

# MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION

## Diploma Programme in **Computer Engineering** I – Scheme

### **Programme Educational Objectives (PEO)** (*What s/he will continue to do even after 3-5 years of working in the industry*)

- PEO 1. Provide socially responsible, environment friendly solutions to Computer engineering related broad-based problems adapting professional ethics.
- PEO 2. Adapt state-of-the-art Computer engineering broad-based technologies to work in multi-disciplinary work environments.
- PEO 3. Solve broad-based problems individually and as a team member communicating effectively in the world of work.

### **Program Outcomes (PO)** given by NBA. (*What s/he will be able to do at the entry point of industry soon after diploma programme*)

- PO 1. **Basic knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the broad-based Computer engineering problem.
- PO 2. **Discipline knowledge:** Apply Computer engineering discipline - specific knowledge to solve core computer engineering related problems.
- PO 3. **Experiments and practice:** Plan to perform experiments and practices to use the results to solve broad-based Computer engineering problems.
- PO 4. **Engineering tools:** Apply relevant Computer technologies and tools with an understanding of the limitations.
- PO 5. **The engineer and society:** Assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to practice in field of Computer engineering.
- PO 6. **Environment and sustainability:** Apply Computer engineering solutions also for sustainable development practices in societal and environmental contexts and demonstrate the knowledge and need for sustainable development.
- PO 7. **Ethics:** Apply ethical principles for commitment to professional ethics, responsibilities and norms of the practice also in the field of Computer engineering.
- PO 8. **Individual and team work:** Function effectively as a leader and team member in diverse/multidisciplinary teams.
- PO 9. **Communication:** Communicate effectively in oral and written form.
- PO 10. **Life-long learning:** Engage in independent and life-long learning activities in the context of technological changes in the Computer engineering field and allied industry.

### **Program Specific Outcomes (PSO)** (*What s/he will be able to do in the Computer engineering specific industry soon after diploma programme*)

- PSO 1. **Computer Software and Hardware Usage:** Use state-of-the-art technologies for operation and application of computer software and hardware.

PSO 2. **Computer Engineering Maintenance:** Maintain computer engineering related software and hardware systems.

**Notes for All the Semesters**

1. *Every student has to separately pass in **End-Semester-Examination (ESE)** for **both the-ory and practical** by securing minimum of 40% marks, (i.e. 30 out of 75, 28 out of 70, 20 out of 50, and 10 out of 25).*
2. ***Progressive Assessment (PA) for Theory** includes Written Exam/micro projects/ Assignment/Quiz/Presentations/attendance according to the nature of the course. The scheme and schedule for progressive assessment should be informed to the students and dis-cussed with them at the start of the term. This scheme should also be informed in writing to the principal of the institute.*
3. *Teachers need to give **marks judiciously for PA of theory and practical** so that there is always a **reasonable correlation** between the **ESE marks** obtained by the student and the **PA marks** given by **respective teachers for the same student**. In case the PA marks in some courses of some students seems to be relatively inflated in comparison to ESE marks, then MSBTE may review the PA records of such students.*
4. *For developing self-directed learning skills, from each course about 15-20% of the topics/sub-topics, which are relatively simpler or descriptive in nature are to be given to the students for self-study and proper learning of these topics should be assured through classroom presentations by students (see implementation guideline for details).*

5. Passing Criterion for Theory and Practical Courses for all Semesters

**a. Passing Criterion for Theory course:** - Each Theory course consists of 2 components, ESE (End Semester Examination) and PA (Progressive Assessment)

(i) *The passing criterion for each theory course is obtaining minimum 40% of marks allotted to ESE & PA component together. [i.e. for total marks of ESE (70 marks) + PA(30 marks) together = (Total 70+30 =100), obtaining minimum 40 marks are mandatory for passing the Theory course.]*

(ii) *To qualify for above condition (i), obtaining minimum 40% of marks allotted to ESE component is mandatory. [i.e. for total marks of ESE = 70, obtaining minimum 28 marks are mandatory. For passing ESE component]*

**b. Passing Criterion for Practical course:** - Practical course consists of 2 components, ESE (End Semester Examination) and PA (Progressive Assessment)

(i) *ESE and PA components of Practical course are independent head of passing.*

(ii) *The passing criterion for ESE component is obtaining minimum 40 % of marks allotted to ESE component. [i.e. for total marks of ESE= 25, obtaining minimum 10 marks are mandatory for passing in ESE component]*

(iii) *The passing criterion for PA component is obtaining minimum 40 % of marks allotted to PA component. [i.e. for total marks of PA= 25, obtaining minimum 10 marks are mandatory for passing in PA component]*

Note: - If Candidate not securing minimum marks for passing in the PA part of practical of any course of any semester then the candidate shall be declared as detained for that semester.