MAR AUGUSTHINOSE COLLEGE RAMAPURAM

DEPARTMENT OF ELECTRONICS

Scheme and Syllabus of

Value Added Course

2018

MAVAC005 **BASIC COMPUTER NETWORKING**

BOARD OF STUDIES (BoS)

Chairman :- Mr. Abhilash VPandiankal (Asst. prof. Department of Electronics)

Members:-

1. Mr. Ligin Joy (Asst. prof. Department of Electronics)
2. Mrs. Jasmin Antony (Asst. prof. Department of Electronics)
3. Mr. Vineeth Kumar (Asst. prof. Department of Electronics)
4. Mrs. Nice Cyriac (Asst. prof. Department of Electronics)

INTRODUCTION

The Value-Added Courses aims to provide additional learner centric graded skill oriented technical training, with the primary objective of improving the employability skills of students

AIM OF THE PROGRAMME

Understanding various aspects of the subject and acquiring methodological knowledge of them. Application of this knowledge in a suitable manner in required fields.

ELIGIBILITY FOR ADMISSIONS

All UG and PG students from various departments of the college. The number of intakes to the course is limited. The course can be offered only if there are at least 5 students opting for it.

MEDIUM OF INSTRUCTION: **English.**

DURATION OF THE COURSE

The duration of value-added course is 30 hours (including the hours of final examination) of which 15hrs theory and 15hrs for laboratory/demonstration/experimental activities and the course can have a maximum of three hours a day.

The value-added courses will be offered beyond the usual class hours and days of the college.

The value-added course will be a blend of theory classes / experimental learning / project-based learning / assignments / activity-based learning.

COURSE OBJECTIVES

The main objectives of the program are;

1. To bring an awareness about Computer Networking.
2. To bridge the skill gaps and make them ready for industry
3. To provide an opportunity to develop inter-disciplinary skill

4. To give an opportunity and make them aware of how to keep their own network safe from intruders..
5. With basic understanding of Computer Network and practical knowledge making them able to configure a small network by themselves
6. The department provides value added courses for all staff members, villagers and students from all streams of courses.

COURSE OUTCOMES (Cos)

- CO1. Prepare students to get awareness about Computer networking.
- CO2.To creates and troubleshoot small computer networks.
- CO3. To make them aware of using their internet safely like Browsing, Email, Video conferencing etc.

EVALUATION

1. The value-added courses shall be evaluated through an examination at the end of the course.
2. The duration of examination is two hours.
3. The total marks of the examination shall be 100

Components of Evaluation	**Marks**
Attendance	10
Assignment / Seminar	10
Project & Viva	30 (20+10)
External Examination	50
Total	100

Pattern of questions Paper

Sl. No.	Pattern	Marks	Choice of questions	Total marks
1	Short Answer/problem type	**2**	**5/7**	**10**
2	Short essay/problem	**5**	**4/6**	**20**
3	Essay/problem	**10**	**2/4**	**20**
Total				**50**

4. A committee consisting of the Head of the Department, the course coordinator and a senior faculty member nominated by the Head of the department shall monitor the evaluation process.

5. The list of students along with the marks and the grades earned may be forwarded to the Principal/Chief Superintendent of Examinations.
6. The Dept. course coordinator is responsible for maintaining and processing the record with regard to the course, assessment marks and results.
7. Certificates will be issued to those students with 75% attendance, timely submission of assignment and project and a minimum of 40% marks in the qualifying examination.

Grading Pattern

Grades are given **on a 7-point scale** based on the total percentage of marks, ***(ISA+ESA)*** as given below: -

Percentage of Marks	**Grade**
95 and above	**S** Outstanding
85 to below 95	**A**$^{+}$ Excellent
75 to below 85	**A** Very Good
65 to below 75	**B**$^{+}$ Good
55 to below 65	**B** Above Average
45 to below 55	**C** Satisfactory
35 to below 45	**D** Pass
below 35	**F** Failure
Absent	**Ab**

SYLLABUS
MAVAC005 Basic Computer Net Working
Total hours of instruction: 30 Hours

Module I (6 Hours)

Data Communications – Basic components, Introduction to computer networks –Definition-Basic Concepts -Network topologies: LAN, WAN, MAN, PAN, CAN. Uses of network-, OSI model, TCP/IP Protocol Suite.

Module II (6 Hours)

Physical Layer and Media, Switching,– Transmission media, Different types of transmission medium-Multiplexing, Satellite Networks. Cabling and troubleshooting. (Practical session Ethernet Cable Crimping)

Module III (8 Hours)

Data Link Control – Framing, Error detection and Correction, Flow and Error control, IEEE standards 802.3,802.4 and 802.5. Wired LANs: Standard Ethernet, Wireless LANs: Bluetooth, Connecting LANs- Connecting devices. (Practical session of 1.Routers.2. Switches.3. Modems.4. Hubs etc..5. Wired and Wireless technology.)

Module IV (5 Hours)

Network Layer: Logical Addressing, IPv4 addresses, Routing – Static and Dynamic Routing, OSPF, Flooding, Distance Vector Routing and Link state routing. Routing Protocols-IRP, ERP. Congestion and Congestion control – Open loop and Closed loop
(Practical session Network basic and configuration:1. Setting IP addresses,.2. Sharing files and folders.3. Network troubleshooting. 4. PING test, ip config etc.)

Module V (5 Hours)

Brief introduction to the Basic concepts of internet, Usage of internet, Requirements, ISP, WWW, E-mail, Websites -: Application Layer: Types of servers: Domain Name System, Domain Name Space, Distribution, Browser, URL, Search Engine, Electronic mail. Audio-video Conferencing.

DEMONSTRATIONS/PRACTICALS (20 Hrs)

1. Demonstration of Physical Component of Computer Network.
2. Demonstration and installation of Routers, Switches , Modems, Hubs, Wired and Wireless technology.
3. Practical session Network basic and configuration.
4. Demonstration of Network troubleshooting
5. Training on Electronic mail.

Assignment and Project

REFERENCES

1. Behrouz and Forouzan: Introduction to data communications and networking, McGraw Hill
2. Andrew S. Tanenbaum: Computer networks, Prentice Hall of India.
3. William. Stallings: Data and computer communication, Prentice Hall of India.