# B. Tech.
## (Computer Engineering)

First Year (Common for All Branches)

Second year

| Trimester IV | Trimester V | Trimester VI |
|---|---|---|
| Applied Maths IV** | Applied Maths –V** | Discrete Structures |
| Data Structures and Numerical Techniques | Computer Organization & Architecture* | Operating Systems* |
| Digital Logic Design * | Analog & Digital Communication | System Programming |
| Micro Processors & Micro Controllers * | Database Management Systems * | Computer Networks* |
| Programming Workshop* | Environmental Studies ** | Seminar – 2 (Presentation) |
| | Seminar – 1 (Report) | |

Third year

| Trimester VII | Trimester VIII | Trimester IX |
|---|---|---|
| Theoretical Computer Science | Digital Signal Processing* | Image Processing * |
| Software Engineering * | Object Oriented Software Engineering | Principles of Compiler Design |
| Design & Analysis of Algorithms | | Advance Computer Networks* |
| Fundamentals of Web Technology | Computer Graphics | Industrial Economics & Management |
| Seminar – 3 (Report) | Unix Programming* | Project Workshop |
| Constitution of India ** | Seminar – 4 (Presentation) | |

Fourth Year

| Trimester X | Trimester XI | Trimester XII |
|---|---|---|
| Multimedia Systems * | Intelligent Systems | Mobile Computing |
| Advanced Computer Architecture | System Security | Distributed Computing * |
| Elective-I <br><br> • Embedded Systems <br> • Data warehousing & Mining <br> • Advanced DBMS <br> • Information Storage & Management | Elective- II <br><br> • Software Architecture <br> • Parallel Computing <br> • Network Programming | Elective – III <br><br> • Bio-Informatics <br> • Geographical Information Systems <br> • Robotics |
| • Project-I | Project-II | Project-III |

*Common Syllabus for Computer & IT
**Common for all Branches

# B.Tech.
## (Electronics Engineering)

First Year (Common for All Branches)

Second Year

| Trimester IV | Trimester V | Trimester VI |
|---|---|---|
| Applied Maths - IV ** | Applied Maths - V ** | Principles of Communication Engineering * |
| Advanced Electronics * | Basic Control Systems | Microprocessor Fundamentals * |
| Electrical Network Analysis & Synthesis * | Logic Circuit Design * | Analog Integrated Circuits & Applications |
| Numerical Techniques * | Electronics Circuit Analysis and Design * | Seminar – II (Presentation) |
| Signals & Systems * | Seminar – I (Report) | Electronics Workshop |
| - | - | Constitution of India |

Third Year

| Trimester VII | Trimester VIII | Trimester IX |
|---|---|---|
| Industrial Electronics | Advanced Microcontrollers | Computer Organisation & architecture |
| Electro magnetic field theory | Electronic Instrumentation & Control | Optical Fiber Communication |
| Advanced Microprocessor | Digital Communications | Discrete Time Signal Processing |
| TV & Video Engineering | Industrial Economics & Management | Project Management |
| Seminar – III (Report) | Seminar-IV (Presentation) | Minor Project |

Forth Year

| Trimester X | Trimester XI | Trimester XII |
|---|---|---|
| Digital Signal Processing | Digital Communications | Data Communications |
| VLSI Design & Technology | Embedded Systems | Robotics |
| Elective – I | Elective – II | Elective– II |
| Project (Part – I) | Project (Part – II) | Project (Part – III) |
| - | Environmental Studies | - |

| Elective I | Elective II | Elective – III |
|---|---|---|
| Microcomputer System Design | Advanced Digital Signal Processing | Wireless Communication |
| Image Processing | Biomedical Instrumentations | Advanced Microcontrollers |
| Advanced Power Electronics | Microelectromechanical Devices | DSP Architecture & Systems |

*Syllabus Common with EXTC          **Common for all branches

# B.Tech.
## (Electronics & Telecommunication Engg.)

First Year (Common for All Branches)
Second Year

| Trimester IV | Trimester V | Trimester VI |
|---|---|---|
| Applied Mathematics IV** | Applied Mathematics V** | Signal Conditioning and Filter Design |
| Electrical Networks Analysis and Synthesis * | Signals and Systems * | Principles of Communication Engineering * |
| Logic Circuit Design * | Electronic circuit Analysis and Design* | Electromagnetic Field Theory |
| Advanced Electronics * | Electronic Instrumentation | Integrated Circuits and Wave Shaping Techniques |
| Numerical Techniques * | Seminar – I (Report) | Seminar – II (Presentation) |

Third Year

| Trimester VII | Trimester VIII | Trimester IX |
|---|---|---|
| Microprocessor Fundamentals | Microcontrollers & Embedded Programming | Computer Communication Networks |
| Microwave Theory and Circuits | Digital Signal Processing | Antenna and Wave Propagation |
| Communication Circuits | Microwave Devices | TV and Video Engineering |
| Probability and Random Process | Digital communication | Industrial Economics & Project Management |
| Constitution of India | – | – |
| Seminar - 3 (Report) | Seminar - 4 (Presentation) | Minor Project |

Fourth year

| Trimester X | Trimester XI | Trimester XII |
|---|---|---|
| Satellite Communication & Radar | Optical Fiber Communication | Telecom Network Planning and Management |
| Control Systems and Automation | Mobile Communication | Wireless Networks |
| – | Environmental Studies | |
| Elective I | Elective II | Elective III |
| Project I | Project II | Project III |

| Elective – I | Elective – II | Elective – III |
|---|---|---|
| • Simulation of Communication Systems | ▪ Data Compression & Encryption | ▪ Optical Networks |
| • Image Processing | • VLSI Design | • Advanced Communication Networks |
| • Digital Voice Communication | • Speech Processing | • Broadband Technology |

*Syllabus Common with Electronics. **Common to all branches.

# B.Tech.
## (Mechanical Engg.)

First Year (Common for All Branches)

Second Year

| Trimester IV | Trimester V | Trimester VI |
|---|---|---|
| Applied Mathematics IV | Applied Mathematics - V | Computer aided Drafting |
| Applied Thermodynamics | Strength of Materials | Environmental Engineering |
| Numerical Techniques | Fluid Mechanics | Fluid Machinery |
| Material Engineering | Theory of Machine - I | Theory of Machine - II |
| Manufacturing Process – I | Industrial Electronics | Constitution of India |
| Machine Drawing | Seminar - I (Report) | Seminar - II (Presentation) |

Third Year

| Trimester VII | Trimester VIII | Trimester IX |
|---|---|---|
| Manufacturing  Processes - II | Design of Machine ElementsI | Design of Machine ElementsII |
| Heat and Mass Transfer | Thermal Engineering | Energy Management & Non Conventional Energy Sources |
| Mechanical Measurements & Control | Power Plant Engineering | I.C. Engines |
| Vibration Engineering | System Analysis & Modeling | Mechatronics |
| Principles of Management | Total Quality Management Strategies | Industrial Engineering |
| Seminar – III (Report) | Seminar - IV (Presentation) | - |

Fourth Year

| Trimester X | Trimester XI | Trimester XII |
|---|---|---|
| Design of Mechanical System | Refrigeration and Air Conditioning | Finite Element Analysis |
| Operation  Management | Automation In Production | Engineering Economics & Accounting. |
| Elective I | Elective II | Elective III |
| Project (Part I) | Project (Part II) | Project (Part III) |

| Elective - I | Elective - II | Elective - III |
|---|---|---|
| 1) Tribology | 2)Nuclear power generation and safety | 1) Rapid Prototyping and tooling |
| 2)  Mechanical Handling systems and Equipments | 2)Solar Energy Technology | 2) Neural network. |
| 3) MEMS: Design, Fabrication and characterization | 3) Aerodynamics | 3) Computer Aided Manufacturing & Computer Integrated Manufacturing |
| 4) Reliability Engineering. | 4) Value Engineering. | 4)Management Information System |

# B.Tech.
## (Civil Engg.)

First Year (Common for All Branches)

Second Year

| Trimester IV | Trimester V | Trimester VI |
|---|---|---|
| Maths - IV | Maths - V | Hydrology |
| Constitution of India | Materials & Structures | Strength of Materials |
| Applied Thermodynamics | Environmental Engineering– I | Computer Aided Drafting |
| Numerical Techniques | Surveying – II | Environmental Engineering–II |
| Surveying – I | Fluid Mechanics – II | Principles of Management |
| Fluid Mechanics – I | Seminar I (Report) | Seminar - II (Presentation) |
| Civil Engineering Workshop | | |

Third Year

| Trimester VII | Trimester VIII | Trimester IX |
|---|---|---|
| Water Resources & Mgt. | Analysis of Structures | Computational Techniques in Civil Engineering |
| Soil Mechanics | Foundation Engineering | Construction Techniques |
| Introduction to Finite Element Method | Building Utilities & Services | Design of Concrete Structure |
| Irrigation | Risk & Safety in Construction | Construction Machinery |
| Concrete Technology | Geology | Hydraulic Machinery |
| Seminar – III (Report) | Seminar IV (Presentation) | - |

Forth Year

| Trimester X | Trimester XI | Trimester XII |
|---|---|---|
| Design of Steel Structures | Project Management- I | Project Management - II |
| Transportation Engineering– I | Transportation Engineering- II | Contract Administration |
| Elective - I | Elective - II | Elective - III |
| Project Part - I | Project Part - II | Project Part - III |

| Elective - I | Elective- II | Elective III |
|---|---|---|
| Interior Design | Design of Bridge Structures | Green & Intelligent Buildings |
| Town Planning | Design of Pre Stressed Structures | Software Development |
| Geotechnical Earthquake Engineering | Mass Rapid Transportation Systems (MRTS) | Quality in Construction |
| Environment Ecology & Resettlement issues | Real Estate Development & Redevelopment | Finance Management |
| | GIS & Remote Sensing | Disaster Management |

# MCA
## Master of Computer Applications

To meet the increasing demand of trained manpower in the field of Computer Applications, NMIMS University has launched a 3 years Post Graduate MCA Programme with an intake of 60 seats at Mumbai campus under its Mukesh Patel School of Technology Management & Engineering.

### ELIGIBILITY

The candidate must have Bachelor's degree with 50% marks in aggregate in Arts, Science or Commerce, Management or any other discipline from a recognized institution / university. Those awaiting their final exam results may also apply.

### SELECTION PROCEDURE

Admission process for the academic year 2010-11 will start from the month of March 2010. Interested candidates need to apply in the prescribed application form for being considered for admission to the MCA Programme. The application forms will be made available at the school and notified centers. Admission will be based on good score in the General Aptitude paper at E or D Level Examination conducted by C-DAC in various cities followed by personal interview at the NMIMS premises in Mumbai. For further details on examination please visit website: www.cdacmumbai.in

### COURSE STRUCTURE

The Course Structure for MCA Programme is given on subsequent pages subject to review and revision by the Board of Studies and approval of the Academic Council of the University.

### TEACHING-LEARNING AND EVALUATION

It is a full time programme and timetable will be for approx. 32 to 36 contact hours per week in the final year of the course. Approx. 30% of the time will be allocated to industry based project work for which guidance of the faculty will be available.

Student is required to have minimum 80% attendance in the classes for every subject and must complete all the term work prescribed for the subject.

The scheme of evaluation will contain theory and practical examination as well as term work and periodical, class tests, assignments etc. For passing the subject, student must obtain a minimum of 50% marks in each of the subject.

The class will be awarded at the end of every year on the basis of total marks or Grade Point Average obtained by the student subject to earning prescribed minimum credits during the year.

The class for final degree will be awarded on the basis of cumulative performance during all the years for MCA Courses.

### BOARD OF STUDIES

The Board of Studies for MCA will be the same as the Board of Studies for Engineering Sciences as shown earlier.

# MCA

## First Year

| Trimester – I | Trimester – II | Trimester – III |
|---|---|---|
| 'C' Programming | Communication Skills | Structured System Analysis & Design |
| Computer Organization and Architecture | Operating System | Object Oriented Programming with C++ |
| Discrete Maths | Design & Analysis of Algorithms | Data base Management System |
| Principles of Management | Numerical & Computational Techniques | Statistical Methods |

## Second Year

| Trimester – IV | Trimester – V | Trimester – VI |
|---|---|---|
| Advanced Database Techniques | Business Economics | Information Security |
| Object Oriented modeling and Design | JAVA and Web Technologies | Project Management |
| Organizational Behavior | Software Engineering | Advanced JAVA |
| Computer Networks | Operation Research | Elective – I<br>a) Parallel Processing<br>b) Artificial Neural Network<br>c) Network Programming<br>d) Multimedia |

## Third Year

| Trimester – VII | Trimester – VIII | Trimester – IX |
|---|---|---|
| Wireless Techniques | Project In Industry | Project In Industry (Contd.) |
| Distributed Computing | | |
| Management Information System | | |
| Programming Workshop | Seminar | Seminar (Cont.) |
| Elective – II<br><br>a) Service Oriented Architecture<br>b) Data Mining & Warehousing<br>c) Embedded System | Presentation – I | Presentation – II |

# M. Tech.
## Master In Technology &
# Ph. D.

M.Tech. programmes are offered in IT / Computer Engineering / Electronics Engineering and Electronics & Telecommunication Engineering. The courses have been tailored by leading academicians and experts from the industries. Emphasis has been given to the latest development in industry wherein expertise is required. Steps have been taken to further strengthen the present system in the country while framing the syllabus.

Ph.D. programmes are offered in the areas of IT / Computer / Electronics / Electronics & Telecommunication / Chemical / Manufacturing Engineering and Technology Management.

## PROGRAMME OBJECTIVES
• To provide excellent education and guidance in engineering branches at postgraduate and research level.
• To cater the needs of engineering industries and research organizations at national and international levels.
• To train HR to carry out innovative research for creating intellectual property through master and doctoral programmes.
• To prepare engineers to take position in industry, institutions and research organizations

## DURATION
The course of study of M.Tech. in each specialization shall extend over two years consisting of three trimesters for the first year and then carry out research work on industry related project followed by submission of dissertation in the second year.

For Ph.D. the duration is 3-5 years depending upon the performance of the candidate.

## INTAKE
18 seats in each specialization of M. Tech. Programmes.

For Ph.D. Programmes total intake is 15

## ELIGIBILITY
Every candidate for the M. Tech. programme in each specialization must have passed B.E. / B. Tech. or equivalent examination with valid GATE score; sponsored candidates without GATE score will also be considered.

a) Ph.D. (Engineering) - M.E. / M.Tech. in relevant branch of Engineering / Technology with 1st class at Bachelors or Masters level.
b) Ph.D. (Technology Management) - M.E. / M.Tech. / MBA with B.E. / B.Tech. and 1st class at bachelor or masters level.

SELECTION PROCESS

A) For M.Tech.

Candidates will be admitted to M.Tech. in the area of interest as mentioned in their application form, if they meet the required standards of the two stage processes described below:

Stage 1: All candidates aspiring to and eligible for admissions to M. Tech. Programmes in each specialization shall be short-listed based on their valid GATE score, for a personal interview at NMIMS campus. Sponsored candidates shall be short listed on the basis of their B.E. / B.Tech. Degree score.

Stage 2 : Personal Interview : Candidates short listed in stage 1 shall be interviewed at the institute premises and the merit list will be prepared accordingly. Candidates will be allotted admissions to the discipline as per the availability/ choice as the case may be.

B) For Ph.D. Programme

Admission process: Entrance test followed by personal interview / presentation. Selection will be merit.

Registration: Selected candidate will have to undergo prescribed courses during II trimesters

Exam will be conducted at the end of each trimester and candidate has to obtain 60% in each of the courses to register for Ph.D.

Course work: Course work for entrance exam:
• Research methodology
• Statistical methods of analysis
• Elective to be decided by the guide relevant to the specific branch

Board of Studies is the same as given under B.Tech. Programme.

# M.Tech.
(Information Technology)

First year

| Trimester -I | Trimester -II | Trimester -III |
|---|---|---|
| Networking Architecture & Communication | Distributed Systems | Advanced Networking Archite. |
| Data Warehousing & Mining | Artificial Intelligence | Multimedia System Design & Applications |
| Software Engineering Methodology | Elective I | Elective II |
| Seminar – 1 | Seminar – 2 | Seminar-3 |

Elective I (Any One)
a) Mobile Computing & Wireless Networking b) System & Network Security
c) Advanced Image Processingd) System Reliability

Elective II (Any One)
a) Computer Vision
c) Embedded System
b) Software Architecture & Project Management
d) Fuzzy Logic & Neural Network

Second Year (Common for all branches)
Project work on related topic and dissertation. (Teaching assistances hip will be provided to deserving candidates)

# M.Tech.
(Computer Engineering)

First Year

| Trimester I | Trimester II | Trimester III |
|---|---|---|
| Networking Architecture & Communication | Distributed Systems | Parallel Processing |
| Data Warehousing & Mining | Artificial Intelligence | Multimedia System Design & Applications |
| Software Engineering Methodogy | Elective I | Elective II |
| Seminar – 1 | Seminar – 2 | Seminar-3 |

Elective I (Any One)
a) Mobile Computing & Wireless Networking
b) System & Network Security
c) Advanced Image Processing
d) System Reliability

Elective II (Any One)
a) Computer Vision
b) Software Architecture & Project Management
c) Embedded System
d) Fuzzy Logic & Neural Network

# M.Tech.
(Electronics & Telecommunication Engineering)
First Year

| Trimester I | Trimester II | Trimester III |
|---|---|---|
| VLSI Design | Optical Communication & Network | Modern DSP |
| Advanced Microwave Engineering | Microwave Integrated Circuits | Satellite Communication |
| Advanced Digital Communication | Elective – I | Elective – II |
| Seminar – I | Seminar –2 | Seminar – 3 |

Elective I (Any one)
a) Wireless & Mobile Communication System
b) Antenna Theory & Design
c) Telematics

Elective II (Any one)
a. Telecom Network Management
b. Radar Engineering
c. Reliability & System Design
d. Image Processing
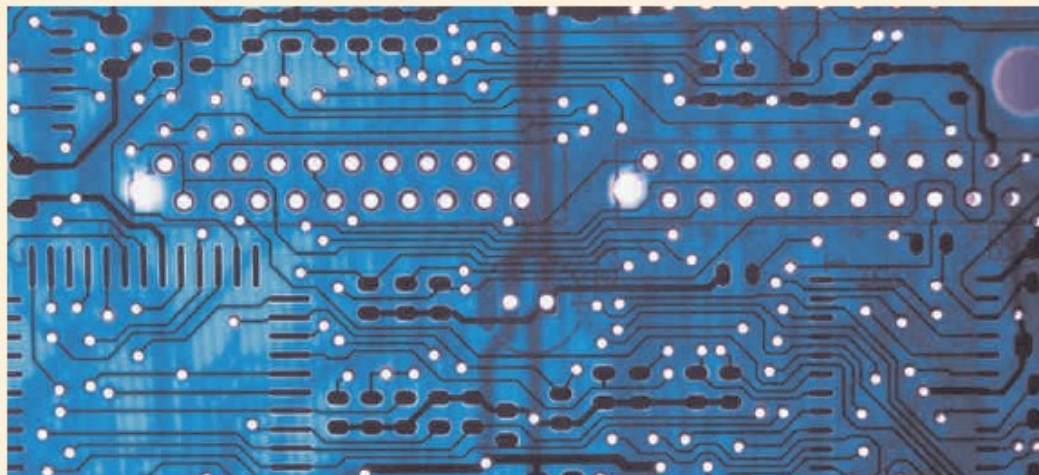
## Ban on Ragging in the University

Ragging is banned in the university and anyone found indulging in ragging is liable to be punished appropriately which may include expulsion from the university. Ragging is strictly prohibited in the university premises and outside. Students involved in ragging other students will be punished as per 'The Maharashtra Prohibition of Ragging Act, 1999 (Mah. XXXIII of 1999) published in Maharashtra Govt. Gazette on 15th May 1999. Moreover, it will be mentioned in the Migration Certificate of such students that they are expelled because of indulgence in ragging. The students found guilty of ragging earlier will not be admitted to this university.

## Disclaimer

NMIMS reserves the right to make any changes as it may deem fit to the items contained in this brochure, including the programme name, programme contents, duration, fees, channel and methods of delivery, faculty, admission and refund policies, evaluation and standard of passing and so on. Besides the faculty members mentioned in this brochure, NMIMS also benefits from the services of a large number of industry professionals who serve as part-time or visiting faculty. NMIMS reserves the right to assign any of those faculty to any programme. Conduct of these programmes is governed by various rules and by-laws as laid down and modified from time to time by NMIMS. Copies of current rules and by-laws are available with the registrar for perusal. All disputes are subject to the legal jurisdiction of Mumbai only.

## Academic Guidelines

Detailed Academic Guidelines, regarding Course Outline, Grading, Examination, Attendance Norms, etc., are given in the Students Resource Book (SRB), which is made available to every student who joins the university.
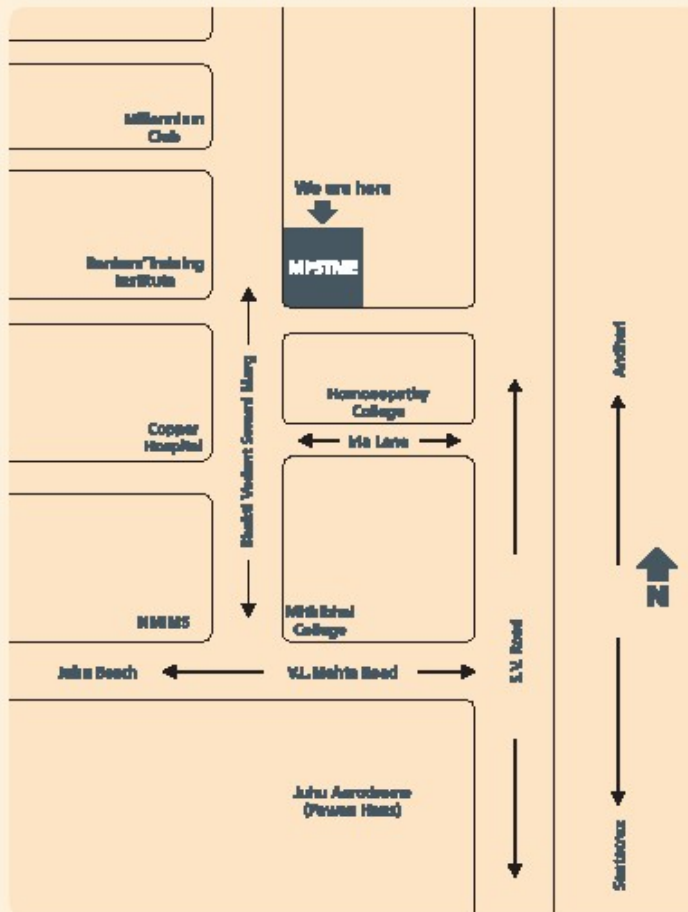
# NMIMS ANTHEM

We do what's right and not what's easy
We give our best shot each and every time
We set the standard
We are the future
We are a part of this institute so fine

NMIMS NMIMS
NMIMS NMIMS

Respect the past
Create the future
Transcend horizons however far
We have what it takes
We make a great team
At NMIMS each one is a star

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NMIMS NMIMS

**SVKM's**

# Narsee Monjee Institute of Management Studies (NMIMS)

**(Declared as Deemed-to-be University under Section 3 of the UGC Act, 1956 vide Notification No.F.9-37/2001-U-3 dated 13th January, 2003 of the Government of India)**

## Mukesh Patel School of Technology Management & Engineering

**Mumbai Campus:** Behind Homeopathy College, Bhakti Vedant Swami Marg., J.V.P.D. Scheme, Vile Parle (West), Mumbai-400 056 • Tel: 42334000 / 26717970/71 • Fax: 26717779 mumbai@mpstme-nmims.org/www.mpstme-nmims.org/www.nmims.edu
**Shirpur Campus:** Babulde, Banks of Tapi River, Mumbai-Agra Road, Shirpur, Dist. Dhulia, Mahartashtra, Pin:425405 • Cell : +91 09920640772 • Fax: +910256170 shirpurcampus@mpstme-nmims.org/rredamkar@mpstme-nmims.org