environment consists of four basic segments, they are Atmosphere, Hydrosphere, Lithosphere, and Biosphere.

Methodology :

Teaching and Learning Methods

Duration: 30 Days

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: “BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY”

Date: 01/01/2019 to 31/01/2019

Date	Content	Module No
1/1/2019 TO 6/1/2019	Environmental Chemistry – Significance of basic segments of environment – Nomenclature in the study of environmental chemistry.	I
8/1/2019 TO 13/1/2019	Lithosphere –I: Principles of weathering – effect of temperature, water, air, plants and animals on weathering.	II
16/1/2019 TO 22/1/2019	Lithosphere –II: Soil formation / development – factors affecting soil development – functions of soils – soil colloids – ion exchange properties.	III
24/1/2019 TO 30/1/2019	Analysis of soil: Sampling, determination of moisture, total nitrogen, phosphorous, silicon, lime, humus, nitrogen, alkali salts.	IV

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: "BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY"

Student Enrolment Sheet

Class: II B.Sc (M C Cs)

S. No	Roll No.	Name of the Student	Signature
1	1853701	N.Pujitha	N. Pujitha
2	1853702	R.Sulthana	R. Sulthana
3	1853703	Ch.Sowmya	Ch. Sowmya
4	1853704	U.Sandhya	U. Sandhya
5	1853705	SK.Shabana	S.K. Shabana
6	1853706	M.Bhuvana	M. Bhuvana
7	1853707	V.Venkatesh	V. Venkatesh
8	1853708	P.Sree vidya	P. Sree vidya
9	1853709	V.Sai kumar	V. Sai kumar
10	1853710	J.Hari Krishna	J. Hari Krishna
11	1853711	J.Lakshmi	J. Lakshmi
12	1853712	A.Swathi	A. Swathi
13	1853713	V.Sruthi	V. Sruthi
14	1853714	G.Anusha	G. Anusha
15	1853715	N.Manipal	N. Manipal

K. Reemur
Signature of the Lecturer

K. Reemur
Signature of the H.O.D

Value Added Course

Title: “BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY”

Test Exercise:

1. Photochemical smog normally does not contain
2. Depletion of the ozone layer is caused due to
3. Find the incorrect statement
4. Find the secondary pollutant among these
5. The reaction responsible for the radiant energy of the Sun is
6. Alum's capacity to purify water is due to
7. The coldest region of the atmosphere
8. Which of the oxide of nitrogen is not a common pollutant?
9. The compound essential for the process of photosynthesis has this element
10. In the air, N_2 and O_2 occur naturally but they do not react to form oxides of nitrogen because

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

Title: "BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY"

Key:

1. Chlorofluorocarbons
2. Freons
3. dissolved oxygen concentration below 5 ppm is ideal for the growth of fish
4. PAN
5. nuclear fusion.
6. impurities' coagulation
7. Mesosphere
8. N_2O_5
9. Mg
10. the reaction is endothermic

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Chemistry

Value added Course

Title: "BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY"

Marks List

Class:II B.Sc (MPC TM)

S. No	Roll No.	Name of the Student	Marks
1	1853701	N.Pujitha	10
2	1853702	R.Sulthana	10
3	1853703	Ch.Sowmya	10
4	1853704	U.Sandhya	10
5	1853705	SK.Shabana	10
6	1853706	M.Bhuvana	10
7	1853707	V.Venkatesh	10
8	1853708	P.Sree vidya	10
9	1853709	V.Sai kumar	10
10	1853710	J.Hari Krishna	10
11	1853711	J.Lakshmi	9
12	1853712	A.Swathi	10
13	1853713	V.Sruthi	10
14	1853714	G.Anusha	10
15	1853715	N.Manipal	10

K. Ramesh
Signature of the Lecturer

K. Ramesh
Signature of the H.O.D

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Chemistry

Value added Course

Title: "BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY"

Feed Back Form

Name of the Student: G. Anusha
Class and Roll Number: E. Bsc (Mees) 18-714

- 1. Is the programme interested to you ✓
(Yes/No)
- 2. Have you attended all the session ✓
(Yes/No)
- 3. Is the content of the program is adequate ✓
(Yes/No)
- 4. Have the teacher covered the entire syllabus? ✓
(Yes/No)
- 5. Is the number of hours adequate? ✓
(Yes/No)
- 6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No)
- 7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No)
- 8. Do you have any suggestions on the program? (Yes/No)

(Faint, illegible text from bleed-through or ghosting of the form content)

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Chemistry

Value added Course

Title: "BASIC SEGMENTS OF ENVIRONMENTAL CHEMISTRY"

Feed Back Form

Name of the Student: N. Mani Paul

Class and Roll Number: I.MCCS, 18-715

- 1. Is the programme interested to you ✓
(Yes/No)
- 2. Have you attended all the session ✓
(Yes/No)
- 3. Is the content of the program is adequate ✓
(Yes/No)
- 4. Have the teacher covered the entire syllabus? ✓
(Yes/No)
- 5. Is the number of hours adequate? ✓
(Yes/No)
- 6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? ✓
(Yes/No)
- 7. On the whole, is the program useful in terms of enriching your knowledge? ✓
(Yes/No)
- 8. Do you have any suggestions on the program? ✓
(Yes/No)

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course

- Attendance Register

Class / Section: TMCE3

Year : 2018

Department of: chemistry

Paper:

Lecturer: K.Ramesh

Sl.No	Roll No	Student Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1	1853701	N. Pujitha	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	
2	1853702	R. Suthana	P	P	P	P	P	P	P	P	P	P	P	a	P	P	P	
3	1853703	Ch. Sowmya	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	
4	1853704	U. Saadhya	P	P	P	P	P	P	P	P	P	P	P	P	a	P	P	
5	1853705	Sk. Shabana	P	P	P	P	P	a	P	P	P	P	P	P	P	P	P	
6	1853706	M. Bhuvana	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
7	1853707	V. Venkatesh	P	P	P	P	P	P	P	P	P	P	P	P	a	P	P	
8	1853708	P. Sree Vidya	P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	
9	1853709	V. Sai Kumar	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	
10	1853710	J. Hari Krishna	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	
11	1853711	J. Lakshmi	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	
12	1853712	A. Swathi	P	P	P	P	P	P	P	P	P	P	P	P	a	P	P	
13	1853713	V. Saurthi	P	P	P	P	P	P	P	P	P	P	P	P	a	P	P	
14	1853714	G. Anuscha	P	P	P	P	P	a	P	P	P	P	P	P	P	P	P	
15	1853715	N. Manipal	P	P	a	P	P	P	P	P	P	P	P	P	P	P	a	

K. Ramesh
Signature of the Lecturer

K. Ramesh
Signature of the HOD

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course - Attendance Register

Class / Section: I MCCB Year : 2018 Department of: chemistry Paper: Lecturer: K. Ramesh

Sl. No	Roll No	Student Name	Category	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	1853701	N. Pujitha.		P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2	1853702	R. Sulthana.		P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P
3	1853703	ch. soumya.		P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P
4	1853704	U. Sandhya.		P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P
5	1853705	sk. shabara.		P	P	P	P	P	a	P	P	P	P	P	P	P	P	P	P
6	1853706	M. Bhuvana.		P	P	P	P	P	P	a	P	P	P	P	P	P	P	P	P
7	1853707	V. Venkatesh.		P	P	P	P	P	P	P	a	P	P	P	P	P	P	P	P
8	1853708	P. sree vidya.		P	P	P	P	P	P	P	P	a	P	P	P	P	P	P	P
9	1853709	v. sai kumar.		P	P	P	P	P	P	P	P	P	a	P	P	P	P	P	P
10	1853710	J. Hare Krishna.		P	P	P	P	P	P	P	P	P	P	a	P	P	P	P	P
11	1853711	J. Lakshmi.		P	P	P	P	P	P	P	P	P	P	P	a	P	P	P	P
12	1853712	A. Swathi.		P	P	P	P	P	P	P	P	P	P	P	P	a	P	P	P
13	1853713	V. Sruthi		P	P	P	P	P	P	P	P	P	P	P	P	P	a	P	P
14	1853714	E. Anusha.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	a	P
15	1853715	N. ManiPal.		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

K. Ramesh
Sig. of Lecturer.

K. Ramesh
Sig. of H.O.D



ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)



Department of Chemistry

VALUE ADDED COURSE: **Basic Segments of Environmental Chemistry**

CERTIFICATE

This is to Certify that, **M. Bhuvana** Son/Daughter of Shri/Smt **M. Venkateswara Rao**

has Successfully completed value added course in **Basic Segments of Environmental Chemistry**
Conducted by the Department of Chemistry from 02-01-2019 to 31-01-2019 We wish him her bright future

K. Rooney
Co-ordinator

A. Padma
Head of Department

S. Sathish
PRINCIPAL
AG & SG Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru



ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)



Department of Chemistry

VALUE ADDED COURSE: Basic Segments of Environmental Chemistry

CERTIFICATE

This is to Certify that, *V. Sai kumar* Son/Daughter of Shri/Smt *V. Kondala Rao*
has Successfully completed value added course in **Basic Segments of Environmental Chemistry**
Conducted by the Department of Chemistry from 02-01-2019 to 31-01-2019 We wish him her bright future

K. Ramesh
Co-ordinator

A. Padma
Head of Department

E. Lakshmi
PRINCIPAL
AG & SG Siddhartha Degree College of
Art & Science (Autonomous), Vuyyuru

A.G& S.G.Siddhartha Degree Colege of Arts and Science,vuyyuru.

Cerificate Course

2018-19



Department of Zoology



Organic Farming

45 days certificate Course

Course Code:ZOCC OF-03

03/12/2018 -11/1/2019

and

20/01/2019-06-03-2019

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

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ISO 9001:2015 Certified Institution

2018-2019



DEPARTMENT OF ZOOLOGY Certificate Course

Title: Organic farming

Name of the Lecturer : D.A. K IRANMAYEE

Class: II BA,B.Com,MPC(T&E) BZC(E) MPCS, MCCS, B. Com-cs

Duration of the Course: 45 days (03.12.2018 to 11.01.2019
(21.01.19 to 06.03.19)

Course Code: ZOO CC OF-03

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course
Title: Organic farming

Objectives:

- To produce food of high nutritional quality in sufficient quantity.
- To encourages sustainable livelihood of the producers as well as safeguards consumers health
- To improve soil fertility, conserving flora and fauna, increasing genetic diversity, and putting an end to chemical pollution and toxic residues.
- To maintain and increase long term fertility of soil.

Outcomes:

After studying the course, the student will be able to

1. Adopt organic farming as his career
2. Use fewer pesticides and recycle animal wastes
3. Conserve water and improves crop yields.
4. Increase net incomes of farmers
5. Increase crop intensity along with availing fair price of the crop grown.

Methodology: Teacher assisted learning Course

Duration: 45 Days

03/12/2018 to 11/01/2019
21/01/2019 to 06/03/2019

2018-19

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course Student Enrolment Sheet

Class : II BA,B.Com,MPC(T&E)BZC(E) MPCS,MCCS,B.Com-es

S. No	Roll No.	Name of the Student	Signature
1	17-008	D.NARAYANA	D. Narayana
2	17-028	N.SAI PRAKASH	N. Sai Prakash
3	17-029	K.PAVAN KALYAN	K. Pavan Kalyan
4	17-030	M.VINAY BABU	M. Vinay Babu
5	17-033	A.BALA SAI	A. Bala Sai
6	17-038	CH.DAGLAS	CH. Daglas
7	17-047	P.SUSHMA	P. Sushma
8	17-050	J.RAJESH	J. Rajesh
9	17-051	G.ASHOK KUMAR	G. Ashok Kumar
10	17-056	M.BHAVYA SRI	M. Bhavya Sri
11	17-113	V.S.S.PRASAD	V. S. S. Prasad
12	17-119	N.HEMANTH	N. Hemant
13	17-122	PH.SHARIF	Ph. Sharif
14	17-130	D.KRANTHI KUMAR	D. Kranthi Kumar
15	17-137	M.KONDA SWAMI	M. Konda Swami
16	17-139	L.NAVEEN KUMAR	L. Naveen Kumar

17	17-140	P.NAGARJUNA	P. Nagarjuna
18	17-141	D.BARATH KUMAR	D. Bharath kumar
19	17-150	P.RAJU	P. Raju.
20	17-151	P.AJAY KUMAR	P. Ajay Kumar
21	17-155	S.PRABHU DAS	S. Prabhudas
22	17-164	K.ABHISHEK	K. Abhishek
23	17-167	Y.SIVA NAGA RAJU	Y. Siva naga Raju
24	17-169	M.SIVA NAGARAJU	M. Siva nagaraju
25	17-217	M.PRIYANKA	M. priyanka
26	17-235	G.BHAGYA LAKSHMI	G. Bhagyalakshmi
27	17-236	AB.SHABANA SULTANA	AB. Shabana Sulthana
28	17-237	K.NAGARJUNA	K. Nagarjuna
29	17-241	P.BAGHYA RAJU	P. Baghya Raju
30	17-401	P.BHARGAVI	P. Bhargavi
31	17-403	M.APARNA	M. APARNA
32	17-404	AB.FATHIMA	AB. Fathima
33	17-405	K.NAGA SUDHA	K. Naga sudha
34	17-406	K.RAMYA	K. Ramya
35	17-407	K.ANUSHA	K. Anusha
36	17-408	P.RAJYA LAKSHMI	P. Rajya Lakshmi
37	17-409	N.CHANDRAM	N. Chandram
38	17-306	A.KAVYA SRI	A. kavya sri

39	17-309	V.CHAITHANYA	V.chaithanya
40	17-310	CH.SINDHU	CH. Sindhu
41	17-311	K.USHA RANI	K. Usharani
42	17-331	P.POOJA	P. Pooja
43	17-332	V.JANAKI	V. Janaki
44	17-333	S.RADHA KRISHNA	S Radha Krishna
45	17-334	P.LOSHINI RAMYA	P. Loshini Ramya
46	17-335	M.SINDHURA	M. Sindhura
47	17-337	D.HARITHA	D. Haritha
48	17-410	MD.NASEEMA	MD. Naseema
49	17-411	K.ANITHA	K. Anitha
50	17-416	P.K.S.SUHASINI	P.K.S. Suhasini
51	17-417	G.SAI KUMAR	G. Sai Kumar
52	17-419	J.SAMBA SIVARAO	J. Sambasivarao
53	17-420	D.RAMYA SAI	D. Ramya Sai
54	17-421	M.MEGHANA	M. Meghana
55	17-422	K.SIVARAMAKRISHNA	K. Sivakumar
56	17-423	P.VEERA VENKATESWRA RAO	P. veera venkateswra rao
57	17-424	G.Y.S.PAVAN	G.Y.S. Pavan
58	17-425	G.TEJA VENU GOPAL	G. Teja Venu Gopal
59	17-426	S.THRINADH	
60	17-427	K.REVATHI	K. Revathi

61	17-428	I.LAVANYA	I. Lavanya
62	17-431	D.PARAMESWARAO	D. Parameswar rao
63	17-432	K.HEPSIBHA	K. Hepsibha
64	17-433	P.RAMA KRISHNA	P. Rama Krishna
65	17-436	G.NAGENDRA BABU	G. Nagendra Babu
66	17-502	G.SANDEEP	G. Sandeep
67	17-503	K.MOUNIKA	K. Mounika
68	17-505	K.TEJASWI	K. Tejaswi
69	17-508	V.BHARGAVI	V. Bhargavi
70	17-509	A.VIJAYA RANI	A. Vijaya rani
71	17-512	B.SRIKANTH	B. Srikanth
72	17-513	D.DEEPTHI	D. Deepthi
73	17-514	Y.RUSHYANTH	Y. Rushyanth.
74	17-515	T.NAGADIVYA	T. Nagadivya.
75	17-516	CH.VIMALA KUMARI	CH. Vimala Kumari
76	17-520	D.DEEPIKA	D. Deepika
77	17-525	B.CHANDANA	B. CHANDANA
78	17-642	T.V.R.S.PHANINDRA	T.V.R.S phanindra
79	17-644	A.NATARAJ	A. Nataraj
80	17-645	P.SURESH	P. Suresh.
81	17-647	K.L.NIRANJANA RAJU	K.L. Niranjana Raju
82	17-648	K.SUDHAKAR	K. Sudhakar

83	17-659	N.V.V.SAMBA SIVA RAO	N.v.v. Samba siva Rao
84	17-660	CH.VINAY SAI	CH. Vinay Sai
85	17-706	K.JEJA SRI LAKSHMI	K. Jeja sri lakshmi
86	17-713	G.SUNEETHA	G. Suneetha
87	17-721	T.SWETHA	T. Swetha .
88	17-723	M.ANANTH	M. Ananth
89	17-725	R.L.SRI ARCHANA	R.L. Sri Archana
90	17-726	P.SUSWETHA	P. Suswetha .
91	17-733	P.SAI SONIYA	P. Sai Soniya .
92	17-737	D.SIREESHA	D. Sireesha .
93	17-740	V.SIVA KUMAR	V. Siva Kumar
94	17-807	A.CGIRANJEEVI	A. Cgiranjeevi
95	17-812	CH.RAJA BABU	Ch. Raja Babu
96	17-814	V.L.PRASANNA KUAR	V.L. Prasanna kuar
97	17-815	SD.RASUL	SD. RASUL
98	17-817	S.MAHESH	S. Mahesh
99	17-820	D.MADHAV KRISHNA	D. Madhav Krishna
100	17-825	SK.MEERA VALLI	SK. Meera valli
101	17-828	B.HARI BABU	B. Hari babu
102	17-830	K.LIKITH	K. Likith .
103	17-837	V.BALA KISHORE	v. Bala Kishore .
104	17-841	J.SIVA SAI KRISHNA	J. Siva sai Krishna

105	17-851	AB.MALLIK	AB. Mallik
106	852	MD.ASHF AQUE	Md. Ashf Aque
107	17-854	CH.AJEY BABU	Ch. Ajeey Babu
108	17-855	B.RAMU	B. Ramu
109	17-856	K.MOHAN	K. Mohan
110	17-859	P.DURGA VARA PRASAD	P. Durga Varra Prasad
111	17-867	Y.REVANTH KUMAR	Y. Revanth kumar
112	17-868	K.VINOD KUMAR	K. Vinod kumar
113	17-869	A.ZIAUR RAHAMAN	A. Ziaur Rahaman
114	17-870	MD.IBRAHEEM	Md. Ibraheem
115	17-873	P.ANKA RAO	P. Anka Rao

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course Title: Organic farming

Date: **03/12/2018 to 11/01/2019**

Date	Content	Module No.
03.12.2018 To 12.12.2018	Concept of Organic farming. 1.1: Introduction- Farming, Organic farming, concept and development of organic farming. 1.2: Principals of organic farming, types of organic farming. 1.3: Benefits of organic farming. 1.4: Need for organic farming. 1.5: Requirements for organic farming.	UNIT: I
13.12.2018 To 22.12.2018	Organic crop production practices-I 2.1: Organic crop production methods- vegetables- Solanum melongena, Avelmoschusesculentus, capsicum (chilies) Lycopersicum, Amaranthus, Cucurbitaceae. 2.2: Organic crop production methods –Fruits- Banana, Papaya. 2.3: Livestock component in organic farming.	UNIT: II
23.12.2018 To 02.01.2019	Organic crop production practices-II 3.1: Organic crop production methods- Spices- peper, ginger 3.2: Organic crop production methods- Medicinal and aromatics. 3.3: Organic crop production methods- Ornamental crops	UNIT: III
03.01.2019 To 11.01.2019	Organic plant protection and nutrient management. 4.1: Soil tillage, land preparation and mulching. 4.2: Green manuring, composting-principles, composting methods, vermi composting. 4.3: Organic manures, organic preparations. 4.4: Bio-fertilizers-types. 4.5: Weed management	UNIT: IV

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Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Organic farming

Test Exercise:

1. Write a brief note on Livestock component in organic farming
2. Write notes on Weed management
3. What do you know on Benefits of organic farming?
4. Give an account on composting methods
5. Write short notes on spices
6. Explain the concept and development of organic farming
7. What is organic farming
8. Write notes on Soil tillage
9. Explain about Livestock component in organic farming
10. Give an account of land preparation and Mulching

Certificate Course
Title: Organic farming

Key:

1. Nutrient cycling: Nitrogen fixed by leguminous plants and different nutrients devoured by farm animals amid brushing are come back to soil through dung and urine. Overseen painstakingly, farm animals and manures can assume an imperative part in nutrient cycling on the organic farming.

In feedlots, it is important to store and discard manure and urine in a naturally acceptable way. Excreta contain several nutrients (including nitrogen, phosphorus and potassium) and organic matter, which are important for maintaining soil structure and fertility. Stubble in the fields and crop residues are important sources of forage in smallholder systems. Lower mature leaves stripped from standing crops, plants thinned from cereal stands and vegetation on fallow fields offer additional fodder resources related to food cropping. When animals consume vegetation and produce dung, nutrients are recycled more quickly than when the vegetation decays naturally. Grazing livestock transfer nutrients from range to cropland and concentrate them on selected areas of the farm.

2. Managing weeds in ornamental plant production, whether in field soil, greenhouses, or outdoor containers, can be difficult but is essential to successful production. Weeds not only compete with the crop for plant nutrients and sunlight but are also unsightly and do not meet clean nursery quality standards. In addition, ornamental plants infested with certain noxious weeds cannot be sold because of quarantine regulations. Because of the high value of ornamental crops and the limited number of herbicides available, growers often resort to costly hand-weeding. However, many of the strategies used in vegetable row crops or tree crops can be adapted for use in field-grown trees and cut flower production. For example, planting in rows allows the field to be more easily cultivated by hand or mechanically. The use of drip irrigation in tree or shrub production greatly reduces excessively wet areas, thus reducing the germination and growth of weeds.

Whether ornamentals are grown in containers, fields, or greenhouses, there are some control practices common to many methods of production that can reduce the impact of weeds on the crop as listed below in no particular order.

Prevention

The most important factor in overall weed control is to prevent weeds from developing seed and perpetuating the weed problem. Sources of weed introduction include weedy stock, weed seeds in the growing area or nearby, or plant propagules in manure, soil, uncomposted yardwaste, or other organic matter sources. Many growers cultivate or treat the margins of the property with herbicides to reduce the number of windborne or water-carried seeds that can move to the growing area. Screens on open-water inflow sources can be installed to keep out water-borne seeds. When using fine-mesh screens, increasing the surface

area of the water intake and periodic debris removal may be needed to avoid clogging of the water flow.

3. Organic farming has many benefits for consumers. First, organic farming, thanks to its particular specifications, forces producers to respect specific quality criteria. In general, organic farming is more widespread than conventional farming: for example, farm animals in organic farming generally benefit from larger areas, with compulsory access to the outdoors for certain animals. For instance, calves raised in organic farming benefit from 4m² per head (for a calf of 300 kg) against only 1.8m² in conventional farming. This broader approach would allow some specialists to obtain more qualitative products that could be tastier for example.

On the other hand, the yields of organic farming are generally lower than those of conventional farming. This means higher operating costs (and therefore higher selling prices). Therefore, in general, the recommended retail price (RRP) for consumers buying from organic farming is higher than the selling prices of traditional agriculture. This poses a number of problems, especially to poor consumers who struggle to have the purchasing power to buy organic food. Prices aren't very different in some products, especially those growing easily without pesticides. Still, others, like meat and dairy, are significantly more expensive in organic farming because they require more work in order to comply with the organic specifications.

4. There are a few different methods of aerobic composting to choose from, and each one has its own unique charm.

In-vessel composting: Vessel composting is a method of production of compost in a sealed container that can help speed the composting process and the decomposition of organic matter by processing large amounts of waste without taking up much space. Plus, it keeps any smells contained – a win for your nose and your neighbors.

Aerated static pile composting: Static pile composting is like a big party to which everyone's invited – just mix your organic materials together in a giant pile and let the good times roll.

Aerated turned windrow composting: The windrow method involves creating long, tall piles of organic matter or biodegradable waste that are turned regularly.

Trench Composting: This type of composting is like a secret underground club for your waste – preparing trench compost means making garden beds, burying your scraps in a trench, and letting the soil and natural decompositions process do the rest

5. These spices are mostly used for flavoring or tempering cooked food and for preparing medicines and dyes etc. Main spices include pepper, chilies, turmeric, ginger, cardamom, clove, areca nut etc.

India is the largest producer of spices with annual output of 4.4 million tons (2005-06). But due to large scale internal consumption it only exports 1.3 lakh tones of spices annually. Table 11.XI presents an account of the area, production and export of spices in India

Pepper (Piper nigrum) Black pepper is a climber shrub growing wildy in the forest tracts of Kerala. India is the second largest producer of this spice in the world alters

Indonesia. The black pepper is the unripe dried fruit while white pepper is the skinned ripe fruit. It is used for giving flavour to foodstuffs.

Conditions of Growth

Pepper is the plant of hot and humid climate. It requires 10°C-30°C of temperature, 150 cm-200 cm of rainfall and well drained clayey loam soils rich in humus. It can also be grown on a variety of soils ranging from red loam to sandy loam and laterites. Its cultivation may be carried on from sea level up to a height of 1050m along the hill slopes but coastal sandy plains are generally avoided.

6. Organic farming has been a way of life and a tradition in our Indian farming system for centuries; it is not a new concept.

- Organic farming has its own system for controlling pests and diseases in crop and livestock production, which avoids the use of various synthetic chemicals or gene manipulation.
- There are various types of organic farming that are practised in the country's diverse climate, with forest produce falling under this category by default.
- Organic farming, among other types of farming systems, is gaining popularity due to its positive impact on the environment.
- Furthermore, organic farming is labour intensive, which increases rural employment and long-term improvements in resource quality.
- Organic farming is based on an intimate understanding of nature's laws and rules.
- In today's terminology, it is a farming system method that primarily aims at cultivating the land and raising crops in such a way that the soil remains alive and healthy through the use of organic wastes and other biological materials, as well as beneficial microbes (biofertilizers).
- They release nutrients to increase crop yield and sustainability. "Organic agriculture is a production system that promotes the health of soils, ecosystems, and people."
- Organic agriculture combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.

7. Organic farming also known as **ecological farming or biological farming**, is an agricultural system that **uses organic fertilizers such as compost manure, green manure, and bone meal** and emphasizes techniques such as **crop rotation and companion planting**.

- **Organic farming** is an agricultural practice that **makes use of biological pesticides and fertilizers derived from plant or animal waste**.
- The **goal** of organic farming is to create foods that are of the highest quality, have a high nutritional value, and are free of chemicals.
- It strives to develop a **sustainable system** that conserves energy, soil, and water; while at the same time providing general care for the environment.
- In fact, the use of chemical pesticides and synthetic fertilizers was the cause of the environmental harm that organic farming was intended to address.
- Or to put it another way, organic farming is a new type of agriculture or farming that **improves, maintains, and repairs the ecological balance**.

- Organic standards are intended to allow the use of naturally occurring substances while **prohibiting or strictly limiting the use of synthetic substances**.
 - For example, naturally occurring pesticides such as pyrethrin are permitted, whereas synthetic fertilizers and pesticides are generally prohibited.
 - Copper sulphate, elemental Sulphur, and Ivermectin are examples of permitted synthetic substances.
 - Genetically modified organisms, nanomaterials, human sewage sludge, plant growth regulators, hormones, and antibiotic use in livestock husbandry are all prohibited.
- Organic farming advocates benefits such as sustainability, openness, self-sufficiency, autonomy and independence, health, food security, and food safety.

8 Tillage and crop rotations are production practices that influence soil health in ways that impact both long run productivity and environmental outcomes, such as nutrient run-off and carbon sequestration. These practices can also be adjusted in response to evolving weather and climate patterns in farmers' production environments.

- Tillage—turning the soil to control for weeds and pests and to prepare for seeding—has long been part of crop farming. However, intensive soil tillage can increase the likelihood of soil erosion, nutrient runoff into nearby waterways, and the release of greenhouse gases into the atmosphere. A reduction in how often or how intensively cropland is tilled enables the soil to retain more organic matter, which leaves the soil less susceptible to wind and water erosion and helps store, or "sequester," carbon. Farmers' choices about soil preparation, including tillage depth and the number of tillage operations, can reduce weed growth, improve nutrient management, and influence crop seeding. In general, less disturbance of soil can lead to more organic matter and lower potential for soil erosion and compaction. No-till is generally the least intensive form of tillage, while conventional tillage is the most intensive form of tillage. Conservation tillage, in which at least 30 percent of plant residue remains on the field following harvest, is less intensive than conventional tillage.
- Crop rotations are planned sequences of crops over time on the same field. Rotating crops provides productivity benefits by improving soil nutrient levels and breaking crop pest cycles. Farmers may also choose to rotate crops in order to reduce their production

9. Nutrient cycling: Nitrogen fixed by leguminous plants and different nutrients devoured by farm animals amid brushing are come back to soil through dung and urine. Overseen painstakingly, farm animals and manures can assume an imperative part in nutrient cycling on the organic farming.

In feedlots, it is important to store and discard manure and urine in a naturally acceptable way. Excreta contain several nutrients (including nitrogen, phosphorus and potassium) and organic matter, which are important for maintaining soil structure and fertility. Stubble in the fields and crop residues are important sources of forage in smallholder systems. Lower mature leaves stripped from standing crops, plants thinned from cereal stands and vegetation on fallow fields offer additional fodder resources related to food cropping. When animals consume vegetation and produce dung, nutrients are recycled more quickly than when the

vegetation decays naturally. Grazing livestock transfer nutrients from range to cropland and concentrate them on selected areas of the farm.

10. Land preparation : Virgin forest areas, if selected for plantation, should be cleared of all undergrowth and trees not suitable for the relatively heavy shade needed by cardamom.

- Where the tree growth is sparse and shade insufficient or unsatisfactory, quick-growing trees are planted for temporary shade as well as other trees with a tall and spreading habit for permanent shade.
- The trees selected for providing permanent shade in cardamom plantations should have the following characteristics:
- A tall and fast-growing habit, so that within 3 years of planting the tree attains sufficient growth to provide shade for the already-flowering cardamom plants.
- The tree should provide maximum shade during the dry period.
- The tree should provide maximum shade during the dry period.
- The leaves should decompose quickly when they fall on the ground.
- Utis (*Alnusnepalensis*) has been recommended as an ideal shade tree. Other important shade trees are Chillowne, Schimawallich, pan isaj, Bucklandeapopulnea, Malato, *Macaranga denticulate* and *Edgeworthiagardneri*. The shade trees are planted with a spacing of 7-10 m.

Planting

- Bulbs or slips or seedlings along with 1-2 shoots are planted in the prepared pits (30 cm x 30 cm) at 150 cm x 150 cm distance for Ramshai and Sawaney and at a 90 cm x 90 cm distance for Golshai, by digging a hole in the soil.
- The planting is done at 8-10 cm depth. After a few showers, the pits may be filled with surface soil. Well-rotten cattle manure, compost or leaf-mould should be mixed thoroughly with the top soil before planting.
- It is also advisable to add 100 g rock phosphate per pit and mix it with the top soil before filling the pits. Planting is done in June-July when there is sufficient soil moisture, atmospheric humidity and optimum temperature for growth.

Mulching

- Soon after the planting, the base of the plant should be mulched during November-April with dried leaves.
- Mulching will preserve the soil moisture and provide a source of nutrients after decomposition.

Organic manures like FYM, compost, leaf-mould and humus, rich forest soil may be applied. As the soil is rich, generally no fertilizer is recommended

A.G. & S.G. Siddhartha Degree College of Arts & Science

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Department of Zoology

**Value Added Course
Title: Organic farming**

Feed Back Form

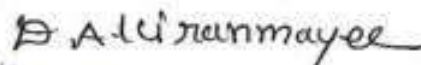
1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
4. Have the teacher covered the entire syllabus? (Yes/No) ✓
5. Is the number of hours adequate? (Yes/No) ✓
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

P. Rupa 17-150
II-B.Com.



PRINCIPAL

**AG & SG Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru**



Head, Department of Zoology,
A.G. & S.G. Siddhartha Degree College,
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32007/2017 20.8.17

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Zoology

**Value Added Course
Title: Organic farming**

Feed Back Form

1. Is the programme interested to you (Yes/No) ✓
2. Have you attended all the session (Yes/No) ✓
3. Is the content of the program is adequate (Yes/No) ✓
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6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
8. Do you have any suggestions on the program? (Yes/No) ✓

D. Haritha 17-337

II. B.Sc (T.M)

D. S. S. D. S.

PRINCIPAL

**AG & SG Siddhartha Degree College of
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A. U. S. R. M. S.

**Head, Department of Zoology
AG & SG Siddhartha Degree College
(Autonomous)
VUYYURU - 521 165.**

2018-2019

Class : ~~1st~~ Second year Course Code : Organic Farming
Students

Roll No.	Name of the Student	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	17-028 N. SAI PRAKASH	2/12	1	2	A	A	A	A	3	4	A	5						
2	051 G. ASHOK KUMAR	4/12	2	2	3	4	5	6	7	8	9	10	11	12	13	A	A	
3	047 P. SHUSHMA	5/12			1	2	3	4	5	6	A	7	8	A	9	10		
4	17-139 L. NAVEEN KUMAR	6/12	1	2	3	4	A	5	6	7	8	9	10	11	12	13	14	
5	140 P. NAGARJUNA	7/12	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
6	150 P. RAJU	10/12	1	2	3	4	5	A	6	7	8	9	A	10	11	12	13	
7	155 S. PRABHU DAS	11/12	1	2	3	A	A	4	5	6	7	A	A	A	8	9		
8	164 K. ABHISHEK	12/12	1	2	A	A	A	3	4	5	A	6						
9	167 V. SIVA NAGA RAJU	13/12	1	2	A	3	A	A	4	5	6	7	8	9	10	11		
10	169 M. SIVA NAGA RAJU	14/12	1	2	3	4	A	5	6	7	8	9	10	11	12	13	A	
11	172 G. LAKSHMI NARAYANA	15/12			1	A	A	2	3	4	5	6	7	8				
12	17-235 G. BHAGYA LAKSHMI	16/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
13	236 Ab. SHABANA SULTANA	17/12	1	2	3	4	5	6	7	8	A	9	10	11	12	13	14	
14	17-331 P. POOJA	18/12	1	2	3	4	5	6	7	8	A	9	10	11	A	12	14	
15	17-352 V. JANAKI	19/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
16	333 S. RADHA KRISHNA	20/12	1	2	A	A	A	3	4	5	A	6	A	7	A	8	9	
17	334 P. LOSHINI RAMYA	21/12	1	2	3	4	5	6	7	8	A	9	10	11	12	A	13	
18	335 M. SINDHURA	22/12	1	2	3	4	5	6	7	8	9	10	11	A	A	A	A	
19	337 D. HARITHA	23/12	1	2	A	3	4	A	5	6	7	8	9	10	11	12	13	
20	17-401 P. BHARGAVI	24/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	
21	403 M. APARNA	25/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
22	405 K. NAGA SINDHA	26/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	
23	406 K. RAMYA	27/12	1	2	3	4	5	6	7	8	A	9	10	11	12	A	13	
24	407 K. ANUSHA	28/12	1	2	3	4	A	5	6	7	8	9	10	11	12	A	13	14
25	408 P. RAJYA LAKSHMI	29/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	
26	410 Md. NASEEMA	30/12	1	2	3	4	5	6	7	8	9	10	11	12	13	A	14	
27	411 K. ANITHA	31/12	1	2	3	4	5	6	7	8	9	10	11	12	13	A	14	
28	416 P. K. S. SUHASINI	1/1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	

2018-2019

Class : Second year Course Code :

6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th

Roll No.	Name of the Student	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
29/417	G. SAI KUMAR	3/12	1	2	A	A	3	4	5	6	7	8	9	10	11	A	A	
30/419	J. SAMBA SIVARAO	4/12	1	2	3	4	5	A	6	7	8	9	10	11	12	13	14	
31/17-513	D. DEEPTHI	5/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
32/17-514	Y. RUSHYANTH	6/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	
33/515	T. NAGA DIVYA	7/12	1	2	3	4	5	6	7	8	A	9	10	11	A	A	A	
34/516	CH. VIMALA KUMARI	8/12	1	2	3	4	5	6	7	8	9	10	11	A	A	12	13	
35/525	B. CHANDANA	9/12	1	2	3	4	5	6	7	8	9	10	A	12	13	14	15	
36/520	D. DEEPIKA	10/12	1	2	3	4	5	A	6	7	A	A	A	A	A	A	8	
37/17-713	G. SUNEETHA	11/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
38/726	P. SUSWETHA	12/12	1	2	3	4	A	5	6	7	8	9	10	11	12	13	14	
39/733	P. SAI SONIYA	13/12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
40/737	D. SIREESHA	14/12	1	2	3	4	A	5	6	7	8	9	10	11	12	13	14	
41/740	V. SIVA KUMARI	15/12	1	2	A	3	4	5	6	7	8	9	10	11	12	13	14	15
42/17-029	K. PAVAN KALYAN		A	A	1	2	3	A	4	5	6	7	8	9	10	A	11	
43/17-038	CH. DAGLAS		A	A	1	2	3	A	4	5	6	7	8	9	10	A	A	
44/17-050	T. RAJESH		A	A	1	2	3	4	5	6	7	8	9	10	11	12	13	
45/17-056	M. BHAVYA SRI		A	A	1	2	3	4	5	6	A	8	9	10	A	A		
46/17-404	Ab. FATHIMA		A	A	1	2	3	4	5	6	7	8	9	10	11	12	13	
47/17-420	D. RAMYA SAI		A	A	1	2	A	A	3	4	A	5	6	7	8	A	9	
48/17-030	M. VINAYA BABU						1	2	3	4	A	5	6	A	A	8	9	
49/17-337	K. NAGARJUNA					1	2	3	4	5	6	7	8	9	10	11	A	
50/17-306	A. KAVYA SRI							1	2	3	4	A	5	6	7	8	A	
51/17-309	V. CHAITHANYA							1	2	3	A	4	5	6	7	8	9	
52/17-310	CH. SINDHU							1	2	3	4	5	6	7	8	A	9	
53/17-311	K. USHARANI							1	2	3	A	4	5	6	7	A	A	
54/17-033	A. BALA SAI										1	2	A	3	4	A	5	

Handwritten signatures and marks at the bottom of the page.

Title of the Paper: Organic Farming

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
417	A	A	A	A	A	13	14	A	*		A	15			15																
419	15	16	A	17	18	19	20	21			22	23			23																
513		15	16	17	18	19	20	21	22		23	24			24																
514		15	16	17	18	19	20	21	22		23	24			24																
515		A	12	A	13	A	A	A	14		15	16			16																
516	15	15	16	17	18	19	20	21			22	23			23																
525		16	17	18	A	19	20	21	22		23	24			24																
520		A	9	A	10	11	12	13	14		15	16			16																
713		16	17	18	19	20	21	22	23	A	A	24			24																
726		15	16	17	18	19	20	21	22	23	24	24			24																
833		16	17	18	A	19	20	21	22		23	24			24																
857		15	16	17	18	19	20	21	22		23	24			24																
860		A	A	A	16	17	18	19	20		21	22			22																
029		12	13	14	15	16	17	18	19		20	21			21																
033		11	.	.	.	12	13	14	A		15	16			16																
050		A	14	15	16	17	18	19	20		21	22			22																
056		11	12	A	A	13	14	15	16		17	18			18																
004		14	15	16	A	17	18	19	20		21	22			22																
040		A	10	A	11	A	A	A	A		A	12			12																
030		A	A	10	11	12	A	13	14		A	15			15																
237		12	13	14	15	16	17	18	19		20	21			21																
306		10	A	11	12	13	14	A	15		16	17			17																
309		10	A	A	11	A	12	13	14		15	16			16																
310		A	A	A	10	11	12	A	13		14	15			15																
311		8	A	9	10	12	13	14	15		16	17			17																
033		6	7	8	9	10	11	12	13		14	15			15																

~~001~~ ~~002~~ ~~003~~ ~~004~~ ~~005~~ ~~006~~ ~~007~~ ~~008~~ ~~009~~ ~~010~~ ~~011~~ ~~012~~ ~~013~~ ~~014~~ ~~015~~ ~~016~~ ~~017~~ ~~018~~ ~~019~~ ~~020~~ ~~021~~ ~~022~~ ~~023~~ ~~024~~ ~~025~~ ~~026~~ ~~027~~ ~~028~~ ~~029~~ ~~030~~ ~~031~~ ~~032~~ ~~033~~ ~~034~~ ~~035~~ ~~036~~ ~~037~~ ~~038~~ ~~039~~ ~~040~~ ~~041~~ ~~042~~ ~~043~~ ~~044~~ ~~045~~

Class : Second years

Course Code : Organic Farming

6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th 6th

Roll No.	Name of the Student	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			21/1	22/1	20/1	24/1	25/1	23/1	24/1	20/1	1/2	1/2	1/2	1/2	1/2	1/2	1/2
1.	17.008	D. Nanayana	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2.	17.113	V.S.S. Prasad	A	1	2	3	A	A	4	5	6	7	8	9	10	A	A
3.	17-119	N. Hemanth	1	2	3	4	A	A	5	6	7	8	9	10	11	12	A
4	17-122	Ph. Sharif	1	2	3	4	A	5	6	7	8	9	10	11	12	A	A
5	17-130	D. Kvanthi Kumar	1	2	3	4	A	A	5	6	7	8	9	10	11	A	A
6.	17-137	M. Konda Swamp	1	2	3	A	A	A	4	5	6	7	8	9	10	A	A
7.	17-141	D. Banthi Kumar	1	A	A	2	3	A	5	6	7	8	9	10	11	12	A
8.	17-151	P. Ajay Kumar	1	A	2	3	4	A	5	6	7	8	9	10	11	A	A
9.	17-231	B. Sai Prathusha	A	P	2	A											
10.	17.241	P. Baghya Raju	A	P	A	2	3	A	5	6	7	8	9	10	11	12	13
11.	17.409	N. Chandram	1	A	2	3	4	5	6	7	8	9	10	11	12	13	14
12.	17.421	M. Meghana	A	P	2	3	4	5	6	7	8	9	10	11	12	13	14
13.	17.422	K. Siva Ruma Krishna	P	A	2	3	A	4	5	6	7	8	9	10	11	A	12
14.	17.423	P. Veena Venkateswara Rao	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	17.424	G. Y. S. Pavan	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14
16	17.426	S. Thrinadh	A	1	2	A	3	4	5	6	7	8	9	10	11	12	13
17.	17.427	K. Revathi	P	2	3	4	5	6	7	8	9	10	11	12	13	14	A
18.	17.428	I. Lavanya	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
19.	17-431	S. Parameswari	1	2	3	4	5	6	7	8	A	9	10	11	12	13	14
20.	17-432	K. Hepsibha	1	2	3	4	5	A	6	7	A	8	9	10	11	12	13
21.	17-433	P. Rama Krishna	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
22.	17-502	G. Sandeep	A	1	2	3	4	5	6	7	A	8	9	10	11	A	12
23.	17-503	K. Mounika	1	2	3	4	5	6	7	8	A	9	10	11	12	13	14
24.	17-505	K. Tejaswi	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
25.	17-508	V. Bhangavi	A	1	2	3	4	5	6	7	A	8	9	10	11	12	13
26.	17-509	A. Vijaya Rani	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
27	17-512	B. Sreekanth	A	1	A	2	3	4	5	A	A	6	7	8	9	A	10
28	17-706	K. Teja Srilakshmi	1	2	3	4	A	5	6	7	A	8	9	10	11	12	13
29	17-721	T. Swetha	1	2	3	4	5	6	7	A	8	10	11	12	13	14	

Class : Second Years Course Code : Organic Farming .

Roll No.	Name of the Student	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
30	17-723	M. Ananth	1	A	A	A	A	A	2	3	4	5	6	7	8	9	10	
31	17-807	A. Chitranjevi	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
32	17-812	Ch. Raja Babu	A	1	A	2	A	A	3	4	5	6	7	8	9	10	11	
33	17-814	V. Luthen Srasanna Kumara	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
34	17-815	Sd. Rasal	1	2	3	4	5	6	7	8	9	10	12	13	14	15	A	
35	17-817	S. Mahesh .	1	2	3	4	A	5	6	7	8	9	10	11	12	13	A	
36	17-820	D. Madhava Krishna	1	2	3	4	A	5	6	7	8	9	10	11	12	13	14	
37	17-824	Sai Purdvi	A	1	3	A	A	A	4	5	6	7	8	9	10	11	A	
38	17-828	B. Hansi Babu	1	2	3	A	A	A	5	6	7	8	9	10	11	12	13	
39	17-830	K. L. Kith	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
40	17-825	sk. Meera vali 11/3/19 no	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
41	17-837	V. Bala Krishna	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
42	17-841	J. Siva Sai Krishna 11/3/19	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
43	17-851	Ab. Mallek	1	A	3	A	A	A	4	5	6	7	8	9	10	11	A	
44	17-852	Md. Ashfaq	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
45	17-854	Ch. Ajay Babu.	1	2	3	4	A	5	6	7	8	9	10	11	12	13	A	
46	17-855	B. Ramu	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
47	17-856	K. Mohan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
48	17-859	P. Durga Vana Prasad	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	
49	17-867	Y. Revanth Kumar.	1	2	3	4	A	5	6	7	8	9	10	11	12	13	14	
50	17-868	K. Vinod Kumar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
51	17-869	A. Ziaur Rahman	1	2	3	4	A	5	6	7	8	9	10	11	12	13	14	
52	17-870	Md. Ibraheem	1	2	3	A	A	A	4	5	6	7	8	9	10	11	A	
53	17-873	P. Ankarao	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
54	17-425	G. Teja Venugopal.	A	A	1	2	3	4	5	6	7	8	9	10	11	12	13	
55	17-426	G. Nagendra Babu.	A	A	1	A	A	2	3	4	5	6	7	8	9	10	A	
56	17-642	T.V.R. S. Phaniendra						1	2	3	4	5	6	7	8	9	10	A
57	17-644	A. Nataraj						1	2	3	4	5	6	7	8	9	10	A
58	17-647	K. L. Niranjana Raju						1	2	3	4	5	6	7	8	9	10	11

Class :

Course Code :

5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th

Roll No	Name of the Student	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
59	17-648 K. Sudhakar						1	2	3	4	5	6	7	8	9	10	11
60	17-660 Ch. Vinay Sai						1	2	3	4	5	6	7	8	9	10	11
61	17-645 P. Sunesh.						1	2	3	4	5	6	7	8	9	10	
62	17-659 N. v. v. Sambasiva Rao.						1	2	3	4	5	6	7	8	9		A
63	17-725 R. Lakshma Sri Arachava.						1	2	3	4	5	6	7	8	9	10	
64	17-917 M. Priyanka						1	2	3	4	5	6	7	8	9		

~~Signature~~

Organic Farming Students List 3

2018-2019

SNo	Reg. No.	Name of the Student	50/ ^{Marked} Marks	Certificate Issued Signature
<u>II. B.A.</u>				
1	17-11008	D. NARAYANA	30	D. Narayana
2	1711028	N. SAI PRAKASH	27	N. Sai Prakash
3	1711029	K. PAVAN KALYAN	20	K. Pavan Kalyan
4	1711030	M. VINAY BABU	26	M. Vinaybabu
5	1711033	A. BALA SAI	20	A. Bala Sai
6	1711038	CH. DAGLAS	23	ch. daglas
7	1711047	P. SUSHMA	46	P. sushma
8	1711050	J. RAJESH	27	J. Rajesh.
9	1711051	G. ASHOK KUMAR	23	G. Ashok Kumar
10	1711056	M. BHAVYA SRI	27	m. Bhavya Sri
<u>II. B.Com.</u>				
11	1721113	V. S. S. PRASAD	23	V. S. S. Prasad
12	1721119	N. HEMANTH	32	N. Hemanth
13	1721122	PH. SHARIF	20	P. H. Sharif
14	1721130	D. KRANTHI KUMAR	24	D. Kranthi Kumar
15	1721137	M. KONDA SWAMI	28	m. Konda Swami
16	1721139	L. NAVEEN KUMAR	27	L. Naveen Kumar
17	1721140	P. NAGARJUNA	34	P. Nagarajuna
18	1721141	D. BARATH KUMAR	28	D. Barath Kumar
19	1721150	P. RAJU	25	P. Raju
20	1721151	P. AJAY KUMAR	24	P. Ajay Kumar
21	1721155	S. PRABHUDAS	22	S. Prabhudas
22	1721164	K. ABHISHEK	20	K. Abhishek
23	1721169	M. SIVA NAGA RAJU	20	M. Siva naga Raju
	1721172	EENP		-
116	1721167	Y. SIVA NAGA RAJU	21	Y. S. N. Raju

S.No	Reg.No.	Name of the Student	50M Marks	Certificate Issue Signature
<u>II MPC (TM)</u>				
24	1731217	M. PRIYANKA	22	M. Priyanka
25	1731235	G. BHAGYA CAKSHMI	29	G. Bhagyalakshmi
26	1731236	Ab. SHABANA SULTANA	41	shabana sultana
27	1731237	K. NAGARJUNA	24	K. Nagarjuna
28	1731241	P. BAGHYA RAJU	23	P. Bhagya Raja
<u>II MPC (EM)</u>				
29	1731401	P. BHARGAVI	36	P. Bhargavi
30	1731403	M. APARNA	43	M. Aparna
31	1731404	Ab. FATHIMA	38	A. Fathima
32	1731405	K. NAGA SUDHA	36	K. Nagasudha
33	1731406	K. RAMYA	28	K. Ramya
34	1731407	K. ANUSHA	24	K. Anusha
35	1731408	P. RAJYA CAKSHMI	35	P. Rajyalakshmi
36	1731409	M. CHANDRAM	22	M. Chandras vardhan
<u>II B.Z.C (TM)</u>				
37	1741306	A. KANYA SRI	26	A. Kanya Sri
38	1741309	V. CHAITHANYA	24	V. Chaithanya
39	1741310	CH. SINDHU	30	Ch. Sindhu
40	1741311	K. USHA RANI	31	K. Usha Rani
41	1741331	P. POOJA	27	P. Pooja
42	1741332	V. JANAKI	43	V. Janaki
43	1741333	S. RADHA KRISHNA	29	Blank
	1741334	P. LOSHINI RAMYA	29	P. Loshini Ramya
	1741335	M. SINDHURA	40	M. Sindhura
	41337	D. HARITHA	32	D. Haritha

Sno	Reg. No.	Name of the Student	50M Marks	Certificate Issued Signature
<u>II MPC(E)</u>				
47	1731410	MD. NASEEMA	25	Md. Naseema
48	1731411	K. ANITHA	28	K. Anitha
49	1731416	P.K.S. SUHASINI	40	P.K.S. Suhasingi
50	1731417	G. SAI KUMAR	32	G. Sai Kumar
51	1731419	J. SAMBA SIVARAO	30	J. Samba
52	1731420	D. RAMYA SAI	36	D. Ramyasai
53	1731421	M. MEGHANA	22	M. Meghana
54	1731422	K. SIVA RAMA KRISHNA	20	K. Siva Rama Krishna
55	1731423	P. VEERA VENKATESWARAO	29	P.V. Rao
56	1731424	G. Y. S. PAVAN	25	G.Y.S. Pavan
57	1731425	G. TEJA VENU GOPAL	25	G. Tejavenu Gopal
58	1731426	S. THRINADH	24	S. Thrinadh
59	1731427	K. REVATHI	29	K. Revathi
60	1731428	I. LAVANYA	32	I. Lavanya
61	1731431	D. PARAMESWARA	34	D. Parameswari
62	1731432	K. HEPSIBHA	40	K. Hepsibha
63	1731433	P. RAMA KRISHNA	28	P. Rama Krishna
64	1731436	G. NAGENDRA BABU	31	G. Nagendra Babu
<u>II B2C(E)</u>				
65	1741502	G. SANDEEP	27	G. Sandeep
66	1741503	K. MOONIKA	46	K. Mounika
67	1741505	K. TEJASWI	39	Tejaswi Kote
68	1741508	V. BHARGAVI	31	V. Bhargavi
69	1741509	A. VIJAYA RANI	49	A. Vijaya Rani
70	1741512	B. SRIKANTH	26	B. Srikanth
71	1741513	D. DEEPTHI	47	D. Deepthi
72	1741514	Y. RUSHYANTH	40	Y. Rushyanth

S.NO	Reg.No.	Name of the student	Marks	Certificate issue Signature	Sno
73	1741515	T. NAGA DNYA	42	T. Naga Dnya	
74	1741516	CH. VIMALA KUMARI	36	ch. Vimala	93
75	1741520	D. DEEPIKA	42	D. Deepika	94
76	1741525	B. CHANDANA	32	B. Chandana	95
					96
					97
					98
					99
<u>II mpcs.</u>					
77	1751642	T.V.R. S. PHANINDRA	26	T. Phanindra	100
78	1751644	A. NATARAJ	22	A. Nataraj	101
79	1751645	P. SURESH	25	P. Suresh	102
80	1751647	K. L. NIRANJANA RAJU	31	K. L. Niranjana Raju	103
81	1751648	K. SUDHAKAR	25	K. Sudhakar	104
82	1751659	N.V.V. SAMBA SIVA RAO	20	N.V.V. S.S. Rao	105
83	1751660	CH. VINAY SAI	20	ch. Vinay Sai	106
					107
					108
<u>II mcco</u>					
84	1753706	K. TEJA SRI LAKSHMI	35	K. Teja Sri Lakshmi	109
85	1753713	G. SUNEETHA	42	G. Suneeetha	110
86	1753721	T. SWETHA	21	T. Swetha	111
87	1753723	M. ANANTH	24	M. Ananth	112
88	1753725	R. L. SRI ARCHANA	—	ABSENT	113
89	1753726	P. SUSWETHA	24	P. Suswetha	114
90	1753733	P. SAI SONIYA	21	P. Saisuniya	115
91	1753737	D. SIREESHA	35	D. Sireesha	116
92	1753740	V. SIVA KUMARI	29	V. Siva Kumari	

Sno	Reg. No	Name of the Student	50m Marks	Certificate issued signature
	<u>U B Com (Comp)</u>			
93	1752807	A. CHIRANJEEVI	33	A. Chiranjeevi
94	1752812	CH. RAJA BABU	32	Ch. Raja
95	1752814	V. L. PRASANNA KUMAR	28	V.L. Prasanna Kumar
96	1752815	Sd. RASUL	26	Sd. Rasul
97	1752817	S. MAHESH	30	S. Mahesh
98	1752820	D. MADHAVA KRISHNA	34	Madhu.
99	1752824	SAI PRUDH	—	ABSENT
100	1752825	SK. MEERA VALI	24	SK. Meera Vali
101	1752828	B. HARI BABU	28	B. Hari Babu
102	1752830	K. LIKITH	25	K. Likith
103	1752837	V. BALA KISHORE	28	V.B. Kishore
104	1752841	J. SIVA SAI KRISHNA	33	J. g. Vasai Krishna
105	1752851	Ab. MALLIK	29	A. Mallik
106	1752852	Md. ASHFAQUE	28	Md. Ashfaq
107	1752854	CH. AJAY BABU	28	Ch. Ajay Babu
108	1752855	B. RAMU	31	B. Ramu
109	1752856	K. MDHAN	26	K. Mohan
110	1752859	P. DURGA VARA PRASAD	35	P. Durga vara Prasad
111	1752867	Y. REVANTH KUMAR	27	Y. Revanth Kumar
112	1752868	K. VINOD KUMAR	35	K. Vinod Kumar
113	1752869	A. ZIAUR RAHAMAN	30	A. Ziaur Rahman
114	1752870	Md. IBRAHEEM	20	Md. Ibrahim
115	1752873	P. ANKARAO	41	P. Ankarao
116	1753706	K. Teja		
	1752812	S. Mahesh		

Head Department of 2017-19.
 AG & SGS Sidhartha Degree College
 (Autonomous)
 VUYURU - 521 165.

INTERNAL AUDIT
 IJAC
 AG & SGS Degree College
 VUYURU - 521 165

Total Students
 114



A.G. & S.G. SIDDHARTHA COLLEGE OF ARTS & SCIENCE

(AUTONOMOUS)

Re Accredited with Grade 'A' by NAAC, Bangalore

VUYYURU - 521 165, Krishna Dist., A.P



Certificate

This is to certify that *A. Vijaya Rani* of *II B.Sc* has successfully completed the certificate course in Organic farming organized by the department of *Zoology* during the year 2018 - 2019, in association with IQAC and passed the examination in grade *A*.

S. A. Liranmayee

Course Coordinator

Head Department of Zoology

AG&SG Siddhartha Degree College

S. A. Liranmayee
Principal

VUYYURU - 521 165



**Adusumilli Gopalakrishnaiah & Sugarcane Growers
Siddhartha Degree College of Arts and Science**
Autonomous College :: Aided College of Govt. of AP
NAAC 'A' Grade College
Vuyyuru, Krishna (Dt.), Andhra Pradesh-521165

CERTIFICATE COURSE

TITLE: YOGA

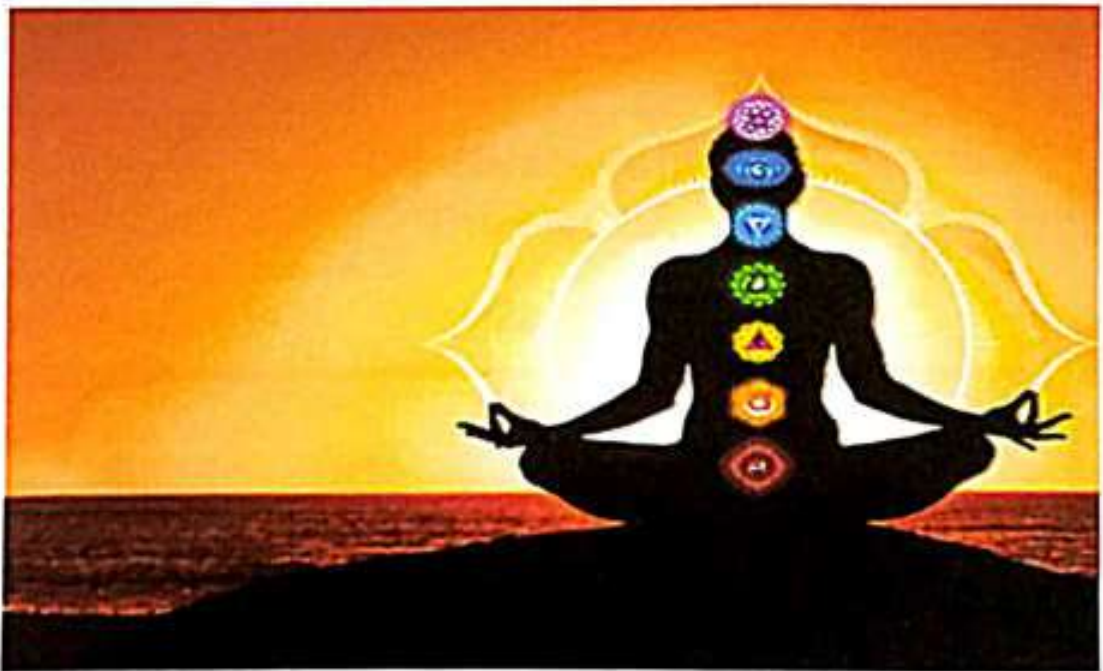
CC CODE: YOG001

On 04-02-2019 to 10-03-2019

Duration of the Course: 30DAYS

Organized By

Department of Telugu



A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)

An Autonomous College in the Jurisdiction of Krishna University

Accredited by NAAC with "A" Grade



DEPARTMENT OF TELUGU

Certificate Course Title: YOGA

2018-19

Name of the Lecturer	:	smt. M.L.S Kumari
Class	:	II B.A/ B.Com/B.Sc
Duration of the Course	:	30 Days (04-02-2019 to 10-03-2019)
CC Code	:	YOG001

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Certificate Course

Title: Yoga

Date: 04-02-2019 to 10-03-2019

Date	Content	Module No.
04.02.2019 To 12.02.2019	Introduction to yoga ,yogic concept of mind and body,Streams of yoga and difference between yoga and Exercise	I
13.02.2019 To 22.02.2019	Standing asanas: I.Tadasana II.padhmasana III.Ardhachakrasana Iv.Trikonasana	II
23.02.2019 To 28.02.2019	SittingAsanas I Vajrasana, II.shashnkasana III.suptavajrasana IV.ustrasana	III
1.03.2019 To 10.3.2019	Pranayama: I.Anuloma -viloma II.Ujjayi III.Shaitali Iv.Sitkari	IV

YOGA

UNIT-1:

➤ INTRODUCTION TO YOGA:

What is Yoga?

Yoga is essentially a spiritual discipline based on an extremely subtle Science which focuses on bringing harmony between mind and body. It is an art and science for healthy living. The word "Yoga" is derived from the Sanskrit root **yuj** meaning "to join", "to yoke" or "to unite".

According to Yogic scriptures, the practice of Yoga leads to the union of individual consciousness with universal consciousness

According to modern scientists, everything in the universe is just a manifestation of the same quantum firmament. One who experiences this oneness of existence is said to be "in Yoga" and is termed as a yogi who has attained a state of freedom, referred to as Mukti, nirvāna, kaivalya or moksha

"Yoga" also refers to an inner science comprising of a variety of methods through which human beings can achieve union between the body and mind to attain self-realisation. The aim of Yoga practice (sādhana) is to overcome all kinds of sufferings that lead to a sense of freedom in every walk of life with holistic health, happiness and harmony.

➤ Yogic concepts of mind & body:

With all the hypē about yoga, there has to be a lot more to it than sitting cross-legged and contorting your body in weird

poses. And there is much more. With over 800 styles of yoga described, how can you find one that you might like?

Rooted in Indian philosophy, yoga is an ancient method of relaxation and regarded by many as a spiritual experience. However, in the last five years yoga has become ubiquitous, with independent studios sprouting everywhere and fitness centers incorporating yoga classes into their group instruction curriculum. Although some people still view yoga as a practice reserved for spiritual seekers looking for inner peace, yoga is rapidly being embraced by many Americans as an alternative or additional way to increase strength, endurance and body tone.

In fact, today many fitness experts recognize yoga as a valuable part of functional training. Functional training (also called functional exercise) has become a buzz word in the fitness industry, used in programs for competitive athletes as well as recreational exercisers. Functional training focuses on endurance, strength and coordination to allow individuals to maximize performance of everyday tasks.

In a weight-training routine, incorporating deadlifts (a great exercise to strengthen the back and thigh muscles) can help to decrease the likelihood of injury and strain in a simple movement like bending over to tie your shoe. Similarly, yoga can functionally develop the body by improving the body's ability to interpret and respond to nerve signals sent back and forth between the muscles and the brain. The increased connectedness of mind, nerves, and muscles results in more fluid body motions and quicker adjustments to unexpected situations like tripping over a curb.

➤ **Streams yoga: Introduction**

Any system or process will be accepted by the common man if it can prove its usefulness in his day to day aspects of life, the Yoga way of life has proven to be very effective in handling issues faced by modern man. The essence of a yogic way of life involves living in harmony with oneself and nature.

However the term Yoga has been found to be used in many contexts leading to confusion on what constitutes Yoga and what is not Yoga. Swami Vivekananda helped in structuring the approaches into various streams of Yoga

Karma Yoga - Introduction

Karma Yoga or The path of work involves an attitude of doing work without expecting the fruits of action. This makes man to get detached from strong attachments and thereby getting him in a state of steadiness or firmness which is yoga as described in Gita. Giving up of actions is not the solution to solve your problems and discharge the responsibilities in the Yoga way.

Bhakti Yoga - Introduction

Bhakti Yoga — Worshipping one's favorite god and surrendering oneself to the God is called Bhakti Yoga, in this modern world, man is tossed up and down due to emotional onslaughts. The path of Bhakti Yoga is a boon to gain control over emotional instabilities by properly harnessing the energy involved in it. In Bhakti Yoga, the practitioner transforms his love material objects like wealth or desires for another human

to unconditional love for the absolute being manifested as personal god.

Jnana Yoga –Introduction

The age of science has made man a rational being, in Jnana Yoga, one beings to understand the reality around you by asking questions and using strong reasoning power. The path of philosophy (Jnana Yoga) is apt for keen intellectuals and is centered around the analysis of “Happiness”. In Jnana Yoga, fundamental questions regarding the mind, the outside and inside world and the reality are taken up.

Raja Yoga - Introduction –

Swami Vivekananda has rightly said, ‘Man is the maker of his own destiny’. As we continue in our journey, various difficulties come in our way. Techniques are therefore needed to systematically channelize our will power to solve these problems that form the core of Raja Yoga.

➤ Difference between yoga and exercise :

What is the Difference Between Yoga and Exercise?

The key difference between yoga and exercise is that yoga stimulates the parasympathetic nervous system, which makes one relaxed, while exercise stimulates the sympathetic nervous system, which makes one tired. Moreover, yoga involves steady

postures and relaxation of muscles, while exercise involves movement and stress on muscles.

The below infographic presents the differences between yoga and exercise in tabular form for side by side comparison.

Summary – Yoga vs Exercise

Yoga is a mental, spiritual and physical practice that originated in India. It is about the parasympathetic nervous system. It is more focused on internal development and improving self-awareness. Exercise, on the other hand, is a physical activity that improves and maintains fitness and makes the person more energized. It stimulates the sympathetic nervous system. It is externally focused, and there is no self-awareness involved in exercises. So, this is the summary of the difference between yoga and exercise.

Unit-2:

Standing asanas:

1. Tadasana

How to do Tadasana (Mountain Pose)

- Stand with your feet slightly apart and make sure that your weight is balanced equally on both feet.
- Inhale, raise your arms above your head, interlock your fingers with palms facing upwards.

- Raise your shoulders up towards your ears and on an exhale, roll your shoulders back and down your spine, opening your chest and straightening your posture.
- Relax all muscles in your face, including your tongue.
- Relax your eyes and maintain a steady gaze.
- Come back to normal position and relax.

Benefits of Tadasana

- It improves posture, opens up the chest and lengthens the spine
- Gently strengthens the thighs, buttock and leg muscles
- It is also beneficial in increasing awareness and concentration
- Reduces flat feet and relieves sciatica
- Releases tension from the face

2. Padhastasana :

What is Padahastasana?

There are several forward bend poses in yoga that help in stretching and strengthening our back and core area, the two main parts necessary for not only maintaining our health but also for making the smallest of the movements.

One such very important pose is Padahastasana that has been practiced for thousands of years. Padahastasana meaning 'hand to foot pose' involves draping of the upper body over the legs and drawing our mind inward. It is an easy pose of yoga for beginners and is also a form of hatha yoga as a part of Surya Namaskar yoga. Padahastasana yoga steps are also done to

regulate and remove the excess air or 'vata' from the body and cure its imbalances.

Who can perform Padahastasana?

If performed carefully, Padahastasana is a gentle and easy yoga posture that can be performed by anyone who wants to enjoy sustained health of the body and mind. Padahastasana yoga steps are especially advised for:

- People who want to improve their flexibility.
- Those who suffer from frequent digestive issues.
- Those who suffer from frequent back pains or stiffness.
- People who want to lose weight.
- Those who want to build on their thigh muscles.
- People who feel that they need to improve their balance and coordination.
- Those who suffer from problems with their nasal and throat areas.
- People who want to improve their metabolism and immunity.
- People who suffer from stress, anxiety, and lack of concentration.
- People suffering from Carpal Tunnel Syndrome.
- Padahastasana can be done by seniors easily.

3. Ardha Chakrasana

Ardha Chakrasana Benefits:

- Ardha Chakrasana is extremely effective to reduce thighs and stomach fat.
- This asana helps to improve your lungs capacity.

- This asana is also helpful to control high blood sugar level and to stimulate the pancreas.
- “Ardha Chakrasana” also helps to increase your back and spine muscles.
- This asana helps to tone your shoulders, thighs, and waist.
- This asana helps to relieve shoulder and neck pain.
- This asana is known to be one of the best exercises to get rid of back pain or lower back pain problem.
- Ardha Chakrasana yoga helps to cure respiratory disorders.

How to perform Ardha Chakrasana (Mountain Pose)?

1. First, raise your hands straight and then bend backwards.
2. You can also place your hands on your hips while bending backwards.
3. When you are bending backwards it is important to not bend your knees.
4. Try to breathe slowly while performing this asana and also hold this position for a few seconds.
5. Now while exhaling you need to come straight to your starting position.
6. Repeat the above steps or 3 to 5 times.

4. Trikonasana

How to do Trikonasana Yoga

1. Stand straight. Separate your feet comfortably wide apart (about 3 1/2 to 4 feet).
2. Turn your right foot out 90 degrees and left foot in by 15 degrees.

3. Now align the center of your right heel with the center of your arch of left foot.
4. Ensure that your feet are pressing the ground and the weight of your body is equally balanced on both the feet.
5. Inhale deeply and as you exhale, bend your body to the right, downward from the hips, keeping the waist straight, allowing your left hand to come up in the air while your right hand comes down towards floor. Keep both arms in straight line.
6. Rest your right hand on your shin, ankle, or the floor outside your right foot, whatever is possible without distorting the sides of the waist. Stretch your left arm toward the ceiling, in line with the tops of your shoulders. Keep your head in a neutral position or turn it to the left, eyes gazing softly at the left palm.
7. Ascertain that your body is bent sideways and not backward or forward. Pelvis and chest are wide open.
8. Stretch maximum and be steady. Keep taking in long deep breaths. With each exhalation, relax the body more and more. Just be with the body and the breath.
9. As you inhale, come up, bring your arms down to your sides, and straighten your feet.
10. Repeat the same on the other side.

Trikonasana Benefits (Triangle Pose Yoga)

Below are the 5 benefits of trikonasana yoga if practised regularly.

1. Strengthens the legs, knees, ankles, arms and chest
2. Stretches and opens the hips, groins, hamstrings, calves, shoulders, chest and spine
3. Increases mental and physical equilibrium
4. Helps improve digestion
5. Reduces anxiety, stress, back pain and sciatica

Unit-3:

Sitting asanas

1. Vajrasana

Benefits of Vajrasana

There have been a number of studies that indicate Vajrasana has positive health benefits, including:

- A small 2010 study^{Trusted Source} of 12 patients concluded that yogic procedures, including Vajrasana, helped reduce discomfort for people with lower back pain.
- A 2011 article indicated that Vajrasana is one of the poses — along with Padmasana, Halasana, Shavasana, and Paschimottanasana — that is useful for hypertension.
- A 2009 study of 30 men concluded that yoga training poses, including Vajrasana, may improve concentration-based performance.

How to do the Vajrasana pose

You can get into the Vajrasana pose in six simple steps:

1. Start by kneeling on the floor. Consider using a yoga mat for comfort.
2. Pull your knees and ankles together and point your feet in line with your legs. The bottoms of your feet should face upward with your big toes touching.

3. Exhale as you sit back on your legs. Your buttocks will rest on your heels and your thighs will rest on your calves.
4. Put your hands on your thighs and adjust your pelvis slightly backward and forward until you're comfortable.
5. Breathe in and out slowly as you position yourself to sit up straight by straightening your spine. Use your head to pull your body upward and press your tailbone toward the floor.
6. Straighten your head to gaze forward with your chin parallel to the floor. Position your hands palms down on your thighs with your arms relaxed.

2. Shashankasana

What is Shashankasana?

Asanas are body postures that may stabilise the body and the mind. In Shashankasana, 'shashank' means moon, hence it is also known as the moon pose. Another name is sasakasana.² Sasaka means hare or rabbit, and asana means posture; hence shashankasana is also known as the hare posture. While performing this pose, it will look like you are sitting like a rabbit. This pose depicts the rounded spine of the rabbit. Shashankasana involves intense forward bending. You can feel a stretch in your back, shoulder and spine.³

How to Do it?

You can perform shashankasana steps in the following way:

- First, sit in the vajrasana position (a sitting posture with your knees bent and palms placed on your knees).

- Then, spread your knees apart and keep your big toes touching each other.
- Inhale gradually and keep your palms between your knees.
- Now exhale slowly and bend forward with your arms outstretched. Put your chin on the ground.
- Keep both your arms parallel to each other.
- Look in the front, keeping your head straight.
- Then come up to the vajrasana position.
- Come to the dandasana position (extend your legs in front of you and keep your back straight).

3. Suptavajrasana

Supta Vajrasana Meaning

In Sanskrit, सुप्त (Supta) means to sleep or supine or reclined. It is interesting to note the etymological intimacy of the Sanskrit word Supta with the English Word Supine. The word supine comes from the Latin Word supinus meaning lying on the back. Both Supta and Supine might have come from the same common root.

Vajra means thunderbolt and Asana is a yoga pose. Hence, it gets the name **Supine Thunderbolt Pose** or **Sleeping Thunderbolt Pose**, or **Reclined Thunderbolt Pose**.

Supta Vajrasana Steps

Step 1

Sit in Vajrasana. Bend back with the support of an elbow first and follow the other elbow next. In this position, the elbows should support the body.

Step 2

Now bring back the head to the floor releasing the support of elbows. Then lie on your back. Subsequently, place the palms on the thighs.

Step 3

Next, bring the top of the head towards the floor by making an arch on your back. Check the knees are still touching the floor.

Step 4

Place the hands on the thighs. Breathe normally. Keep the position as long as it is comfortable.

4. Ustrasana

What is Ustrasana?

'Ustra' means camel and 'asana' means posture or seat. Therefore, Ustrasana is often referred to as the camel pose.³

Camel Pose or Ustrasana is a chest-opening backbend that is energizing and beneficial. It is a wonderful addition to your sequence since it prevents slouching and eases lower back stiffness.⁴

The camel pose yoga allows spine extension without supporting body weight with your arm, unlike chakrasana (wheel pose). The wheel pose is a total body stretch backbend posture that requires more stamina and determination. The camel pose is friendlier and more accessible to yoga learners, especially beginners.⁵

The steps to do the camel pose are as follows:^{3,5}

- Kneel with your thighs parallel to the ground keeping your upper body in a vertical position.
- Put cushions or pads below your knees if they are sensitive.
- Use your hands to push up the rib cage with your thumb resting on the back of the ribs while your four fingers are wrapped around the side of your ribcage.
- The toes should be pressed gently on the floor with the feet positioned in the back.
- Inhale and extend backward from the pelvis to head.
- Exhale and take your right hand back and hold the heel or block.
- Repeat the same step with your left hand.
- Lift the chest and curl the shoulders in the backward position.
- Extend your neck to the maximum length.
- Breathing should be deep and slow.
- Hold the position for a few breaths before exiting the camel pose.

UNIT-4

PRANAYAMA

1.ANULOMA-VILOM

What is Anulom Vilom?

Anulom Vilom is a specific type of pranayama, or controlled breathing, in yoga. It involves holding one nostril closed while inhaling, then holding the other nostril closed while exhaling. The process is then reversed and repeated.

It's a form of alternate nostril breathing.

Alternate nostril breathing is said to have many physical and psychological benefits, including:

- improved breathing
- improved cardiovascular function
- stress reduction

There's scientific evidence that supports some of these claims.

Most people can practice Anulom Vilom breathing safely and without risk. Read on as we look at a step-by-step guide to getting started and the potential benefits of Anulom Vilom breathing.

How to practice Anulom Vilom Pranayama

Anulom Vilom should be done on an empty stomach, preferably 4 hours after you've eaten. You should also find a cool, comfortable environment.

Follow these instructions:

1. Choose a meditation sitting pose. Keep your spine and neck straight and close your eyes.
2. Clear your mind of everything outside of this moment.
3. Start with your outer wrists resting on your knees.
4. Using your right hand, fold your middle and index fingers toward your palm.
5. Place your thumb on your right nostril and your ring finger on your left nostril.

6. Close your right nostril with your thumb and inhale through your left nostril, slowly and deeply, until your lungs are full. Focus on your breathing.
7. Next, release your thumb and close your left nostril with your ring finger.
8. Exhale slowly through the right nostril.
9. Now practice it in reverse, this time inhaling through the right nostril and exhaling through the left.

2. Ujjayi

How to do Ujjayi Pranayama? The Sequence of steps:

1. Close the mouth and constrict the throat (the glottis — a part of larynx).
2. Make a short exhalation and then start inhaling—slowly and rhythmically in one long and unbroken inspiration.
3. Allow the air to pass through the constricted throat, creating a “friction sound”.
4. Continue inhaling till a sense of fullness is felt in the chest.
5. Retain the inhaled air for a period of 6 seconds (preferably double the period of inspiration).
6. Ensure: While sitting spine, head and neck is maintained erect.
7. Facial muscles are relaxed and nose is not constricted. Inhalation is slow and rhythmic – long, unbroken and without jerks.
8. Now exhale as naturally as possible – gradually, avoiding jerky or hasty movements.
9. Take few normal breaths and relax.

Benefits of Ujjayi Pranayama:

1. Helps rectify fluid retention in the body (edema/ dropsy).
2. Clears phlegm & increases appetite.
3. Beneficial in chronic cold, cough, indigestion, liver problems, dysentery, fever and other diseases.

4. Ghatashudhi or purification of seven dhatus (elements)
Skin, flesh, blood, bones, marrow, fat and semen.
5. There is enrichment of the voice.
6. Stimulates and balances the thyroid.

3. Shitali

How to perform Shitali Pranayama



- Set comfortably in any meditative pose like Padmasana, Swastikasana e.t.c.
- Keep your both hands on knees.
- Now bring your tongue all the way out and fold both sides of the tongue like a tube or straw.
- Take a long, deep inhalation through the tube in the tongue which is formed by folding both sides of the tongue.
- After Inhalation closes your mouth and exhales with both nostrils.
- Repeat this about 8 to 10 times.

Benefits of Sheetal Pranayama

- Sheetal Pranayama is useful in diseases related to tongue, mouth and throat.
- It is very beneficial in diseases of the spleen.
- Helpful in fever and indigestion.

- Controls the High B.P.
- Useful in Pitta related diseases.
- It purifies the blood.
- Best for cooling down the body temperature.
- Best for fighting against the Insomnia problem.

4. Sitkari

Meaning of Sitkari

The term "Sitkari" is used in the Sanskrit language for 'Hissing' sound. In sitakari pranayama, when air is sucking in through gap present in the teeth, a 'hiss' sound is produced. The produced hissing sound is the same as snakes make when they release their stress and frustration.

Steps to Practice Sitkari Pranayama

- Sit comfortably in a cross-legged pose and align your back body in one line. To deepen the breathing effect, you can close your eyes and emulate **Gyan Mudra** with your hands.
- Now, gently press your upper and lower teeth together, and separate your lips comfortably so that your teeth get exposed to the air.
- Curl your tongue upwards so that lower part of tongue touches the upper palate. (If you aren't able to curl your tongue, just rest your tongue at the back of the teeth)
- Now breathe-in slowly & deeply through the gaps present in the teeth. Feel the air is filling up your abdomen, followed by chest & neck portion in the end. During your breath inhalation, a small hissing sound will be made.

- Now close your lips (eventually mouth) and exhale through your nose slowly in a controlled way.
- This completes 1 round of Satakari Pranayama.

A.G. & S.G. Siddhartha Degree College of Arts & Science

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Certificate Course

Title: Yoga

Objectives : The main aim yoga is integrating the body, mind and thoughts. so as to work for good ends. Modern life style Leads to Diseases which are mostly due to poor food habits, heavy daily routines and to air and water pollution in turn easily affect the human body.

Methodology : Teacher –centered method.

Duration : 30 hours (04-02-2019 to 10-03-2019)

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Certificate Course
Title: YOGA

Test Exercise:

1. Which state of our consciousness corresponds to deep sleep?
2. Five types of yoga according to patanjali ?
3. There are twenty-six postures that make up Bikram Yoga. Which of these is not one of those postures?
4. Which one is not a part of Sukshma Vyayama?
5. The word "Nadi" is derived from the word "Nad" which means ?
6. What is the ability to be patient during a demanding situation known as?
7. Which Mudra destroys all diseases of the rectum and prevents premature death?
8. During yoga breathing should be.
9. What are the five elements in yoga?
10. Yoga is not related to samkhya

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Certificate Course
Title: YOGA

Key:

1. sushupti
2. Ahimsa,asteya,satya, brahmacharya,asana
3. Sun salutation pose
4. Tongue
5. To flow
6. uparati
7. Brahmi mudra
8. deep
9. Earth,space,fire,air,akash
10. False

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Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course

Student Enrolment Sheet

Class: BBA, B.Com, B.Sc

2018-2019

S. No	Roll No.	Name of the Student	Signature
1	006	S. Charuṭnā Sōi	S. Charuṭnā Sōi
2	011	M. Pragathi Sōi	M. Pragathi Sōi
3	016	Ch. Sai Lakshmi	Ch. Sai Lakshmi
4	048	P. Nami	P. Nami
5	053	G. Dhama Lakshmi	G. Dhama Lakshmi
6	101	V. Sravani	V. Sravani
7	109	D. Spandana	D. Spandana
8	122	N. Sravani	N. Sravani
9	132	M. Madhavi	M. Madhavi
10	133	S. Nitya	M. Nitya
11	140	D. Suneetha	D. Suneetha
12	203	G. Sravani	G. Sravani
13	205	K. Sandhya	K. Sandhya
14	212	Ch. Mahi	Ch. Mahi
15	214	S.D. Vysnamavi	S.D. Vysnamavi

M. U.S. Kumar
Lecturer
Signature

HOD Signature

Value Added Course / Certificate Course

Student Enrolment Sheet

Class: B.A, B.Com, B.Sc *2018-2019*

S. No	Roll No.	Name of the Student	Signature
1	215	B. Pujitha	B. Pujitha
2	221	G. Ravi Teja	G. Ravi Teja
3	222	A. Naga Sai	A. Naga Sai
4	223	M. Venkata Kumar	M. Venkata Kumar
5	224	T. Vinod Kumar	T. Vinod Kumar
6	225	K. Naga Babu	K. Naga Babu
7	226	M. V. S. Naga Sai	M. V. S. Naga Sai
8	227	P. Smily	P. Smily
9	229	M. Sai Teja	M. Sai Teja
10	602	L. Naga Padma	L. Naga Padma
11	607	R. Bhanu Sori	R. Bhanu Sori
12	611	K. Harika	K. Harika
13	612	G. Sampurna	G. Sampurna
14	617	G. Jahnvi	G. Jahnvi
15	619	K. Hinduja.	K. Hinduja.

M. V. S. Kumari
Lecturer
Signature

HOD Signature.

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section : II B.A, B. Com, B.Sc. Year : 2018 - 2019

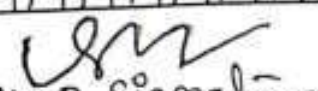
Department of: Telugu

Paper : YOGA

Lecturer : M. C. S. Cumari

Sl. No	Roll No	Student Name	Cate-gory																Total
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	006	S. Charithra Sree		P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	13
2	011	N. Pragathi Sree		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
3	016	Ch. Sai Lakshmi		P	P	P	P	P	P	A	P	P	A	P	P	P	P	P	14
4	048	P. Nani		P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	13
5	053	G. Dhana Lakshmi		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
6	101	V. Sravani		P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	13
7	109	D. Spandana		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
8	122	N. Sravani		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
9	132	M. Madhavi		P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	13
10	133	S. Nistaja		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
11	140	D. Sumeltha		P	P	A	P	P	P	P	A	P	P	P	P	A	P	P	12
12	203	G. Sravani		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
13	205	K. Sandhya		P	P	P	P	A	A	P	P	P	A	P	P	P	P	P	12
14	212	Ch. Mani		P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
15	214	S. D. Vyshnavi		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
16	215	B. Poojitha		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
17	221	G. Ravi Teja		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
18	222	A. Naga Sai		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	13
19	223	M. Venkata Kumar		P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	14
20	224	T. Vinod Kumar		P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	13
21	225	K. Naga baby		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
22	226	M. V. S. Naga Sai		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
23	227	P. Smily		P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	13
24	229	M. Sai Teja		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
25	602	C. Naga Padma		P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	13
26	607	R. Bhanu Sree		P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
27	611	K. Harika		P	P	P	A	P	P	P	P	P	A	P	P	P	P	P	13
28	612	G. Sampurna		P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
29	617	G. Jaghnavi		P	P	P	P	A	P	P	P	P	P	A	P	P	A	P	13
30	619	K. Himadria		P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	14

M. C. S. Cumari
Lecturer
Signature


HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Class / Section : II B.A, B.Com, B.Sc Year : 2018-2019.

Department of: Telugu .

Paper : yoga

Lecturer :

Sl. No	Roll No	Student Name	Category	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	006	S. Charitha Sori		P	P	P	P	P	A	P	P	A	P	P	P	P	P	P	13
2	011	N. Pragathi Sori		P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	13
3	016	Ch. Sai Lakshmi		P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14
4	048	P. Nani		P	P	P	A	P	P	P	P	P	P	P	A	P	P	P	13
5	053	G. Dhana Lakshmi		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
6	101	Y. Sravani		P	P	P	P	P	A	P	P	A	A	P	P	P	P	P	12
7	109	D. Spandana		P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	14
8	122	N. Sravani		P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	13
9	132	M. Madhavi		P	P	P	P	A	P	P	A	P	P	A	P	P	P	P	12
10	133	S. Nimaja		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
11	140	D. Sumeltha		P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	13
12	203	G. Sravani		P	P	P	P	P	P	P	P	P	A	A	A	P	P	P	12
13	205	K. Sandhya		P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	14
14	212	Ch. Nani		P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	13
15	214	S. D. Vyshnavi		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
16	215	B. Poojitha		P	P	P	P	P	P	P	P	P	A	A	P	A	P	P	12
17	221	G. Ravi Teja		A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
18	222	A. Naga Sai		P	P	P	P	P	P	P	P	A	P	P	P	P	A	P	12
19	223	M. Venkata Kumar		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
20	224	T. Vinod Kumar		P	P	P	A	P	P	A	P	P	P	A	P	P	P	P	12
21	225	K. Naga Babu		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
22	226	M. V. S. Naga Sai		P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	14
23	227	P. Smily		P	P	P	P	P	P	P	P	P	P	A	P	P	A	P	14
24	229	M. Sai Teja		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
25	602	L. Naga Padma		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
26	607	R. Bhanu Sori		P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	13
27	611	K. Harika		P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	14
28	612	G. Sampurna		P	P	P	A	P	P	A	P	P	P	A	P	P	P	P	13
29	617	G. Jahnavi		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
30	619	K. Himdeja		P	A	P	P	P	P	P	A	P	P	P	P	P	P	P	13

M. V. S. Kumar
Lecturer
Signature

HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of TELUGU

~~Certificate~~ **Course**

Title: YOGA

Marks List

Class: II B.A, B.Com, B.Sc

***2018-2019 ***

S. No	Roll No.	Name of the Student	Marks
1	006	S. Chaitra Sri	38
2	011	N. Pragathi Sri	42
3	016	Ch. Sai Lakshmi	48
4	048	P. Mani	40
5	053	G. Dhana Lakshmi	45
6	101	V. Sravani	41
7	109	D. Spandana	30
8	122	M. Sravani	35
9	132	M. Madhavi	28
10	133	S. Nirmala	29
11	140	D. Sumitha	30
12	203	G. Sravani	41
13	205	K. Sandhya	38
14	212	Ch. Munni	41
15	214	S. Divija Vyshtari	38

D. Sridhar
PRINCIPAL
AG PSE Siddhartha Degree College of
Arts & Science Vuyyuru

[Signature]
HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Telugu
Certificate Course
Title: YOGA

Marks List

Class: II BA, B.Com, B.Sc

S. No	Roll No.	Name of the Student	Marks
1	215	B. puJitha	35
2	221	G. Ravi TeJa	40
3	222	A. Naga Sai	30
4	223	M.V. Venkata Kumar	30
5	224	T. Vinod Kumar	28
6	225	K. Naga babu	31
7	226	M.V.S. Naga Sai	45
8	227	P. Smily	40
9	229	M. Sai TeJa	32
10	602	L. Naga padma	38
11	607	R. Bhanu Sri	43
12	611	K. Harika	41
13	612	G. Sampurna	48
14	617	G. Jabnavi	48
15	619	K. HinduJa	48

Department of TELUGU

Certificate Course
Title: YOGA

Title: YOGA

Feed Back Form

1. Is the programme interested to you (Yes/No)
2. Have you attended all the session (Yes/No)
3. Is the content of the program is adequate (Yes/No)
4. Have the teacher covered the entire syllabus? (Yes/No)
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No)
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No)
8. Do you have any suggestions on the program? (Yes/No)

P. Sankar
Principal's
AG & SG Siddhartha Degree College of
Arts & Science (A.G. & S.G. Siddhartha Degree College of Arts & Science)
Vuyyuru

[Signature]
HOD Signature

Department of TELUGU

Course Title: YOGA

Title: YOGA.

Feed Back Form

1. Is the programme interested to you (Yes/No)
2. Have you attended all the session (Yes/No)
3. Is the content of the program is adequate (Yes/No)
4. Have the teacher covered the entire syllabus? (Yes/No)
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No)
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No)
8. Do you have any suggestions on the program? (Yes/No)

ch. Munni
(II B.Sc(TM))

D. Suba Kiran
Principal's
AG & SG Siddhartha Degree College of
Arts & Science, Vuyyuru
Signature

[Signature]
HOD Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165 Krishna District, Andhra Pradesh

Department of TELUGU

Certificate Course
Title: YOGA

Title: YOGA

Feed Back Form

1. Is the programme interested to you (Yes/No)
2. Have you attended all the session (Yes/No)
3. Is the content of the program is adequate (Yes/No)
4. Have the teacher covered the entire syllabus? (Yes/No)
5. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No)
7. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No)
8. Do you have any suggestions on the program? (Yes/No)

M. Sravani
(II B.Com)

P. S. Sathish
Principal
AG & SG Siddhartha Degree College of
Arts & Science

[Signature]
HOD Signature



ADUSUMILLI GOPALAKRISHNAIAH AND SUGARCANE GROWERS
SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,
(AUTONOMOUS) VUYYURU A.P
(Accredited at "A" level by NAAC, Bengaluru)



Department of Telugu

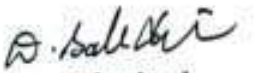
CERTIFICATE COURSE: YOGA

CERTIFICATE

This is to Certify that . P.Nani Son/Daughter of Shri/Smt P.Rama Rao has Successfully completed
Certificate course in **YOGA** Conducted by the Department of Telugu from 04-02-2019 to 10-03-2019
We wish him / her bright future

M. S. S. Srinivasulu
Co-ordinator


Head of Department


Principal
PRINCIPAL
AG & SG Siddhartha Degree College of
Arts & Science (Autonomous), Vuyyuru



**Adusumilli Gopala krishnaiah & Sugarcane
Growers Siddhartha Degree College of Arts
and Science**

Autonomous College :: Aided College of Govt. of AP

NAAC 'A' Grade College

Vuyyuru, Krishna (Dt), Andhra Pradesh-521165

VALUE ADDED COURSE

TITLE: PARTICLE PHYSICS

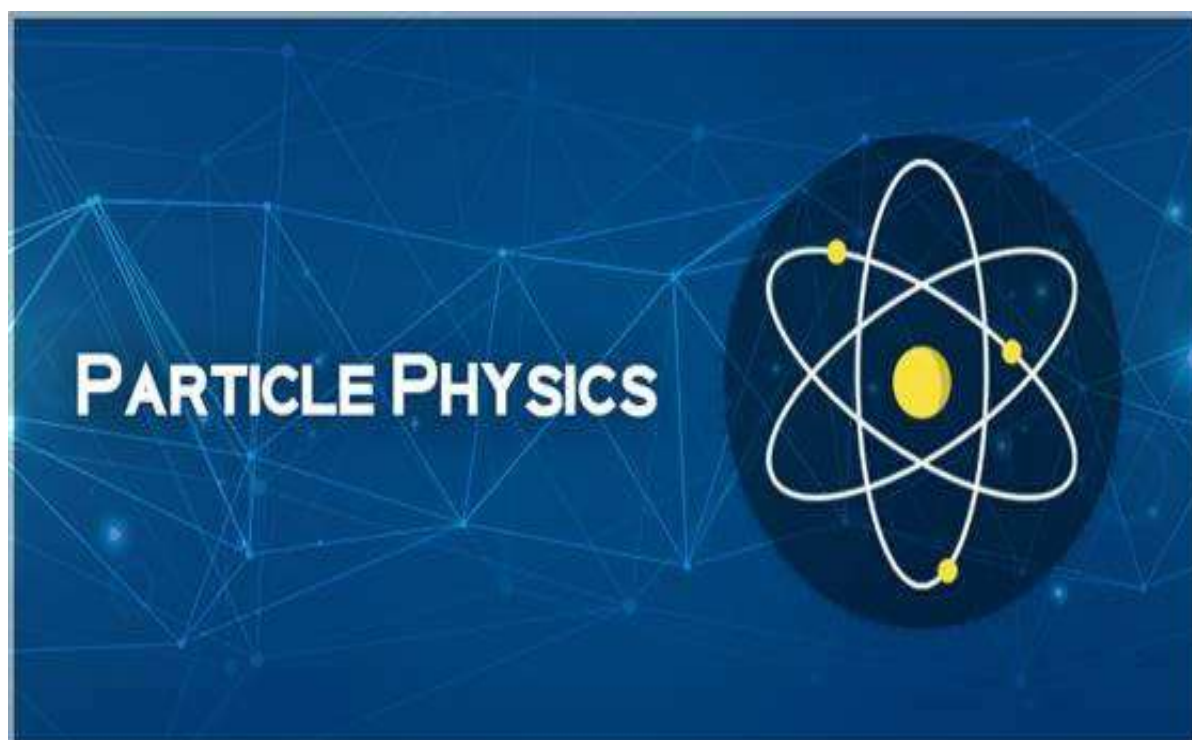
VAC CODE: PHYV2C

On 20th JAN, 2019 TO 20th FEB 2019

Duration of the Course: 30 Days

Organized By

Department of PHYSICS



A.G. & S.G. Siddhartha Degree College of Arts & Science

Vuyyuru-521165, Krishna District, Andhra Pradesh
(Managed by: Siddhartha Academy of General & Technical Education, Vijayawada-10)
An Autonomous College in the Jurisdiction of Krishna University
Accredited by NAAC with "A" Grade

2018-2019



DEPARTMENT OF PHYSICS

Value Added Course/ Certificate Course

Title: PARTICLE PHYSICS

Name of the Lecturer	:	P.V.Ramana
Class	:	II MPCs
Duration of the Course	:	Thirty Days
VAC Code	:	PHYV2C

Objectives:

The goal of elementary-particle physics is to understand the world around us by identifying the elementary particles, understanding their properties, and learning how they interact.

Methodology :

Teacher-centered Method

Duration: 30 Days

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course

Title: PARTICLE PHYSICS

Date: 20/1/2019 TO 20/2/2019

Date	Content	Module No
20/1/2019 TO 26/1/2019	fundamental particles and their searches, Accelerators and colliders	I
27/1/2019 TO 3/2/2019	Basic interactions , Relativity, antiparticles , Rotation, Isospin, Addition of Angular momentum	II
4/2/2019 TO 11/2/2019	Strong interactions, Electromagnetic interactions, Weak interactions	III
12/2/2019 TO 20/2/2019	Einstein mass energy relation	IV

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh


Value Added Course / Certificate Course

2018-19

Student Enrolment Sheet

Class: II B.Sc (MPCs)

S. No	Roll No.	Name of the Student	Signature
1	1751602	V.Teja sri	V. Teja Sri
2	1751604	T.Preethi	T. Preethi
3	1751606	K.Raja Lakshmi	K. Raja Lakshmi
4	1751609	K.Pavan sai bhavani	K. Pavan Sai bhavani
5	1751614	V.Anand Babu	V. Anand Babu
6	1751617	V.Divya	V. Divya
7	1751620	K.Anil	K. Anil
8	1751623	G.Sireesha	G. Sireesha
9	1751627	G.Aruna	G. Aruna
10	1751633	P.V.V.Chinna	P.V.V. Chinna
11	1751639	P.Janu	P. Janu
12	1751643	M.Tarun Sai	M. Tarun Sai
13	1751645	P.Suresh	P. Suresh
14	17516543	K.Vennela	K. Vennela
15	1751659	N.Samba Siva Rao	N. Samba Siva Rao


HEAD OF THE DEPT. OF PHYSICS
A.G. & S.G.S. DEGREE COLLEGE
VUYYURU - 521 165




DEPARTMENT OF PHYSICS
A.G. & S.G.S. DEGREE COLLEGE
VUYYURU - 521 165

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Physics


Value Added Course / Certificate Course

Title: PARTICLE PHYSICS

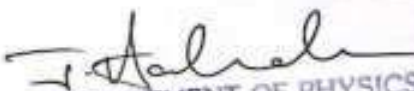
Marks Lists

Class: II BSC, MPCS

S. No	Roll No.	Name of the Student	Marks
1	1751602	V.Teja sri	10
2	1751604	T.Preethi	10
3	1751606	K.Raja Lakshmi	09
4	1751609	K.Pavan sai bhavani	10
5	1751614	V.Anand Babu	09
6	1751617	V.Divya	09
7	1751620	K.Anil	10
8	1751623	G.Sireesha	09
9	1751627	G.Aruna	09
10	1751633	P.V.V.Chinna	09
11	1751639	P.Janu	09
12	1751643	M.Tarun Sai	09
13	1751645	P.Suresh	09
14	17516543	K.Vennela	10
15	1751659	N.Samba Siva Rao	10


HEAD OF THE DEPT. OF PHYSICS
A. G. & S. G. S. DEGREE COLLEGE
VUYYURU - 521 165




DEPARTMENT OF PHYSICS
A. G. & S. G. S. DEGREE COLLEGE
VUYYURU - 521 165

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Value Added Course / Certificate Course - Attendance Register

Sl.No	Roll No	Student Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1	175160 2	V.Teja Sri	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
2	175160 4	T.Preethi	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	14
3	175160 6	K.Raja Lakshmi	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
4	175160 9	K.Pavan sai bhavani	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
5	175161 4	V.Anand Babu	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14
6	175161 7	V.Divya	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14
7	175162 0	K.Anil	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
8	175162 3	G.Sireesha	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14
9	175162 7	G.Arana	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	14
10	175163 3	P.V.V.Chitra	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	14
11	175163 9	P.Janu	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	14
12	175164 3	M.Taran Sai	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
13	175164 5	P.Suresh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
14	175165 43	K.Venoda	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
15	175165 9	N.Santha Siva Rao	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	14


Class / Section: II MPC3
Paper:

Year : 2nd
Lecturer:

Department: PHYSICS
DEPARTMENT OF PHYSICS
A.G. & S.G.S. DEGREE COLLEGE
VUYYURU - 521165


Signature of the Lecturer
of the HOD
HEAD OF THE DEPT. OF PHYSICS
A.G. & S.G.S. DEGREE COLLEGE



 Signature

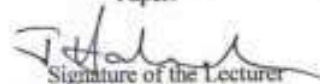
A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Prade
Value Added Course / Certificate Course - Attendance Register

SLNo	Roll No	Student Name	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1	175160 2	V.Tejasri	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	14
2	175160 4	T.Poothi	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	15
3	175160 6	K.Raja Lakshmi	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	14
4	175160 9	K.Prasanna Maravati	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	14
5	175161 4	V.Annad Babu	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	13
6	175161 7	V.Divya	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	14
7	175162 0	K.Anil	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
8	175162 3	G.Suresha	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	14
9	175162 7	G.Anant	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	14
10	175162 3	P.V.V.Chinna	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	14
11	175163 9	P.Janu	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14
12	175164 3	M.Taran Sai	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	14
13	175164 5	P.Suresh	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	14
14	175165 45	K.Veneta	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	14
15	175165 9	N.Santha Niva Rao	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	14

Class / Section: 11 MPCS
Paper:

Year : 2nd
Lecturer:

Department : PHYSICS
DEPARTMENT OF PHYSICS
A. G. & S. G. DEGREE COLLEGE
VUYYURU - 521 165


Signature of the Lecturer
of the HOD
HEAD OF THE DEPT. OF PHYSICS
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Signature

A.G. & S.G. Siddhartha Degree College of Arts & Science
Vuyyuru-521165, Krishna District, Andhra Pradesh

Department of Physics

Value Added Course / Certificate Course

Title: PARTICLE PHYSICS

Feed Back Form

Name of the Student: T. Praveen

Class and Roll Number: 17SI 604

- 6. Is the programme interested to you (Yes/No) ✓
- 7. Have you attended all the session (Yes/No) ✓
- 8. Is the content of the program is adequate (Yes/No) ✓
- 9. Have the teacher covered the entire syllabus? (Yes/No) ✓
- 10. Is the number of hours adequate? (Yes/No) ✓
- 6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No) ✓
- 8. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No) ✓
- 8. Do you have any suggestions on the program? (Yes/No) ✓

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(Yes/No)

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Vuyyuru-521165, Krishna District, Andhra Pradesh

2018-2019

Department of Physics

Value Added Course / Certificate Course


Title: PARTICLE PHYSICS

Feed Back Form

Name of the Student: V. Teja Sni

Class and Roll Number: ka 17 51602

6. Is the programme interested to you (Yes/No)
7. Have you attended all the session (Yes/No)
8. Is the content of the program is adequate (Yes/No)
9. Have the teacher covered the entire syllabus? (Yes/No)
10. Is the number of hours adequate? (Yes/No)
6. Do you have any suggestions for enhancing or reducing the number of weeks designed for the program? (Yes/No)
8. On the whole, is the program useful in terms of enriching your knowledge? (Yes/No)
8. Do you have any suggestions on the program? (Yes/No) (Yes/No)


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Test Exercise:

1. How much of our universe is made of matter or energy, which we do not know about?
2. How do we see “quarks” in a detector?
3. The particles carrying the strong force are the
4. Which of the following technological innovations was invented at CERN
5. Our universe is dominated by...
6. What are the fundamental particles of an atom?
7. What are fermions?
8. What are bosons?
9. What are mesons?
10. What is super string?

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Key:

- 1).96%
- 2). Via “jets” of hadrons they generate
- 3.) gluons
- 4). World Wide Web
5.) Dark energy
- 6) Quarks, gluons and electrons
- 7)) Fundamental particles of matter
- 8) Subatomic particles that carry forces
- 9) A type of composite particle produced by high energy
- 10) A hypothesis which attempts to explain the elementary particles of nature

2) PARTICLE PHYSICS

Module No -1

Elementary particle physics studies the fundamental building blocks of nature. But what fundamental does mean? By fundamental we mean objects that are simple and structureless, not made of anything smaller.

During the past century the word “fundamental” was addressed firstly to the atom. The word “atom” was introduced by Democritus (400 BC) who described the matter as composed by small and indivisible particles (“atom” comes from greek a-temno, which can not be divided). The internal structure of the atom was discovered and protons, neutrons and electrons became the building blocks of matter. After 1960, scattering experiments of high energy particles on nucleons lead to the discovery of the quarks, which are thought now as the fundamental constituents of matter.

Modern particle physics research is focused on subatomic particles, including atomic constituents, such as electrons, protons, and neutrons (protons and neutrons are composite particles called baryons, made of quarks), that are produced by radioactive and scattering processes; such particles are photons, neutrinos, and [muons](#), as well as a wide range of exotic particles. All particles and their interactions observed to date can be described almost entirely by the Standard Model.

Module No -2

Exchange Particles

- When two particles interact, there cannot be instantaneous action at a distance
 - This means one particle needs to "know" that the other is there
- This is the idea behind **exchange** (or **virtual**) particles
- When two particles exert a force on each other, a virtual particle is created
- Virtual particles only exist for a short amount of time and carry the fundamental force between each particle
- A force can be **attractive** or **repulsive**. An analogy of exchange particles would be:
 - Two people are on skateboards and a ball is passed between them. Due to this, they start to move away from each other. The ball represents an exchange particle creating **repulsion**
 - However, if one person throws a boomerang to the other, they will start to move closer together. The boomerang represents an exchange particle creating **attraction**
- Each fundamental interaction is transmitted by its own exchange particle
 - These are also called **gauge bosons**

Fundamental Interaction	Exchange Particle
Strong	pion(π^+ , π^- , π^0) (between nucleons) gluon (between quarks)
Weak	W^+ , W^- , Z^0
Electromagnetic	Photon, γ

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- Since gravity is so weak, it only has a noticeable effect on large masses, therefore, gravity does not play a part in particle interactions
- The theorised exchange particle for the gravitational force is the graviton, however, this has not yet been discovered

Mass-Energy Relation

According to the special theory of relativity, $E = mc^2$ is the relationship between mass and energy. The function of mass is energy. The more mass a body has, the more energy it gains or releases.

The term “**mass-energy relation**” refers to the fact that mass and energy are the same and may be changed into one another. Einstein proposed this concept. However, he was not the first to do so. With his theory of relativity, he accurately described the relationship between mass and energy. The equation is written as $E=mc^2$ and is known as Einstein’s **mass-energy** equation.

Where E is the object’s equivalent kinetic energy, m is the object’s mass (Kg), and c is the speed of light ($c = 3 \times 10^8$ m/s).

Module No -3

Furthermore, the mass-energy relation indicates that the body’s rest mass will drop if energy is released from the body due to such a conversion. Ordinary chemical reactions involve such a transfer of rest energy to other types of energy, while nuclear reactions involve significantly bigger conversions.

Even though a system’s overall mass changes, its total energy and momentum stay constant, according to the **mass-energy relation**. Consider an electron colliding with a proton. Both particles’ mass is destroyed, but a tremendous amount of energy in photons is generated. The concept of the mass-energy equation was important in the development of atomic fusion and fission theories.

Einstein’s **mass-energy relation** is derived in the following way:

Consider an object travelling at around the speed of light. A unified force is acting upon it. Energy and momentum are induced in it due to the applied force. The increase in momentum of the object = mass x velocity of the body because the force is constant.

We know,

Energy acquired= Force x Distance through which force acts

$$E = F \times d \dots\dots\dots (1)$$

Also,

the momentum gained = the force x the time it takes for the force to act.

$$P = F \times t$$

As, momentum = mass x velocity,

The momentum gained $P = m \times c$

$$\text{Hence, Force} = (m \times c)/t \dots\dots\dots (2)$$

When we combine equations (1) and (2), we get $E = mc^2$.

The equation is used to calculate binding energy in an atomic nucleus. Binding energy is calculated by subtracting the sum of the masses of protons and neutrons from the masses of various nuclei. The energy released during nuclear reactions is calculated using binding energy measurements.

Derivation II

At whatever point an article is in speed, it appears to get heavier. The accompanying condition gives the increment in mass because of speed.

$$m = m_0 / \sqrt{(1-v^2/c^2)}$$

Where,

m-mass of the article at the voyaging speed

m_0 -mass of the article at a fixed position

v-speed of the article

c-speed of the light

We know, a moving object has active energy, and it is given by

$$E = \frac{1}{2} (mv^2)$$

All-out energy moved by the item is roughly equivalent to dynamic energy and expansion in mass because of speed.

$$E \cong (mc^2) + \frac{1}{2} (mv^2)$$

$$E - (mc^2) = \frac{1}{2} (mv^2), \text{ for little } v/c$$

$$E = \text{Relativistic dynamic energy} + mc^2$$

The relativistic dynamic energy includes kinetic energy and rest mass energy

$$E = 0 + mc^2$$

$$E = mc^2$$

Module No -4

Conclusion

Mass-energy relation expresses that each article has specific energy even in a fixed position. A fixed body doesn't have active energy. It just has expected energy and likely compound and nuclear power. As indicated by the field of applied mechanics, the amount of this multitude of points is more modest than the result of the particle's mass and the square of the speed of light.

Mass-energy relation implies mass and energy are very similar and can be changed over into one another. Einstein put this thought forward, yet he was not quick to uncover this. He portrayed the connection between mass and energy precisely utilising his relativity hypothesis. The condition is known as Einstein's mass-energy condition and is communicated as,

$$E = mc^2$$

where E = comparable dynamic energy of the article,

m = mass of the item (Kg) and

c = speed of light (roughly = 3×10^8 m/s)



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Department of Physics

VALUE ADDED COURSE: *PARTICLE PHYSICS*

CERTIFICATE

This is to Certify that **V.Tejasri** of **II B.Sc MPCS** has Successfully completed
value added course in **PARTICLE PHYSICS** conducted by the Department of Physics
from 20-01-2019 to 20-02-2019 . We wish him/her bright future

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Department of Physics

VALUE ADDED COURSE: **PARTICLE PHYSICS**

CERTIFICATE

This is to Certify that **V.Anand Babu** of **II B.Sc MPCS** has Successfully completed
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