INDIAN INSTITUE OF TECHNOLOGY, ROORKEE

DEPARTMENTAL REVIEW TEMPLATE

1. **Name of Department/Center : Mechanical & Industrial Engineering**
2. **Reviewers :**
    1. **Dr. H.S. Kushwaha**
    2. **Dr. Barun Chakrabarti**

3. **Date of Review: 24th April, 2014**

GRID FOR ASSESSMENT

NOTE:

i. Please grade in the box provided for the following parameters in the range of 1-10 with 10 being the highest.
ii. Leave 'blank' for 'No Comment'.
iii. Kindly give your opinion on the strength and weakness of the Department/ Center and your suggestions for future growth.

I. ACADEMICS

I.1	Undergraduate	Score
1.	Curriculum i. Curricular Structure ii. Course Syllabi iii. Flexibility	 09 09 09
2.	Formal Academic Load on Students i. Teaching ii. Laboratory/Practical iii. Projects(minor/major)	 09 09 09
3.	Evaluation Process i. Continuing Evaluation ii. Mid-term Evaluation iii. End-term Evaluation	 09 09 09
4.	Academic Ambience	09
5.	Opportunity for Peer-Based Learning	08
6.	Opportunity for Further Learning(Breadth and Depth) i. Elective Courses Specialization	 09

	ii. Minor with Major Discipline iii. Honors Programme in Major Discipline	09 (N.A.)
7.	E-Assisted Learning i. Availability of Library Resources and Major Search Engines (like Scopus, Web of Science) ii. Multi-Media Assisted Teaching	 09 08
8.	In –Curriculum Research/Exploration Opportunity to Students	09
9.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	 09 08
10.	Faculty –Student Interaction	09
11.	Faculty Mentoring of Students	09
12.	Faculty Advisor System for Students/Class of Students	09
13.	Self Study Courses for Student	08
14.	Effective Teaching Mechanism for Enhanced Number of Students in Various Classes	09
15.	Effectiveness of Assisted Learning: Tutorial System for B.Tech Students/ Seminars	09

I.2	**Graduate Programmes (Masters)**	**Score**
1.	Curriculum i. Curricular Structure ii. Course Syllabi iii. Flexibility	 09 09 09
2.	Formal Academic Load on Students i. Teaching ii. Laboratory/Practical iii. Seminar/Dissertation	 09 09 09
3.	Evaluation Process i. Continuing Evaluation ii. Mid-Term Evaluation iii. End-Term Evaluation	 09 09 09
4.	Academic Ambience	09
5.	Opportunity for Peer-Based Learning	08
6.	Opportunity for further Learning(Breadth and Depth) Elective Courses (Specialization Electives)	09
7.	E-Assisted Learning i. Availability of Library Resources and Major Search Engines (like Scopus, Web of Science) ii. Multi-Media Assisted Teaching	 09 08
8.	In –Curriculum Research/Exploration Opportunity to Students	09
9.	Technical Societies/ Colloquium for Students i. Departmental Society	 09

	ii. Student Chapter(s) of Professional Societies	08
10.	Faculty –Student Interaction	09
11.	Faculty Mentoring/Supervising of Students	09
12.	Faculty Advisor System for Students/Class of Students	09
13.	Effectiveness of Assisted Learning: Home Assignments/Seminars/Presentations	09

I.3	**Doctoral (Ph.D) Programmes**	**Score**
1.	Pre-Ph.D Courses and Evaluation Process	09
2.	Comprehensive Courses Examination	09
3.	Breadth and Depth of Knowledge of Students	09
4.	Seminar/ Presentations and Technical Communication	09
5.	Average No. of Research Students/Faculty	09
6.	Average No. of Research Papers of Ph.D Students	09
7.	Average Duration to Complete Ph.D (years)	09

II. RESEARCH

		Score
1.	Research Ambience in the Department	09
2.	Research Awareness among Doctoral Students	08
3.	Competence Level of Doctoral Students for Research	09
4.	Quality of Research	09
5.	Quality of Publications	09
6.	Impact of Publications	09
7.	Relevance of Research to Knowledge Generation	09
8.	Societal Relevance of Research	09
9.	Exposure of Researchers to the International State of Art	09
10.	Student Exposure to Attending Quality Conferences/Symposia	08
11.	Growth in Ph.D Programme	10
12.	Quality of Research Infrastructure	08
13.	Utilization of Existing Research Infrastructure	09
14.	Department Initiative on Faculty Hiring	09
15.	Breadth and Depth of Research in the Department	09
16.	Research Intensity of Faculty Members	09

Futuristic Areas For Hiring Faculty Members Research efforts in the current areas are to be sustained by hiring experienced Faculty, specially in Design stream.

Research Areas for Improvement Developments being done at Lab level need to be extended / proven at the scale relevant to Industry.

Comments (not more than 100 words for each given below)

Strength:

a) Diversity of current research areas

b) Good focus on upgrading of Lab facilities

Weakness: a) Lab-level R&D work needs to be proven for practical Industry level applications

b) For selecting appropriate research areas the Industry interactions need to increase

Suggestions for improvement: a) To establish a forum for enhanced Industry interactions

b) To take up Industry topics for research

c) To increase number of Student Chapters of Professional Societies

d) To enhance Stipend for research scholars, funding for Project expenses and conference participation.

III. Departmental Infrastructure

		Score
1.	Adequacy of Class Rooms and Multi-Media Facility	09
2.	Availability of Laboratories	09
3.	Availability of Conference/Seminar Room, etc.	09
4.	Availability of Seating Space for Research Students	09
5.	Availability of Internet Services in Research Labs and Class Rooms	09
6.	Departmental Library and E-Resources	09
7.	Computing Facilities and Software	09
8.	Adequacy of Offices and Furnishing for Faculty	09
9.	Faculty- Student Ratio	09
10.	Support Staff (Technical/Administrative) Adequacy	08

Comments (not more than 100 words for each given below)

Strength: Good infrastructure for experimental/ manufacturing facilities to support research

Weakness: Comprehensive Medical Centre facilities in Campus

Suggestions for improvement: a) To replenish experienced Lab staff getting retired
b) To train Lab staff regularly on new facilities being acquired
c) To enhance Medical Centre facilities

IV. Admissions of Ph.D Students

		Score
1.	Intake of Ph.D Students	10
2.	Admission Process	09

Suggestions:

V. Outcomes

		Score
1.	Placements	09

	i. Placement of B.Tech/IDD Students ii. Placement of Masters Student iii. Placement of Ph.D Students	09 09 09
2.	Average No. of Ph.D.s Awarded per Year	09
3.	Publications per Faculty in ISI Indexed Journals/Year	09
4.	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	09
5.	Recognitions; Awards(National/International) to Faculty/Students	09
6.	Consultancy and Projects	09
7.	No. of Ph.D. graduates who took Academics as Career (Based on Data of Last 5 Years)	09

Comments and Suggestions for improvement:

Industry interactions (frequency and intensity) may be improved to enhance placement opportunities for students.

Date: 24 APRIL 2014

H Kushwaha

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(Signature of the Reviewer)

(Name and Address of the Reviewer)

Barun Chakrabarti.

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