No. KITS/Acad/2020-21/Policy Document on CIE:ESE PRR-20   Date: 23-12-2020

Integrating Innovation Incubation Research and Entrepreneurship (I²RE) into course Teaching: PRR-20

POLICY DOCUMENT

You cannot teach a man anything; you can only help him discover it within himself – Galileo

1. Engineering programmes, both at UG and PG level, are expected to impart required Knowledge (K), Skills (S) and Qualities (Q) and facilitate students to acquire the characteristics of a good engineer.

2. National attention is today focused on the education of engineers and scientists and hence imparting KSQ has to be at the core of engineering.

3. Accreditation and outcome based education (OBE) have become the foci of higher education in India since 2015. Our programmes are to be accredited by NBA and NBA requires all the engineering programmes (both at UG and PG level), attain the programme outcomes (POs) and programme specific outcomes (PSOs) through various course specific activities and have to demonstrate that the POs and PSOs are helping for continuous improvement. This in turn helps us to have continued institute level accreditation by NAAC and thereby improving our overall grade.

4. As a higher education institute, we should plan all the teaching-learning activities to facilitate students to attain well-defined and measurable outcomes. This is the most important requirement for all the faculty members at this institute.

5. According to **annual employability survey 2019 report**, approximately 80% of Indian engineering graduates are not employable. The reason being the knowledge (K) and skills (S) imparted to students are not matching with the K & S requirement of industry. The students are not being exposed to the requirements of **industry 4.0** with suitable inputs on research and innovations happening; and also the students are not being properly motivated to the concept of "**continuous learning throughout life** (life-long learning)". So focus should also be on **job-relevant teaching-learning process,** where in providing ample opportunities for **self-learning** is also a key factor.

6. There has been a major change in the field of higher education. The major shift is from **teacher centricity to learner centricity**. To strengthen learning process, the cognitive domain learning levels need to be matched with the industry expectations as well as higher education requirement of our country. This requires special emphasis on exposing students to the culture of research and innovation. Hence there is pressing requirement of exposing students to Innovation Incubation Research and Entrepreneurship (I^2RE) culture. The idea behind I^2RE is to develop students into **independent thinkers and prepare them for the future challenges**. Both technical and soft skills will play a vital role in this.

7. It is quite difficult to inculcate these I^2RE skills in students by offering a single dedicated course. Rather there should be a sustained teaching-learning plan for this by every course faculty. All the course faculty members have to make the students to work on various academic activities which have the potential to impart the I^2RE skills. **It is with this objective, it has been decided to integrate I^2RE into course teaching by the faculty**. This requires **sensible inclusion of various academic components**, giving scope for self-learning also, into course teaching and equally important is a **systematic continuous internal evaluation (CIE)**

8. The CIE plays a vital role in imparting I^2RE skills. The quality of student learning can enormously be improved by designing a suitably weighted continuous internal evaluation to various components aimed at imparting I^2RE skills.

9. In context of teaching learning process, the **faculty has a greater role to play as facilitator**. The role of course faculty is socially significant as it affects the KSQ of future engineering graduates. So, the course faculty at this institute is expected to play many roles and most important is **Course faculty as a facilitator of student learning.** The course faculty should facilitate different dimensions of learning and students should be exposed to **course research papers**, **course patents**, **course projects** and **business ideas** related to course handled by faculty. This exposure to research papers, patents encourages students towards innovation and entrepreneurship. In addition, the course faculty also have to **ensure accountability on CIE for quality assurance**.

10. **CIE: ESE** - The **PEOs of the PG programmes of our institute** lay special emphasis on producing PG students having KSQ for **Research & Innovation**, **Technical expertise & Successful career** and **Soft skills & Lifelong learning**. The core idea of exposing our students to I^2RE essentially demands emphasis on CIE. This requires a CIE giving due weightage to all the academic activities which have the potential to impart I^2RE skills. To meet PEOs of the PG programmes, more weightage is to be given to the CIE. **Hence, in PRR-20, the courses are designed to have 60:40 weightage for CIE and ESE.**

11. The grading will be based on CIE carrying 60% weightage and ESE carrying 40% weightage as shown below

MSEs	20%	*(70% of the best of MSE-I & MSE-II marks)* *+ (30% of the other MSE marks)*
MINOR Exams	10%	*Average of M-I & M-II marks*
Assignments	8%	*Average of A-I & A-II marks*
SA - CRPs	8%	Summarizing two course research papers
SA - CPs	8%	Summarizing two course patents
COURSE PRESENTATIONS: CRP-I/CP-I/CRP-II/ CP-II/Course Project presentation/Business Idea	6%	No of students in PRR-20 (N) = 30 students
		Presentation on CRP-I / Presentation on CP-I / Presentation on CRP-II / Presentation on CP-II
		Max. 8 students / Max. 7 students / Max. 8 students / Max. 7 students
End Semester Exam	40%	End Semester Examination

12. The weightage to different components under CIE carrying 60% weightage and ESE carrying 40% weightage is as below:

PRR – 20 (Continuous Internal Evaluation)				Marks	Minimum marks
MSE – 1		20 Marks	*(70% of the best of MSE-I & MSE-II marks) + (30% of the other MSE marks)*	20 Marks	07/20
MSE – 2		20 Marks			
Minor – 1		10 Marks	*Average of M-I & M-II marks*	10 Marks	04/10
Minor – 2		10 Marks			
Assignment – 1		8 Marks	*Average of A-I & A-II marks*	08 Marks	
Assignment – 2		8 Marks			
Special Assignments	CRP-1	04 Marks	*Two page summary Report on course research paper - I*	04 Marks	10/30
	CRP-II	04 Marks	*Two page summary Report on course research paper - II*	04 Marks	
	CP-I	04 Marks	*Two page summary Report on course patent - I*	04 Marks	
	CP-II	04 Marks	*Two page summary Report on course patent - II*	04 Marks	
Course Presentations: CRP-I/CP-I/CRP-II/CP-II/Course Project presentation/Business Idea		06 Marks	*PPT Presentation and viva-voce*	06 Marks	
PRR-20 End Semester Examination (ESE)				40	14/40
			Total	**100 Marks**	**35/100**

13. **CIE results presentations by course faculty**: At the end of the semester, the chairperson DAAC (*HoD/Chairperson BoS*) shall arrange for CIE results presentations by all the faculty. During these presentations, the course faculty is expected to present the CIE statistics & normal distribution (Bell Curve) **for each component of CIE** and also the overall CIE result. **This is to ensure the course faculty accountability on CIE**. The Chairperson shall submit the minutes of the proceedings with all the approved course CIE result copies, segregated section-wise, to the CoE for inclusion in final grading.

14. The Chairperson DAAC (*HoD/Chairperson BoS*) shall make all efforts to ensure proper continuous evaluation by the course faculty on every component of CIE listed in the table at S.No 12. Course faculty shall be informed to present evaluation statistics & normal distribution (Bell Curve) on every component of CIE and overall CIE result. The CIE result Bell Curve shall be close to normal distribution on every component. In case of deviations from normal distribution, the Chairperson should advise the course faculty to re-evaluate that component(s) and submit for re-presentation of the results of CIE before the DAAC.

15. The Dean-academic affairs, shall provide **a slot for CIE results presentation in the ALMANAC**.

16. The Dean-academic affairs, shall release the format and guidelines for scrutiny of the CIE results to be used by the DAAC.

17. A user-friendly facility, for plotting Bell Curves, has been added in our CMS to help the course faculty for accountable evaluation of each component of CIE.

18. The HoDs shall take email approval from the BoS for the 60:40 scheme of instruction and evaluation under PRR-20.

Principal

To

All the HoDs for necessary approval on PRR-20 scheme of instruction and evaluation from the BoS

Copy to:
1.   *The Secretary & Correspondent sir*
2.   *All AAC members*