

## ME Admission Rules

### Rule 1.0

The admissions to the ME courses are effected vide the Rules for admission to Post-Graduate Degree Courses (M.E.) for all branches in Engineering & Technology as per the North Maharashtra University, Jalgaon

### Rule 2.0:

#### Eligibility

Non-GATE candidates including sponsored candidates having at least 55% marks at Bachelor Degree level as specified below and GATE candidates possessing valid GATE score in the respective subject mentioned below will be eligible for admission to the respective course.

Sr. No	Title of PG Degree	Qualifying Examinations Degree
1	ME (Computer Engineering)	BE/BTech in Computer Engineering / Computer Science & Engineering / Computer Technology /Information Technology/ Electronics/ Electronics and Telecommunication /Electrical or its equivalent. recognized by AICTE & North Maharashtra University , Jalgaon.
2	ME (Electronics and Telecommunication Engineering)	BE/BTech in Electronics & Telecommunication./ Electronics & Communication. / Electronics / Industrial Electronics /Instrumentation / Electrical / Computer / computer science /Information Technology or itsequivalent. recognized by AICTE & North Maharashtra University , Jalgaon.

### Rule 3.0

The distribution of seats for each course is:

Sr No	Category	No. of Seats
1	Open	13
4	Sponsored	05
Total		18

### Rule 4.0

The GATE candidates having valid GATE score in the respective subject will be given preference and are exempted from appearing Entrance Test and Interview/viva-voce. For gate candidate admission will be offered on the basis of merit list prepared by considering gate score.

### Rule 5.0

When enough GATE qualified candidates in the respective branch are not available, the vacant seats will be offered to the non-GATE candidates, excluding sponsored candidates, as per the merit based on total marks secured out of 100 as indicated below:

- Entrance Test : Maximum 70 marks
- Interview/ viva-voce : Maximum 30 marks

**Out of Total 100 marks, minimum qualifying marks required are 40**

The Entrance Test, mostly objective type, of one hour followed by Interview will be conducted as per the schedule which will be notified on website separately.

#### **Rule 6.0**

##### **Sponsored candidates**

The candidate must have minimum of 2 years of fulltime work experience in a registered firm/company/industry/educational and/or research institute /any government department or government autonomous organization in relevant field in which admission is sought.

The sponsored candidates will have also to appear for the Entrance test and Interview/viva-voce as applicable to Non-GATE candidates as mentioned under Rule No. 5.0. Also note that no reservation will be provided to reserved candidates however preference will be given to candidate of reserved category in case of equal merit.

#### **Rule 7.0**

The candidates whom admissions will be offered are required to confirm admissions as per schedule notified on the web site. At the time of confirmation the candidates will have to submit all relevant original certificates with a set of Xerox copies thereof and if found valid, the candidate will be allowed to pay full fees of the course.

#### **Rule 8.0**

##### **The Tentative fees structure is:**

Tuition fees: Rs 50,000/- pa, interim subject to approval of Shikshan Shulka Samiti, Government of Maharashtra. The candidate will be charged fees as approved and refund will be affected if it is less than Rs 50,000/- pa or candidate will have to pay the difference in fees, immediately if the Shikshan Shulka Samiti approved fees is higher than Rs 55,000/- pa., Other Fees such as Admission fees, Security Deposit (Refundable), Eligibility fees, University other fees, etc., as prescribed by the University/Management from time to time.

#### **Rule 9.0**

##### **Cancellation of admission & Refund of fees:**

In case of cancellation of admission, Rules for Refund of Tuition Fees as prescribed by the Competent Authority will be operative.

#### **Rule 10.0**

The candidates admitted to various branches will have to adhere strictly to the rules of conduct, discipline, Library, dress code, anti-ragging, etc as prescribed by the Institute from time to time.

## **Syllabus for Entrance Test of M. E. (Electronics and Telecommunication Engineering)**

### **NETWORK: Network graphs:**

Nodal and mesh analysis. Network theorems; Fourier series, Laplace and Z transforms:

### **ANALOG CIRCUITS:**

BJT, JFETs and MOSFET, biasing and bias stability of transistor and FET amplifiers. Amplifiers: single and multi-stage, differential, operational, feedback and power. Analysis of amplifiers: Simple op-amp circuits. Filters, Oscillators, Function generators and wave-shaping circuits, Power supplies.

### **DIGITAL CIRCUITS:**

Boolean algebra, logic gates, digital IC families

(DTL, TTL, ECL, MOS, CMOS). Combinational circuits: arithmetic circuits, code converters, multiplexers and decoders. Sequential circuits: latches and flip-flops, counters and shift-registers. Comparators, timers, multivibrators. Sample and hold circuits, ADCs and DACs. Semiconductor memories. Microprocessor (8085): architecture, programming, memory and I/O interfacing.

### **CONTROL SYSTEMS:**

Basic control system components; block diagrammatic description, reduction of block diagrams, properties of systems: transfer function, stability analysis, Signal flow graphs, transient and steady state response.

### **COMMUNICATION SYSTEMS:**

=Fourier analysis of signals, Analog modulation systems, Digital modulation systems, Wireless communication systems, Mobile communication systems. Computer networks.

### **ELECTROMAGNETICS:**

Maxwell's equation, Wave equation. Pointing vector. Plane waves; reflection and refraction, Wave guides, Antenna theory.

### **DSP & VLSI:**

Basic concepts of Fourier transforms & digital filters, CMOS VLSI fundamentals, modeling styles in VHDL & **Fundamentals of Embedded Systems**

\*\*\*\*\*

## Syllabus for Entrance Test of M.E. (Computer Engineering)

**Digital Logic:** Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point).

**Discrete Mathematics:** Sets, Relations, Functions, Groups, Lattice, Boolean algebra, Induction, Recurrence relations, Permutations, Combinations

**Programming and Data Structures:** Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps. Object Oriented Programming.

**Algorithms:** Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds.

**Theory of Computation:** Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines.

**Compiler Design:** Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization.

**Operating System:** Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security.

**Databases:** ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL), Transactions and concurrency control.

**Software Engineering:** Requirement and feasibility analysis, data flow diagrams, process specifications, input/output design, process life cycle, planning and managing the project, design, coding, testing, implementation, maintenance.

**Computer Networks:** ISO/OSI stack, LAN technologies (Ethernet, Token ring), Flow and error control techniques, Routing algorithms, Congestion control, TCP/UDP and sockets, IP(v4), Application layer protocols (icmp, dns, smtp, pop, ftp, http); Basic concepts of hubs, switches, gateways, and routers. Network security - basic concepts of public key and private key cryptography, digital signature, firewalls.

**Computer Graphics:** Hardware and software components of graphics systems. Output and filled data primitives. 2D and 3D geometric transformations. Two dimensional viewing: viewing pipeline, clipping, and windowing. Three dimensional viewing: viewing pipeline, viewing parameters, projections, viewing transformations, clipping, visible surface detection.

**Artificial Intelligence and Neural Networks :** Problems and Search, Problems, Problem Spaces, and Search, Heuristic Search Techniques, Knowledge Representation, Using Predicate Logic, Representing Knowledge Using Rules, Activations and Signals, Activation Models, Unsupervised Learning, Supervised Learning, Network Architecture.

**Web technologies:** HTML, XML, basic concepts of client-server computing.