Meeting Details: Dean (Academics) Office

University of Engineering & Management, Kolkata

Academic Year 2026-27

Implementation of the National Credit Framework (NCrF) for University of Engineering & Management (UEM, Kolkata)

Meeting Details:

- **Date:** Thursday, 29th October 2026
- **Time:** 10:00 AM
- **Mode:** Hybrid (Physical & Zoom)
- **Physical Venue:** Board Room, Main Building, Gurukul Campus
- **Online Link:** `https://us06web.zoom.us/j/6319961197?pwd=1WyERQyy8OGXFRryRQ7YibEnvQOyqT.1`
- **Chairperson:** Dr. Malay Gangopadhyay, Dean (Academics)
- **Attendees:** All Heads of Departments (HoDs), Assistant HoDs, Senior Professors

  The hybrid meeting was convened to establish an institutional blueprint for implementing the **National Credit Framework (NCrF)** across all streams at University of Engineering & Management (UEM, Kolkata).

The meeting integrated national regulatory directives issued by UGC, AICTE, NCVET, and the Department of Higher Education (Govt. of West Bengal). The primary objective is to transition from a rigid credit-hour structure to a flexible, outcome-based, and credit-levelized architecture aligned with **NEP 2020**.

- ***SYNTHESIS OF EXPERT PRESENTATION ON NEP GUIDELINES***

The Chairperson reviewed the core principles of the NCrF architecture derived from national guidelines:

1. Credit Metric

- 1 Theory Credit = 15 direct lecture hours / 30 Notional Learning Hours (NLH).
- 1 Laboratory Credit = 30 direct lab hours/45 experiential learning hour
- **Level Mapping for Higher Education:**
  - **Level 4.5:** UG Certificate (1 Year / 40–44 Credits cumulative)
  - **Level 5.0:** UG Diploma (2 Years / 80–88 Credits cumulative)
  - **Level 5.5:** Bachelor's Degree (3 Years / 120–132 Credits cumulative)
  - **Level 6.0:** B.Tech / Bachelor's (Honours / Research) (4 Years / 160–172 Credits cumulative)

2. Credit Lifecycle & Digital Backbone (ABC & APAAR)

All student credits must be processed through five core functional stages:

ASSIGN -----> ACCUMULATE -----> STORE (ABC) -----> TRANSFER -----> REDEEM

- **APAAR ID (Automated Permanent Academic Account Registry):** Every student must be registered with a unique 12-digit APAAR ID linked to DigiLocker and the Academic Bank of Credits (ABC) portal.
- **Credit Deposit:** Course completion records and partial credits must be uploaded to the ABC portal within the UGC-mandated timeline.

3. Multiple Entry and Exit Pathways (ME-ME)

- **Year 1 Exit (Level 4.5):** Undergraduate Certificate
- **Year 2 Exit (Level 5.0):** Undergraduate Certificate
- **Year 3 Exit (Level 5.5):** Undergraduate Diploma.
- **Year 4 Completion (Level 6.0):** Graduate degree (Honours with Research).

4. Recognition of Prior Learning (RPL) & Credit Limits

- **Informal & Non-Formal Learning:** Prior industry experience, hackathons, open-source projects, and informal certifications can be converted to academic credits via formal RPL assessment.
- **Ceilings:** Up to **30% of total degree credits** can be granted through RPL/Exemptions. Up to **50% of degree credits** can be earned through skill-based/vocational modules.
- **Online Learning Ceiling:** Maximum **40% of total program credits** can be earned via SWAYAM/MOOCs.

5. Institutional 4-Year B.Tech Credit Model (172 Total Credits Matrix)

Category Ref	Component Breakdown	Credit Allocation	% Share	Max Online Limit	Max Skill/Lab Limit
A1	Mathematics & Statistics	16 Credits	9.3%	8 Cr	-
A2	Basic Sciences (Physics, Chemistry, Biology)	12 Credits	7.0%	4 Cr	8 Cr (Lab)
A3	Engineering Sciences (Common Core)	8 Credits	4.7%	4 Cr	4 Cr (Workshop)
A4	Department Core Courses (ECE Core)	24 Credits	14.0%	8 Cr	8 Cr
A5	Department Electives	8 Credits	4.7%	4 Cr	4 Cr
A6	Major Project + 6-Month Industry Internship	20 Credits	11.6%	-	20 Cr (Project/OJT)
B	Minor Stream 1 (Approved Tech Basket)	16 Credits	9.3%	8 Cr	8 Cr

C	Minor Stream 2 (Multidisciplinary Basket)	16 Credits	9.3%	8 Cr	8 Cr
D	Multidisciplinary / Open Electives	32 Credits	18.6%	16 Cr	12 Cr
E	Soft Skills, Life Skills, Ethics & IKS	16 Credits	9.3%	16 Cr	8 Cr

- ***UNIVERSITY IMPLEMENTATION TEMPLATE & ADOPTION ROADMAP***

To ensure seamless execution, UEM, Kolkata will adopt the implementation roadmap as:

- ✓ STEP 1: Syllabus Restructuring into L-N-T-P (Lecture-Notional-Tutorial-Practical)
- ✓ STEP 2: Establishing Departmental Skill Baskets & alignment with events like hackathon, workshop, seminar etc for micro and nano credentials.
- ✓ STEP 3: Pre-Semester Notification of Detailed Rubrics & Syllabi, mapped to NCrF/AICTE/UGC), to students

Institutional Action Steps:

1. **Departmental Academic Committee (DAC):** Formed at the departmental level with senior faculty members. DAC will convert traditional L-T-P course format into the L-N-T-P format.
2. **Notional Learning Hour (NLH) Logbook:** Students will maintain a digital logbook on the institute's LMS to track events engagements, online micro-credentials, and industrial visits.
3. **Advance Rubric Disclosure Mandate:** As per NCrF guidelines, evaluation rubrics for continuous internal evaluation (CIE) and end-semester examinations (ESE) **must be published in the course handout and distributed to students on Day 1 of the semester**.

- ***SAMPLE CASE STUDIES USING SUBJECTS FOR DEPARTMENT OF ECE (UEM, KOLKATA)***

Institutional Assessment & Grading Structure (Standard 100-Mark Scheme)

All theory and laboratory courses follow a uniform evaluation scheme:

End Sem: 50% | Internal: 50%

- **End-Semester Examination (ESE): 50 Marks**
- **Continuous Internal Evaluation (CIE): 50 Marks**, distributed as follows:
  - **Mid-Semester Exam 1:** 10 Marks
  - **Mid-Semester Exam 2:** 10 Marks
  - **Attendance & Class Performance:** 10 Marks
  - **Remaining Component (20 Marks):**
    - *For Non-Deficient Courses (No Notional Hours required):* **20 Marks** assigned to standard theory/lab assignments and problem sets.

- *For Deficient Courses (With Notional Hours):* **10–20 Marks (flexible)** assigned directly to Notional Learning Activities (e.g., workshops, hackathons, technical events, verified MOOCs, mini-projects).

Five specific course models from B.Tech Electronics & Communication Engineering (ECE) curriculum are given to illustrate the operationalization of NCrF, comparing deficient and non-deficient teaching structures alongside detailed rubrics.

CASE STUDY 1: THEORY SUBJECT WITH DEFICIENT CLASS TEACHING HOURS

(Credit Attained Through Notional Learning Hours)

- **Course Title:** Microprocessors & Microcontrollers
- **Course Code:** PCCEE602
- **Target Credits:** 3 Credits (equivalent to 90 Notional Learning Hours)
- **Traditional Model:** L-T-P = 3-0-0 (Requires 60 hours of teaching).
- **Deficient Contact Model Implemented:** L-N-T-P = 1-1-1-0 (3 lecture hour/ week * 14 weeks= 42 hours; Deficit 48 hours will be attained by notional learning).
- **Deficit:** 48 Classroom Hours deficient against standard 3-credit lecture requirements.
- **Credit Compensation Strategy via Notional Learning Hours (48 Hours Total):**
    1. *Verilog / Assembly Language Hands-on Workshop:* 16 Hours (0.5 Cr equivalent)
    2. *8051/ARM Microcontroller Logic Contest & Design Hackathon:* 16 Hours (0.5 Cr equivalent)
    3. *Microcontroller Architecture Micro-Credential (Coursera):* 16 Hours (0.5 Cr equivalent)
    4. …
    5. …etc

    (The choice of tools of **Notional Learning** is flexible, as per department discretion)

Assessment Breakdown for PCCEE602 (100 Marks)

- **End-Semester Examination: 50 Marks**
- **Internal Evaluation: 50 Marks**
    - Mid-Sem Exam 1: **10 Marks**
    - Mid-Sem Exam 2: **10 Marks**
    - Attendance & Class Performance: **10 Marks**
    - **Notional Learning Component (Deficit Compensation): 20 Marks**
        - *Verilog/Assembly Workshop Portfolio:* 7 Marks
        - *Logic Contest & Design Hackathon:* 7 Marks
        - *Coursera Certification & Viva:* 6 Marks

CASE STUDY 2: THEORY SUBJECT WITH NON-DEFICIENT CLASS TEACHING HOURS

(Implementation of Notional Learning Hours Not Mandatory)

- **Course Title:** Electromagnetic Waves
- **Course Code:** PCCEC501
- **Target Credits:** 3 Credits (equivalent to 90 Notional Learning Hours)

- **Classroom Model:** L-T-P = 2-1-0 (Requires 60 hours of teaching).
    - Direct Lectures (L): 30 Hours (3 hrs/wk * 14 wks = 42 hours).
    - Tutorials (T): 15 Hours (1 hr/wk * 14 wks = 14 hours).
    - Total Contact Hours: 56 Hours direct instruction.
    - Assignments: 4 Hours.
- **NCrF Status:** Standard contact hours fully met; **notional skill modules are not required**.

Assessment Breakdown for PCCEC501 (100 Marks)

- **End-Semester Examination: 50 Marks**
- **Internal Evaluation: 50 Marks**
    - Mid-Sem Exam 1: **10 Marks**
    - Mid-Sem Exam 2: **10 Marks**
    - Attendance & Class Performance: **10 Marks**
    - **Standard Theory Assignments & Problem Sets: 20 Marks** (No deficit; evaluated via continuous problem sets and vector calculus tutorial assignments).

CASE STUDY 3: LAB SUBJECT WITH DEFICIENT LAB TEACHING HOURS

(Credit Attained Through Notional/Experiential Learning Hours)

- **Course Title:** Digital Signal Processing Laboratory
- **Course Code:** PCCECE 693
- **Target Credits:** 2 Credits (equivalent to 60 Lab Hours)
- **Standard Requirement:** 28 Practical Hours (2 hrs/wk * 14 wks)
- **Lab Deficit:** 32 Practical Hours deficient against standard 2-credit lab requirements.
- **Credit Compensation via Experiential Notional Learning Hours (15 Hours Total):**
    1. *DSP Simulator Open-Source Project (MATLAB/Python):* 6 Hours
    2. *Real-Time Audio Filter Design Challenge (Hardware DSK Board):* 6 Hours
    3. *Industry/ Field visit:* 8 hours
    4. *Project:* 12 hours

Assessment Breakdown for PCCECE 693 (100 Marks)

- **End-Semester Practical Examination & Viva: 50 Marks**
- **Internal Evaluation: 50 Marks**
    - Continuous Lab Performance & Execution (Mid-eval 1): **10 Marks**
    - Lab Quiz & Mid-eval 2: **10 Marks**
    - Attendance & Lab Journal Record: **10 Marks**
    - **Notional Experiential Component (Deficit Compensation): 20 Marks**
        - *Project:* 10 Marks
        - *Industry/ Field visit:* 10 Marks

CASE STUDY 4: LAB SUBJECT WITH NON-DEFICIENT LAB TEACHING HOURS

(Implementation of Notional Learning Hours Not Mandatory)

- **Course Title:** Analog & Digital Communication Laboratory

- **Course Code:** PCCECE491
- **Target Credits:** 1 Credits (equivalent to 30 Lab Hours)

- **Classroom Model:** L-T-P = 0-0-1
    - Direct Laboratory Contact Hours: 30 Hours (2 hrs/wk * 15 wks).
    - Total Notional Hours: 30 Hours = 1 Credits.
- **NCrF Status:** Standard contact hours fully met; **supplementary notional hours are not required**.

Assessment Breakdown for PCCECE491 (100 Marks)

- **End-Semester Practical Exam & Viva: 50 Marks**
- **Internal Evaluation: 50 Marks**
    - Mid-Sem Lab Practical Test 1: **10 Marks**
    - Mid-Sem Lab Practical Test 2: **10 Marks**
    - Attendance & Class Performance: **10 Marks**
    - **Continuous Lab Assignments & Experiments: 20 Marks** (Standard evaluation of weekly circuit setups, hardware execution, and data accuracy across 12 scheduled experiments).

CASE STUDY 5: SESSIONAL / MINI-PROJECT

(Project & Applied Skill Matrix)

- **Course Title:** Advanced VLSI Design
- **Course Code:** PCCECE 681
- **Target Credits:** 1 Credits (equivalent to 30 Class Hours)
- **Delivery Breakdown:**
    - Classroom teaching hours: 14 Hours (1 hrs/wk * 14 wks).
    - Self-Directed Notional Project Hours: 16 Hours (CAD Tool layout design, DRC/LVS check, parasitic extraction, and physical synthesis).

Assessment Breakdown for PCCECE 681 (100 Marks)

- **End-Semester Defense & External Jury Viva: 50 Marks**
- **Internal Evaluation: 50 Marks**
    - Mid-Term Design Review 1 (Schematic & RTL): **10 Marks**
    - Mid-Term Design Review 2 (Layout & DRC/LVS): **10 Marks**
    - Studio Attendance & Continuous Progress: **10 Marks**
    - **Notional Project Deliverable & CAD Logbook: 20 Marks** (Post-layout simulation, timing report, GDSII layout verification, and design logbook).

Detailed Assessment Rubric for Notional Learning Component (10-20 Marks)

- **Scoring scale**

Level	Marks	Descriptor
Level 1: Technical participation or contribution	**1**	Active, evidenced technical involvement (presented, built, completed, or contributed) without external recognition

Level 2: Participation with recognition	**2**	Level 1 plus external or institutional recognition (award, rank, publication, selection, distinction, or invited role)
Not attained	0	Attendance only, no evidence, or no technical contribution

Activity	Level 1 (1 mark): technical participation or contribution	Level 2 (2 marks): participation with recognition	Indicative hours (credit)
Conference	Presented a paper or poster, with a peer-reviewed or accepted submission	Best Paper or Best Poster award, Scopus/IEEE-indexed publication	30 (1)
Hackathon	Built and demonstrated a working prototype or solution as part of a team	Winner, runner-up, finalist (top 10), or special category award; idea incubated or sponsored	30 (1)
Workshop	Completed hands-on sessions with a lab output, assignment, or mini-project (1 day)	Completed hands-on sessions with a lab output, assignment, or mini-project (More than 1 day)	15–30 (0.5–1)
Seminar	Attended a technical talk and prepared a report with Q&A participation	-	15 (0.5)
Exhibition	Displayed a working model or prototype with a technical explanation	Award, jury selection, state or national-level showcase, or media or industry recognition	30 (1)
Project (mini, major, or sponsored)	Completed a defined technical project with a report, working output, and viva	Funded, patented, published, or filed; won a project competition; or adopted by industry	60–120 (2–4)
Industry certification	Completed a industry certification	Passed with distinction or a high percentile, an advanced-level certification, or an industry placement or offer linked to it	30–60 (1–2)
Online course (MOOC: Coursera, etc.)	Completed the course with assignments and passed the assessment	Elite, Elite+Gold, Topper, or Distinction; or proctored exam score above 75%	30–60 (1–2)
Internship or industry training	Completed the minimum duration with a technical task and report	Pre-placement offer, stipend-based selection, or commendation or outcome letter from the host	120 (4)
Technical competition or contest	Participated and completed all rounds with a technical submission	Podium finish, national or international rank, or qualification to the next level	15–30 (0.5–1)
Patent or innovation or startup	Filed an idea disclosure or prototype with a technical write-up	Patent published or granted, or incubation, seed funding, or startup registration	60 (2)

Implementation Guidelines for the Co-curricular Assessment Rubric

1. **Scope of application**
    - The rubric applies to all listed activities: conference, hackathon, workshop, seminar, exhibition, project, industry certification, online course, internship, competition, publication, chapter leadership, and patent or startup.
    - Activities must be technically aligned to the course or programme outcomes.
2. **Marking scale**
    - Level 1 (technical participation or contribution) earns **1 mark**.
    - Level 2 (participation along with recognition) earns **2 marks**.
    - Level 2 includes all Level 1 requirements. Recognition alone, without technical contribution, earns no marks.
    - Attendance-only participation earns 0 marks.
3. **Maximum marks per activity instance**
    - A single activity instance carries a maximum of **2 marks**.
4. **Multi-event technical festivals (Innovacion, Bengal E-Summit, etc.)**
    - A student can earn a maximum of **4 marks (2 + 2) in a given technical event** with multiple sub-events.
    - The ceiling holds regardless of the number of sub-events entered. For example, hackathon + exhibition + paper presentation + workshop within one festival still total **not more than 4 marks**.
    - Each of the two scoring slots is capped at 2 marks, and marks are awarded only for distinct, separately evidenced contributions.
    - Where a student qualifies in more than two sub-events, the two highest-scoring ones are counted.
5. **Alignment to the course and notional learning hours**
    - Students may participate in **any event aligned to the specific course** to make up the **deficit notional learning hours** identified by the subject expert.
    - The subject expert specifies the deficit hours (1 credit = 30 notional learning hours) and certifies the relevance of the chosen event to the course outcomes.
    - Activities outside the course's technical domain may be recorded but do not offset the deficit hours.
6. **Evidence requirement**
    - Marks are awarded only against verifiable proof: certificate, acceptance or result letter, repository or demo link, report, or verification ID.
    - Level 2 requires proof of the recognition itself (award letter, rank list, publication DOI, invitation letter).
7. **Non-stacking rule**
    - The same output counts only once, under the higher-value activity. For example, a project that wins a hackathon and is later published is not credited separately for both, unless the contributions are distinct.
8. **Cumulative cap**
    - A semester or programme-level cap (for example, the best 5 activities) applies to prevent over-counting.

- ***ACTION ITEMS, RESPONSIBILITIES & TIMELINES***

To ensure smooth operationalization across all departments, the following action plan was approved:

S.No.	Key Action Item	Responsible Authority	Target Deadline
1	**Curriculum Restructuring into** LN-T-P**:** Map all existing B.Tech engineering courses into 30 Notional Learning Hours per credit metric.	All HoDs & DAC members	20th November 2026
2	**Publication of Advance Rubrics:** Publish detailed rubrics for all theory, lab, and sessional subjects on the institute LMS/Portal for student access.	Course Coordinators & Faculty Members	First class in any semester
3	**Review Meeting (Department wise)**	HOD, Asst HOD, Course Coordinators & Faculty Members	***Tuesday, 3rd November, 2026, Gurukul Campus, ECE HOD Room.*** • **10:00 AM – 10:30 AM:** BioTech • **10:30 AM – 11:00 AM:** B.B.A • **11:00 AM – 11:30 AM:** B.C.A • **11:30 AM – 12:00 PM:** C.S.E and allied (Salt Lake Sector) • **12:00 PM – 12:30 PM:** C.S.E and allied (Newtown Sector) • **12:30 PM – 01:00 PM:** ECE,EEE & Electrical ***Wednesday, 4th November, 2026, Gurukul Campus, ECE HOD Room.*** • **10:00 AM – 10:30 AM:** Mechanical • **10:30 AM – 11:00 AM:** MBA •**11:00 AM – 11:30 AM:** BHTA • **11:30 AM – 12:00 PM:** LLB • **12:00 PM – 12:30 PM:** MCA

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