

**SCHEME**  
**For**  
**M.TECH COURSE**  
**In**  
**COMPUTER ENGINEERING-NETWORKING**  
**(w.e.f Session 2016)**



**DEPARTMENT OF COMPUTER ENGINEERING**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**YMCA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**FARIDABAD**



# **YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY**

## **VISION**

YMCA University of Science and Technology aspires to be a nationally and internationally acclaimed leader in technical and higher education in all spheres which transforms the life of students through integration of teaching, research and character building.

## **MISSION**

- To contribute to the development of science and technology by synthesizing teaching, research and creative activities.
- To provide an enviable research environment and state-of-the art technological exposure to its scholars.
- To develop human potential to its fullest extent and make them emerge as world class leaders in their professions and enthuse them towards their social responsibilities.



## **DEPARTMENT OF COMPUTER ENGINEERING**

### **VISION**

The department aims to make a place at both national and international level by producing high quality ethically rich computer engineers conversant with the state-of-the-art technology with the ability to adapt the upcoming technologies to cater to the ever changing industrial demands and societal needs. It endeavours to establish itself as a centre of excellence by contributing to research areas having IT impact on the people's life and nation's growth.

### **MISSION**

- To provide the future leaders in the area of computer engineering and information technology through the development of human intellectual potential to its fullest extent.
- To enable the students to acquire globally competence through problem solving skills and exposure to latest developments in IT related technologies.
- To educate the students about their professional and ethical responsibilities.
- To ensure continuous interaction with the industry and academia through collaborative research projects.



## **ABOUT THE PROGRAM**

The Master of Technology (M.tech) program in Computer Engineering- Networking is a two year post graduate program which is designed with an aim to provide the students in-depth knowledge of various advanced concepts of computer engineering with special emphasis to networking.

The program provides comprehensive knowledge which is sufficient enough to enhance the critical thinking skills and research ability of the students. Besides the theoretical and laboratory based curriculum, students complete an advanced programming project in the final year of the program including one full semester for research work.



## PROGRAMME EDUCATION OBJECTIVES

PEO1	To enhance the competence level for tackling real world problems in industry, academia and research organizations
PEO2	To sharpen problem solving ability using in depth analysis based upon state-of-the-art concepts and technology
PEO3	To create awareness about professional ethics, multidisciplinary approach, entrepreneurial thinking and effective communication.

## PROGRAMME OUTCOMES

PO1	Ability to learn & apply advance concepts to generate novel solutions for solving complex computational problems.
PO2	Ability to effectively adopt & adapt recent technology for finding efficient solutions to the contemporary problems.
PO3	Ability to act as an effective human resource in industry & academia for socio-economic growth.
PO4	Ability to pursue research and create knowledge to meet the present and upcoming challenges.



**YMCA UNIVERSITY OF SCIENCE AND TECHNOLOGY  
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**SYNOPSIS OF  
SCHEME OF STUDIES & EXAMINATIONS  
2 YEARS M.TECH SEMESTER I-IV (2016-2018)**

**Total Credits: 78**  
**Total Theory Subjects: 14**  
**Total Labs (including Seminars & Projects):9**  
**Total Dissertation: 1**

**Total Teaching Schedule:**

<b>Lectures</b>	<b>Practical</b>	<b>Total</b>
<b>56</b>	<b>30</b>	<b>86</b>

**Total Marks:**

<b>Sessionals</b>	<b>End Term</b>	<b>Total</b>
<b>975</b>	<b>1200</b>	<b>2175</b>

**Itemised Break-up:**

	<b>No.</b>	<b>Hours</b>	<b>Marks</b>	<b>Credits</b>
<b>Theory Subjects</b>	<b>14</b>	<b>56</b>	<b>1300</b>	<b>51</b>
<b>Labs</b>	<b>5</b>	<b>20</b>	<b>250</b>	<b>10</b>
<b>Seminar</b>	<b>3</b>	<b>6</b>	<b>75</b>	<b>3</b>
<b>Projects</b>	<b>1</b>	<b>4</b>	<b>50</b>	<b>2</b>
<b>Industrial Training</b>	<b>1</b>	<b>1 Semester</b>	<b>500</b>	<b>12</b>
<b>Total</b>	<b>24</b>		<b>2175</b>	<b>78</b>



**YMCA University of Science and Technology, Faridabad**

**M.Tech (Computer Engineering- Networking)**

**Scheme of Studies / Examination**

**Semester 1**

Course No	Course Title	Teaching Schedule			Marks For Sessionals	Marks for End Term Examination		TOTAL MARKS	CREDITS
		L	P	TOTAL		THEORY	PRACTICAL		
MTCE-16-102	Resource Management in Computer Systems	4	-	4	40	60	-	100	4
MTCN-16-101	Data Communication Networks	4	-	4	40	60	-	100	4
MTCE-16-122	Analysis and Design of Algorithms	4	-	4	40	60	-	100	4
	Elective –I	4	-	4	40	60	-	100	4
MTCE-16-106	RMCS Lab	-	4	4	30		20	50	2
MTCN-16-103	DCN Lab	-	4	4	30		20	50	2
MTCN-16-105	Seminar	-	2	2	25		-	25	1
	<b>TOTAL</b>	<b>16</b>	<b>10</b>	<b>26</b>	<b>245</b>	<b>240</b>	<b>40</b>	<b>525</b>	<b>21</b>

**Elective I**

- MTCE-16-103 Mathematical Foundations of Computer Science
- MTIT-16-103 Information Retrieval System
- MTCE-16-113 Agile Software Development
- MTCE-16-115 Advanced Computer Architecture
- MTCE-16-105 Software Testing

**Note: Exam duration will be as under**

- (a) Theory exams will be of 3 hours duration**
- (b) Practical exams will be of 3 hours duration**



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**M.Tech (Computer Engineering-Networking)**

**Scheme of Studies / Examination  
Semester 2**

Course No	Course Title	Teaching Schedule			Marks For Sessionals	Marks for End Term Examination		TOTAL MARKS	CREDITS
		L	P	TOTAL		THEORY	PRACTICAL		
MTCN-16-102	Mobile and Wireless communication	4	-	4	40	60	-	100	4
MTCE-16-101	Computer system software	4	-	4	40	60	-	100	4
	Elective II	4	-	4	40	60	-	100	4
	Elective III	4	-	4	40	60	-	100	4
MTCE-16-107	CSS Lab	-	4	4	30		20	50	2
MTCN-16-104	Mobile & Wireless Communication Lab	-	4	4	30		20	50	2
MTCN-16-106	Seminar	-	2	2	25		-	25	1
	Audit Course	4	-	4	-	-	-	-	-
	<b>TOTAL</b>	<b>20</b>	<b>10</b>	<b>30</b>	<b>245</b>	<b>240</b>	<b>40</b>	<b>525</b>	<b>21</b>

**Elective II**

- MTCN-16-108 Cryptography & Network Security
- MTCN-16-110 Stenography & Digital Watermarking
- MTCN-16-112 Cyber Security
- MTCE-16-118 Agent Based Computing

**Elective III**

- MTCE-16-104 Soft Computing
- MTCN-16-114 Fundamentals of Middleware technologies
- MTCN-16-116 Routing Technologies
- MTIT-16-114 Web Technologies

**Note :**

- 1) **Initially the syllabus for the Audit Course will be prescribed by the concerned teacher which will be a standard one and shall be taken from a credible reference such as reputed University/Institution**





**2) Exam duration will be as under**

**(a) Theory exams will be of 3 hours duration**

**(b) Practical exams will be of 3 hours duration**



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**Scheme of Studies / Examination**

**Semester 3**

Course No	Course Title	Teaching Schedule			Marks For Sessionals	Marks for End Term Examination		TOTAL MARKS	CREDITS
		L	P	TOTAL		THEORY	PRACTICAL		
MTCN-16-201	Network Management	4	-	4	40	60	-	100	4
MTCN-16-203	Mobile Adhoc Networks	4	-	4	40	60	-	100	4
	Elective IV	4	-	4	40	60	-	100	4
	Elective V	4	-	4	40	60	-	100	4
MTCN-16-205	MANET Lab	-	4	4	30		20	50	2
MTCN-16-207	Minor Project	-	4	4	30		20	50	2
MTCN-16-209	Seminar	-	2	2	25		-	25	1
	Open Elective	4	-	4	40	60	-	100	3
	<b>TOTAL</b>	<b>20</b>	<b>10</b>	<b>30</b>	<b>285</b>	<b>300</b>	<b>40</b>	<b>625</b>	<b>24</b>

**Elective IV**

- MTCN-16-211 High Performance Networks
- MTCN-16-213 Optical Network Design
- MTIT-16-112 Advanced Client /Server Computing
- MTCE-16-211 Natural Language Processing

**Elective V**

- MTCN-16-215 Cloud Computing
- MTCN-16-217 Wireless Sensor Networks
- MTCN-16-219 SOA & Web Services

**Open Elective**

- OEC-5 Intellectual Property Rights
- OEC-4 Web Technology and Information Retrieval
- OEC-2 Cyber Laws and Security



**Note: Exam duration will be as under**

**(a) Theory exams will be of 3 hours duration**

**(b) Practical exams will be of 3 hours duration**



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**M.Tech (Computer Engineering-Networking)**

**Scheme of Studies / Examination**

**Semester 4**

Course No.	Course Title	Examination Schedule (Marks)		Total (Marks)	Credits
MTCN-16-202	Dissertation and Viva Voce	200	300	500	12



### Audit Courses

Sr. No.	Name of the subject	Code
1.	German-1	AUD-01
2.	German-2(With German-1 as prerequisite)	AUD-02
3.	French-1	AUD-03
4	French-2(With French-1 as prerequisite)	AUD-04
5	Sanskrit-1	AUD-05
6	Sanskrit-2(With Sanskrit-1 as prerequisite)	AUD-06
7	Personality Development	AUD-07
8	Interview and Group discussion skills	AUD-08
9	Yoga and Meditation	AUD-09
10	Art of living/Living Skills	AUD-10
11	Contribution of NSS towards Nation/role of NSS	AUD-11
12	Physical Education	AUD-12