

Rashtreeya Sikshana Samithi Trust

R.V. College of Engineering

(Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi)



Department of Computer Science and Engineering

**Master of Technology (M.Tech.)
in**

Computer Network Engineering

**Scheme and Syllabus of
Autonomous System w.e.f 2016**

R. V. College of Engineering, Bengaluru – 59
(An Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi)

Department of Computer Science and Engineering

Vision

To achieve leadership in the field of Computer Science and Engineering by strengthening fundamentals and facilitating interdisciplinary sustainable research to meet the ever growing needs of the society.

Mission

- To evolve continually as a center of excellence in quality education in computers and allied fields.
- To develop state-of-the-art infrastructure and create environment capable for interdisciplinary research and skill enhancement.
- To collaborate with industries and institutions at national and international levels to enhance research in emerging areas.
- To develop professionals having social concern to become leaders in top-notch industries and/or become entrepreneurs with good ethics.

Program Educational Objectives (PEO)

M. Tech. in Computer Network Engineering (CNE) Program, graduates will be able to:

- PEO 1.** Apply knowledge acquired in Computer Network Engineering to solve problems encountered in real time application using sustainable solution.
- PEO 2.** Demonstrate technical capability, leadership skills to innovate, communicate and collaborate to pursue career in Computer Network Engineering domain.
- PEO 3.** Engage in research and contribute to the growth of Computer Networks domain.
- PEO 4.** Analyze and solve societal issues related to Computer Network Engineering with focus on professional ethics and lifelong learning.

Program Outcomes (PO)

The graduates of M. Tech. in Computer Network Engineering (CNE) Program will be able to accomplish/attain:

- PO 1. Scholarship of Knowledge** - Acquire in-depth knowledge of Computer Network Engineering to discriminate, evaluate, analyze and synthesize existing and new knowledge and to integrate the same for enhancement of knowledge with a global perspective.
- PO 2. Critical Thinking** - Analyze complex problems critically related to Computer Network Engineering domain, apply independent judgment for synthesizing information to make intellectual and/or creative advances with a research perspective.
- PO 3. Problem Solving** - Conceptualize and solve Computer Network Engineering problems effectively and arrive at feasible optimal solution, individually and in teams, to accomplish a common goal considering public health and safety, cultural, societal and environmental factors.
- PO 4. Research Skill** - Extract and analyze information through literature survey for solving problems by applying research methodologies, techniques, tools and design, conduct experiments, analyze and interpret data, demonstrate higher order skills and view things in a broader perspective, contribute individually/in group(s) to the development of scientific/technological knowledge in Computer Network Engineering domain.
- PO 5. Usage of modern tools** - Create, select, learn and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of the limitations.
- PO 6. Collaborative and Multidisciplinary work** - Possess knowledge and understanding of group dynamics, recognize opportunities and contribute positively to collaborative-multidisciplinary scientific research, demonstrate a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity and rational analysis in order to achieve common goals and further the learning of themselves as well as others.
- PO 7. Project Management and Finance** - Demonstrate knowledge and understanding of Computer Network Engineering, management principles and apply the same to one's own work, as a member and leader in a team, manage projects efficiently in respective

disciplines and multidisciplinary environments after consideration of economic and financial factors.

- PO 8. Communication-** Communicate with Computer Network Engineering community, and with society at large, regarding complex engineering activities confidently and effectively, such as, being able to comprehend, make effective presentations and to write effective reports by adhering to appropriate standards.
- PO 9. Life-long Learning** - Recognize the need for, and have the preparation and ability to engage in life-long learning independently, with a high level of enthusiasm and commitment to improve knowledge and competence continuously.
- PO 10. Ethical Practices and Social Responsibility** - Acquire professional and intellectual integrity, professional code of conduct, ethics of research and scholarship, consideration of the impact of research outcomes on professional practices and an understanding of responsibility to contribute to the community for sustainable development of society.
- PO 11. Independent and Reflective Learning** - Observe and examine critically the outcomes of one's actions and make corrective measures subsequently, and learn from mistakes with or without depending on external feedback

Program Specific Criteria for M. Tech. in Computer Network Engineering (CNE)
Professional Bodies: IEEE-CS, ACM

The M.Tech program in Computer Network Engineering prepares the students for career in networking domain. The curriculum emphasizes courses on Mathematics and Statistics, Humanities, Ethics and Professional Practice, Information and Network Security, Computer Networks, Distributed Systems, Client Server Communication along with elective courses. The program enables students in problems solving, critical thinking and communication skills with focus on team work.

Program Specific Outcomes (PSO)

The graduates of M. Tech. in Computer Network Engineering (CNE) will be able to:

- PSO 1.** Design and implement solutions for solving real world problems in wired and wireless computer networks.
- PSO 2.** Acquire skills to operate, design, manage and resolve issues related to large computer networks, telecommunication networks and resource sharing applications.

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FIRST SEMESTER								
Sl. No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture L	Tutorial T	Practical P	Self Study S	
1	16MEM11R	Research Methodology	IM	3	1	0	0	4
2	16MAT12A	Probability Statistics and Queuing	MA	4	0	0	0	4
3	16MCN13	Advances in Computer Networks	CS	4	0	1	0	5
4	16MCN14	Information and Network Security	CS	4	0	0	1	5
5	16MCN15x	Elective -1	CS	4	0	0	0	4
6	16HSS16	Professional Skill Development	HSS	0	0	2	0	2
		Total		19	1	3	1	24

Elective -1			
16MCN151	Wireless Adhoc and Sensor Networks	16MCN152	Distributed Systems

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SECOND SEMESTER								
Sl. No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture L	Tutorial T	Practical P	Self Study S	
1	16MEM21P	Project Management	IM	3	1	0	0	4
2	16MCN22	Wireless Communications	CS	4	0	1	0	5
3	16MCN23x	Elective-2	CS	4	0	0	0	4
4	16MCN24x	Elective-3	CS	4	0	0	0	4
5	16MCN25x	Elective-4	CS	4	0	0	0	4
6	16MCN26	Minor Project	CS	0	0	5	0	5
		Total		19	1	6	0	26

Elective-2			
16MCE231/16MCN231	Cloud Computing Technology	16MCN232	Network Programming
Elective-3			
16MCN241	Switching and Routing Techniques	16MCN242	Data Management Essentials
Elective-4			
16MCN251	Analysis of Computer Networks	16MCN252	Optical Network Technology

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THIRD SEMESTER								
Sl. No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture L	Tutorial T	Practical P	Self Study S	
1	16MCN31	Network Management	CS	4	0	1	0	5
2	16MCN32x	Elective-5	CS	4	0	0	0	4
3	16MCN33x	Elective-6	CS	4	0	0	0	4
4	16MCN34x	Elective-7	CS	4	0	0	0	4
5	16MCN35	Internship/ Industrial Training	CS	0	0	3	0	3
6	16MCN36	Technical Seminar	CS	0	0	2	0	2
		Total		16	0	6	0	22

Elective -5			
16MCN321	Software Defined Systems	16MCN322	Storage Area Network Management
Elective – 6			
16MCN331	Mobile Computing	16MCN332	Internetworking Technologies
Elective-7			
16MCE341/16MCN341	Foundations for Internet of Things	16MCN342	Client Server Programming

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FOURTH SEMESTER								
Sl. No	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture	Tutorial	Practical	Self Study	
				L	T	P	S	
1	16MCN41	Major Project	CS	0	0	26	0	26
2	16MCN42	Seminar	CS	0	0	2	0	2
		Total		0	0	28	0	28

