



GUJARAT TECHNOLOGICAL UNIVERSITY

(Established by Government of Gujarat under Gujarat Act No.:20 of 2007)

ગુજરાત ટેકનોલોજીકલ યુનિવર્સિટી

(ગુજરાત સરકારના ગુજરાત અધિનિયમ ક્રમાંક : ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

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Ref: /GTU/OBCA Guidelines/2025/ 5340

Date: 8/07/2025

Guidelines for Implementation of ‘Outcome-Based Curriculum and Assessment’ for Students of BE w.e.f. A.Y. 2025-26 (applicable for newly enrolled students of Semester -1 in A.Y. 2025-26 and students who are studying in semester-3 in A.Y. 2025-26)

The **National Credit Framework (NCrF)**, developed under the National Education Policy (NEP) 2020, is a comprehensive framework that integrates academic and experiential learning across school, higher, and skill education. It provides a unified system for credit accumulation, transfer, and recognition to promote flexibility, mobility, and lifelong learning.

For undergraduate programs like Bachelor of Engineering (BE), NCrF enables the alignment of curriculum and assessment with clearly defined learning outcomes, practical skills, and multidisciplinary approaches. The emphasis is on **competency development, industry relevance, and measurable student achievements**.

1. Introduction of Term-Work / Self-Learning (TW/SL) Component

- From **A.Y. 2025-26**, all subjects in the BE curriculum (**applicable for newly enrolled students of Semester -1 in A.Y. 2025-26 and students who are studying in semester-3 in A.Y. 2025-26**) will include a **Term-Work / Self-Learning (TW/SL)** component in addition to the existing Lecture (L), Tutorial (T), and Practical (P) components.
- This initiative aims to promote **self-directed learning, skill development, and competency-based education** in line with the NEP 2020 framework.

2. Activities under TW/SL Component

- Each subject syllabus will specify a **list of activities** under the TW/SL component. These may include:
 - Mini-projects
 - Case studies
 - Research-based assignments
 - MOOCs / NPTEL courses
 - Industry visits and reports
 - Problem-solving / simulation exercises
 - Reflective journals or learning portfolios
- Faculty members will guide and assess these activities at the **institute level**.
- **Institutes are required to maintain proper records** of the TW/SL activities and assessments for academic audits and accreditation purposes.

3. Credit Calculation as per National Credit Framework (NCrF)

- Credits for all courses will now be calculated based on **total notional learning hours**, not only L-T-P.
- As per NCrF norms, **One Credit is equivalent to 30 notional learning hours**.



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- Notional hours include contact hours (L/ T/ P) and TW / SL.
- Notional learning hours include all forms of student engagement, such as:
 - Classroom teaching
 - Laboratory and workshop activities
 - Assignments, project work, field work
 - Self-study and guided learning
 - Online/digital learning and practical exposure

4. Revised Credit Calculation Methodology

- Credit calculation formula:

$$\text{Credits} = \text{Total Notional Learning Hours} / 30$$

- The Teaching Scheme will reflect the total learning hours (L + T + P + TW/SL) instead of weekly hours.

5. Revised Assessment Scheme

- To align with the inclusion of TW/SL and promote balanced internal and external evaluation:

Component	Previous Marks	Revised Marks
I (Internal)	20	50 (includes 30 marks from TW/SL)
V (Viva / Practical)	30	50
E (External Theory Exam)	70	70 (No change)
M (Mid-Semester Exam)	30	30 (No change)

- The **additional 30 marks in the Internal (I)** component are to be specifically used for **assessment of TW/SL activities**.
- Internal assessment should be based on timely submission, quality of work, and learning outcomes.

Teaching and Examination Scheme (Indicative):

Teaching and Examination Scheme (Indicative).											
Teaching - Learning Scheme (in Hours per Semester)					Total Credits = TH/30	Assessment Pattern and Marks					Total Marks
L	T	P	TW/ SL	TH		Theory		Tutorial / Practical			
						ESE (E)	PA (M)	PA/ (I)	TW/ SL (I)	ESE (V)	
45	0	30	45	120	04	70	30	20	30	50	200

- Where L = Lecture, T= Tutorial, P= Practical, TW/SL = Term-Work / Self-Learning, TH = Total Hours, ESE = End-Semester Examination, PA = Progressive Assessment



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6. Responsibilities of Faculty Members and Institutes

- Faculty members have to design and evaluate TW/SL activities.
- Institutes have to ensure the implementation and monitoring of TW/SL components across departments.
- Institutes have to maintain all records pertaining to the evaluation and assessment of self-learning activities for each student and preserve at the institute level. These records should be made available to the university upon request.
- Institutes are encouraged to utilize digital platforms, such as Microsoft Teams, for effective record-keeping and to ensure transparency in the evaluation and assessment of self-learning activities.

7. Activities suggested under Self-Learning / Term-Work Component:

Sr. No.	Name of the Activity	No. of Hours	Evaluation Criteria
1.	Industry/Research laboratory visit	Visit = 5h, Report preparation = 5h Total = 10h	Based on the report submitted. Report should contain observations and calculations based on industry/ lab data.
2.	Technical Video based learning related to the subject	Duration of video = 5h Report preparation = 5h Total = 10h	Report /presentation based on the video learning outcomes.
3.	Assignment writing. Numerical based assignment is preferable.	5 assignments of 4h each. Total = 20h	Based on the assignment submitted.
4.	Problem solving/Coding using C, C++, Python, SCILAB, MATLAB, MS-EXCEL or any other relevant software	5 small coding based assignments of 2h each. Total = 10h	Based on the coding solution submitted.
5.	Self-learning on-line course	Minimum duration of the course should be 10h.	Examination based assessment at the end of course. Based on the certificate produced.
6.	Complex problem solving	Maximum 2 problems. Study of the problem and solution finding. Total = 10h/ problem	Based on the depth of the solution submitted.
7	Videos on Industrial safety/Disaster	Duration of video = 5h Report preparation = 5h	Based on quiz/report submitted



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	Management aspects based on subject	Total = 10h	
8	Discussion on research paper based on relevant subject	5 research paper = 20 h	Summarize research paper and evaluation critical parameters
9.	Poster/chart/PowerPoint preparation on technical topics	Duration = 6 h	Based on poster/chart preparation and presentation skills
10	Working/non-working model on technical topics	Working = 12 h Non- working = 8 h	Based on inter department/external evaluation
11	Industrial exposure for 2-3 days to observe and provide tentative solutions on society /environment/health/any other issue	Duration = 15 h for industrial exposure Problem identification and tentative solution = 10 h Total = 25 h	Based on evaluation of critical problems and solutions
12	Group Discussion on emerging/trending technical topics based on subject	Duration = 1 h each	Based on performance in group discussion, technical depth, knowledge etc.
13.	Real world case studies based learning	Duration of data collection/study = 5h Report preparation = 5h Total = 10h	Based on in-depth study, technical depth, data collected, fact finding, etc.
14.	Application/Software development	Duration = 10 h	Depending on the complexity of the Application/Software
15.	Expert lecture/session	Duration 2 hrs. For attending the lecture/session – 2 hrs. and for report writing 2 hr.	Based on the proof of attendance and report submitted
16	Blog or Technical Article Writing	10h (Research – 6h, Writing – 4h)	Based on originality, technical content, references cited, and clarity of communication.
17	Annotated Video Explanation of Concept / Problem	10h (Preparation + Recording + Submission)	Based on accuracy of explanation, clarity, and presentation style.
18	Online Technical Quizzes/Simulations	Multiple quizzes summing up to 10h	Based on quiz scores and reflection report after each quiz.



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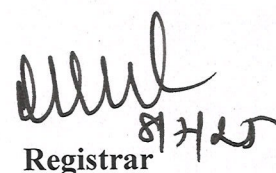
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19	Tech Blog/YouTube Channel Curation	10h (Content curation + Analysis)	Summary report on curated content and learning outcomes.
20	Patent Search and Innovation Gap Identification	10h (Search + Report)	Based on number of relevant patents analyzed and identification of innovation scope.
21	Maintenance or Troubleshooting Logbook	10h (For example: lab instruments, computer hardware)	Based on documented cases, approach, and resolution.

8. Activity Note

- All activities should be related to the subject.
- The number of hours is suggestive. Faculty can sub-divide the number of hours based on the activity. However, the total number of hours is fixed.
- For a course, min 3 activities must be carried out as per the availability of faculties and students. There is no limit for maximum number of activities.
- Rubrics for the evaluation can be prepared by the respective faculty member.
- Subject teachers can add the relevant activities from the above list other than those mentioned in the syllabus, with the consent of the head of the department and DQAC.
- Subject coordinator shall identify activities from the above list as per the subject needs, they will also declare a list of activities wise hours, evaluation scheme and rubrics to students at the beginning of the semester.


Registrar