INDIAN INSTITUE OF TECHNOLOGY, ROORKEE

DEPARTMENTAL REVIEW TEMPLATE

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1. **Name of Department/Center : Computer Science & Engineering**
2. **Reviewers :**
     i.   **Prof. Om Vikas (Former Director, IITM Gwalior)**
     ii. **Prof. Saroj Kaushik (IIT, Delhi)**
     iii. **Dr. B.K. Murthy (Exec. Director, CDAC Noida)**

3. **Date of Review: 13.05.2014**

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	8
	ii.	Course Syllabi	8
	iii.	Flexibility	7
2.		Formal Academic Load on Students	
	i.	Teaching	8
	ii.	Laboratory/Practical	6
	iii.	Projects(minor/major)	8
3.		Evaluation Process	
	i.	Continuing Evaluation	9
	ii.	Mid-term Evaluation	10
	iii.	End-term Evaluation	10

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4.	Academic Ambience	9
5.	Opportunity for Peer-Based Learning	8
6.	Opportunity for Further Learning(Breadth and Depth) i. Elective Courses Specialization ii. Minor with Major Discipline iii. Honors Programme in Major Discipline	8 9 9
7.	E-Assisted Learning i. Availability of Library Resources and Major Search Engines (like Scopus, Web of Science) ii. Multi-Media Assisted Teaching	10 8
8.	In –Curriculum Research/Exploration Opportunity to Students	7
9.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	9 8
10.	Faculty –Student Interaction	6
11.	Faculty Mentoring of Students	6
12.	Faculty Advisor System for Students/Class of Students	6
13.	Self Study Courses for Student	0
14.	Effective Teaching Mechanism for Enhanced Number of Students in Various Classes	6
15.	Effectiveness of Assisted Learning: Tutorial System for B.Tech Students/ Seminars	8

Note- Number of Students is large that is affecting efficiency of Teaching- Learning Process. Lab component in courses may be increased by replacing tutorials.

I.2	Graduate Programmes (Masters)	Score
1.	Curriculum i. Curricular Structure ii. Course Syllabi iii. Flexibility	8 8 8
2.	Formal Academic Load on Students i. Teaching ii. Laboratory/Practical iii. Seminar/Dissertation	8 7 8
3.	Evaluation Process i. Continuing Evaluation ii. Mid-Term Evaluation iii. End-Term Evaluation	9 10 10
4.	Academic Ambience	8
5.	Opportunity for Peer-Based Learning	8
6.	Opportunity for further Learning(Breadth and Depth) Elective Courses (Specialization Electives)	8
7.	E-Assisted Learning i. Availability of Library Resources and Major Search Engines (like Scopus, Web of Science)	10

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	ii. Multi-Media Assisted Teaching	8
8.	In –Curriculum Research/Exploration Opportunity to Students	9
9.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	9 8
10.	Faculty –Student Interaction	7
11.	Faculty Mentoring/Supervising of Students	4
12.	Faculty Advisor System for Students/Class of Students	0
13.	Effectiveness of Assisted Learning: Home Assignments/Seminars/Presentations	6

I.3	Doctoral (Ph.D) Programmes		Score
1.	Pre-Ph.DCourses and Evaluation Process		10
2.	Comprehensive Courses Examination		10
3.	Breadth and Depth of Knowledge of Students		8
4.	Seminar/ Presentations and Technical Communication		9
5.	Average No. of Research Students/Faculty	(2)	-
6.	Average No. of Research Papers of Ph.DStudents	4	-
7.	Average Duration to Complete Ph.D(years)	4/Yrs	-

II.   RESEARCH

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

Note: Research will be enhanced upon induction of new faculty.

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Futuristic Areas For Hiring Faculty Members

VLSI Design, Theoretical computer science, AI & Machine Learning, Robotics

Research Areas for Improvement

Language Technology, Embedded Systems, Semantic Web Technology, High speed network, Parallel Computing.

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

Strength:

- Initiated CSE programme in early stage under ECE Department.
- Tradition & quality education.
- Quality of students is good.
- Exposure to international research activities.

Weakness:

- Low faculty students ratio
- Low industry interaction due to location disadvantage.
- Inadequate research facilities.
- Low level of interdisciplinary research.

Suggestions for improvement:

- Active faculty recruitment drives to increase research output.
- Improve infrastructure with additional office and lab space.
- Encourage innovation- centric teaching and learning process.
- Identify few thrust areas and overlapping areas for interdisciplinary research.
- Emphasis on open sources and multilingual computing keeping in view of creativity enhancement and societal relevance.

III. Departmental Infrastructure

			Score
1.	Adequacy of Class Rooms and Multi-Media Facility		8
2.	Availability of Laboratories		8
3.	Availability of Conference/Seminar Room, etc.		8
4.	Availability of Seating Space for Research Students		9
5.	Availability of Internet Services in Research Labs and Class Rooms		10
6.	Departmental Library and E-Resources		10
7.	Computing Facilities and Software		9
8.	Adequacy of Offices and Furnishing for Faculty		10
9.	Faculty- Student Ratio		1:39
10.	Support Staff (Technical/Administrative) Adequacy		8

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

Strength:

- Relatively adequate infrastructure.
- Availability of space for researcher.
- Good library and e- learning resources.

Weakness:

- Very low faculty- Student ratio (1:39) against 1:15 for UG and 1:10 for PG.

Suggestions for improvement:
- Need for more space for additional labs.
- Need for more space for Additional Faculty and research students.
- Introduction of "Earn while you Learn" scheme.
- Introduction of projects lab for B. Tech students.
- Introduction of Computing Tools and Trouble Shootings Hobbes workshop for students.

IV. Admissions of Ph.D Students

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

Suggestions:

- Talented B. Tech students may be encouraged for research and innovation and entry into Ph.D Programmes.
- M.Tech Programmes may be offered as regular M.Tech and MS by research.

V.   Outcomes

				Score
1.	Placements			
	i.	Placement of B.Tech/IDD Students		10
	ii.	Placement of Masters Student		10
	iii.	Placement of Ph.D Students		3
2.	Average No. of Ph.D.s Awarded per Year		3	-
3.	Publications per Faculty in ISI Indexed Journals/Year		4/yr	-
4.	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)		10	-
5.	Recognitions; Awards(National/International) to Faculty/Students			-
6.	Consultancy and Projects			6
7.	No. of Ph.D. graduates who took Academics as Career(Based on Data of Last 5 Years)			-

Comments and Suggestions for improvement:
- Need to create wider awareness among faculty about outcome based assessment.
- Need to specify vision, mission, programme educational objectives, programme outcomes and course outcomes as per NBA guidelines in view Washington Accord.
- Need to encourage societal out-reach programs.
- Students learning outcomes need to be well documented.
- Ph.D. programme may have compulsory courses on Engineering Research Methodology and Teaching Methods in addition to research specific courses.
- M.Tech and Ph.D students may also be encouraged to mentor B.Tech students for their projects.

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