

National Institute of Electronics & Information Technology (NIELIT) Aurangabad

Teaching and Evaluation Scheme

NIELIT Aurangabad is a premier institution of the NIELIT Society, which is imparting quality education for more than 25 years and has been a pioneer institute in the state of Maharashtra. Over the years there have been many changes in teaching-learning practices. The flexibility in engineering programs has increased with definite objectives. As a commitment to the quality in technical education, continuous updation of the teaching-learning schemes is required.

This "Teaching and Evaluation Scheme" is meant to provide a uniform and high standard of teaching/learning and evaluation. At the same time, it opens avenues for integrated programs as well as collaborative exchange programs.

- 1) All the words imply their popular and common meanings, until and unless specified otherwise. however, some of the definitions used in this "Teaching and Evaluation Scheme" are as under:
 - a. **Course:** A subject normally taught/prescribed in one semester with structured theory, tutorial, practical engagements. It may require some prerequisites. The objective of each course is value addition in the students cognition levels.
 - b. **Credit:** The quantitative score of a course which accumulates for the student, if he passes it.
 - c. **Program:** The formal degree or diploma curriculum with structured, stipulated time frame.
 - d. **Project:** An assignment of an individual or group of students, who have to identify the concept and with utilizing their technical skill and knowledge, produce as an engineered product.
 - e. **AICTE:** All India Council for Technical Education. The regulatory body, whose prior approval to run the programs is mandatory.
 - f. **BAMU:** Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (Maharashtra). NIELIT Aurangabad has been granted autonomous status by the BAMU.
- 2) The ultimate objective of these programs is to produce "Competent skilled manpower" with excellent human values, engineering expertise, soft skills and objective approach. So the below mentioned scheme is prepared, applicable on all formal programs of NIELIT Aurangabad.
- 3) This scheme follows the AICTE standard of credits. Where each lecture hour (per week) is equal to one credit and each tutorial/practical hour (per week) is equal to half credit.
- 4) This scheme also maps five Program Educational Objectives which are as under...
 - PEO 1 Design, prototype and test electronic systems that perform analog and digital signal conditioning and processing functions as per user requirements using currently available electronic components.
 - PEO 2 Design, analyze, and select appropriate technologies for implementation of specified wired and wireless communication systems.
 - PEO 3 Work in a team using common tools and environments to achieve project objectives.
 - PEO 4 Possess communication skills, demonstrate leadership qualities and exhibit professional conduct in their career.
 - PEO 5 Engage in lifelong learning, career enhancement and adopt to changing professional and societal needs.

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- 5) The classroom engagement per week in undergraduate programs is nearly 30-34 hours, whereas it may be little less in PG programs. The co-curricular and extra-curricular activities are in addition to these, which do not have any credits. However, It is expected that all the students take part in Co-curricular and extra-curricular activities for fulfilling the PEO-4.
- 6) Each theory class would be of one hour duration and duration of the practical class would be as per the scheme. Attendance in each class would be mandatorily recorded.
- 7) **The medium of instruction and evaluation** is English. Any request for deviation from the medium would not be entertained.
- 8) **The evaluation scheme:**
 - a) Each credit is equal to 25 marks. So, subject's maximum marks would be defined accordingly.
 - b) For a 2 credit course the distribution of marks (50) is
 - i) First and Second mid-term exam 15 marks each.
 - ii) End term Examination would be out of remaining 20 marks.
 - c) For a 3 credit course the distribution of marks (75) is
 - i) First and Second mid-term exam 15 marks each.
 - ii) Assignments and Attendance combined 10 marks.
 - iii) End term Examination would be out of remaining 35 marks.
 - d) For a 4 credit course the distribution of marks (100) is
 - i) First and Second mid-term exam 15 marks each.
 - ii) Assignments and Attendance combined 10 marks.
 - iii) Practical component would be of 25 marks.
 - iv) End term Examination would be out of remaining 35 marks.
 - e) The practical components would be evaluated
 - i) Experimental work 60% (based on weekly evaluation of lab record & occasional viva-voce)
 - ii) End term examination 40% (consisting of at-least any two components, experiment performance, written quiz and viva-voce).
 - iii) This would be applicable to all practical components and projects.
 - f) **The project examinations** would require timely (typically one week prior) submission of the project report, failing which the examination would not be scheduled or conducted. The practical examination would require submission of the lab record on the day of the examination.
 - i) The projects would be chosen by the student on the basis of concept, feasibility, cost, utility, conversion into an industrial product and innovation . In the evaluation of projects these six components would be individually assessed.

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- ii) Any report submitted by any student should not deviate from the prescribed format and guidelines, else it is liable to be rejected.
- g) In addition to this, the evaluation for PG Projects would be as under:
 - i) For Project work in pre-final semester, the distribution of marks is based on following: Attendance in lab, documentation, completion & testing of project work with respect to survey, block diagram, circuit diagram, design approach, programming, optimization & efficiency, brief report and presentation.
 - ii) For Project work in final semester of the PG program, the distribution of marks is based on following: Attendance in lab, documentation & working of project work with respect to paper publications (in SCI/IEEE journal/transactions), experimental results & conclusions, product completion, presentation & detailed report.
- h) **The mid-term examinations** would be non-descriptive and broadly objective type, preferably online.
- i) **The end term examination** would consist of Maximum three hours duration with
 - i) five questions encompassing the entire syllabi. Whereas A question may or may not contain any optional part in it, as per evaluator's consideration.
 - ii) If provided, a question may contain internal choice with equal or unequal marks distribution (defined in question paper), as per the discretion of the evaluator. If a student attempts more than required, the evaluator may decide which parts of answers to consider for marking.
 - iii) The evaluation would emphasize on subject knowledge, understanding, analysis, synthesis and application. Thus questions may be descriptive, numerical, design-based or case studies.
 - iv) Wastage of paper, repeating same text, ambiguous marking of question numbers or any other act of deceiving the evaluator may lead to penalty of marks as long as such act does not fall into the category of unfair-means.
 - v) The students should legibly & clearly respond to questions without resorting to unfair-means. Unfair-means may lead to disciplinary proceedings as per the norms of the BAMU.
- 9) A student may appear in end term examination only after fulfilling the requisite attendance criteria and clearing all the dues. Any case of unfair-means or pending disciplinary proceeding may also make the student unfit to appear in the examination.
- 10) **The minimum passing marks** for any course is 33% or one third of the maximum marks, adding together all the components. If a student does not obtain the minimum passing marks in any course, he/she would be required to appear in the same examination again in next year's examination with the following conditions,
 - a) The reappearance in any examination would not have compulsion for attendance.
 - b) The students failing in last two semesters of their course may request for a re-examination.

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- c) If the course is not being offered in the subsequent year, the student may opt examination for a course that matches at least 60% in contents to his/her failed course. If, even such a course is not available, upon request from the student, the appropriate authority may conduct a special examination of the subject, as per the convenience of NIELIT.
- 11) **ATKT (Allowed To Keep Terms):** To be promoted to next class in an odd semester, a student is required to clear minimum of two third courses. Failing which he would be re-registered. Maximum permitted duration to complete the program would be double of the normal duration of the program. After which the student would forfeit his claim to be a bona-fide student of NIELIT Aurangabad.
- 12) If a student passes a course, his/her marks would be converted into applicable grade. A product of grade and credit would be accumulated to obtain the SGPA and then CGPA.
- 13) **The minimum credit criteria:** For the award of the degree/diploma, a student is required to acquire all the requisite credits prescribed/scheduled in all the semesters. However, if a student wishes to opt out of the program after completing the stipulated period with a relaxation of 3% in prescribed credits or one credit course, whichever is higher, he/she may be permitted to opt out with degree/diploma.
- 14) **Credit transfer:** In order to facilitate students with exchange programs with institutes/Universities of national and international repute, credits may be transferred in the following conditions.
- a) The other institute/University has an MoU with NIELIT for the purpose of academic exchanges which is duly approved, bilaterally. The MoU would be in accordance with statutory provisions.
 - b) A student initially enrolled at NIELIT may study in the other institute for part or rest of his/her program, provided he/she successfully acquires the prescribed credits at this institute in maiden attempts. This is applicable vice-versa.
 - c) The student would adhere to the scheme, terms, rules, regulations, ordinances and laws prevailing at the institute/place of study. If a student is terminated from the institute of study, his/her claim as student would automatically cease at his/her original institute, irrevocably.
 - d) The degree would be awarded to the student by the institute that has conducted the final examination or as per the terms defined in MoU, if any.
- 15) The decision of the institution would be final and binding in all matters related to attendance, ragging, gender discrimination, unfair-means and other unsolicited conditions.
- 16) If some issue is not covered in this scheme, the pertinent provisions of the BAMU would be *in-situ* applicable.
- 17) Any or all provisions of the above scheme are subject to change under notification to the students and other stake-holders through the institute website.

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Appendix-A

A1. Grade criteria:

In each credit course, the student's marks would be converted into grades as under.

Grade	Range	Equivalent percent	Value	Credit earned
F	As per the marks being converted	Below 33%	0	No
EE	As per the marks being converted	33%-45%	4	Yes
E	As per the marks being converted	45%-55%	5	Yes
D	As per the marks being converted	55%-65%	6	Yes
C	As per the marks being converted	65%-75%	7	Yes
B	As per the marks being converted	75%-85%	8	Yes
A	Minimum top 10% student in that course	-	9	Yes
A+	nearly top 30% student in Grade A in that course	-	10	Yes

If a student gets F grade in a course, the student would be required to repeat the course as per the provisions mentioned in the scheme.

A2. SGPA criteria

The SGPA would be calculated at the end of each semester, as under:

$$SGPA = \frac{\sum(\text{credit}_i * (\text{Grade value})_i)}{(\text{Sum of all credits in that Semester})}$$

The SGPA is on 10 point scale (as per the practice of majority of AICTE approved institutes)

A3. CGPA criteria

The CGPA would be calculated at the end of each semester and the calculation of CGPA after the last Semester would be reflected in the passing out certificate.

$$CGPA = \frac{\sum SGPA_i}{n}$$

The CGPA to percentage calculation would be as per the AICTE prescription.