

INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE

DEPARTMENTAL REVIEW TEMPLATE

1. Name of Department/Center : Department of Physics

2. Reviewers :

Prof. Lakshman Chaturvedi  
Dr. Amit Roy

3. Date of Review: 27.03.2014.

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 <ol style="list-style-type: none"><li>i. Curricular Structure</li><li>ii. Course Syllabi</li><li>iii. Flexibility</li></ol>	8 8 8
2.	Formal Academic Load on Students <ol style="list-style-type: none"><li>i. Teaching</li><li>ii. Laboratory/Practical</li><li>iii. Projects(minor/major)</li></ol>	9 9 9
3.	Evaluation Process <ol style="list-style-type: none"><li>i. Continuing Evaluation</li><li>ii. Mid-term Evaluation</li><li>iii. End-term Evaluation</li></ol>	9 9 9

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

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

	ii. Multi-Media Assisted Teaching	8
8.	In –Curriculum Research/Exploration Opportunity to Students	8
9.	Technical Societies/ Colloquium for Students	
	i. Departmental Society	9
	ii. Student Chapter(s) of Professional Societies	9
10.	Faculty –Student Interaction	5
11.	Faculty Mentoring/Supervising of Students	5
12.	Faculty Advisor System for Students/Class of Students	5
13.	Effectiveness of Assisted Learning: Home Assignments/Seminars/Presentations	8

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

## II. RESEARCH

		Score
1.	Research Ambience in the Department	9
2.	Research Awareness among Doctoral Students	9
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	
9.	Exposure of Researchers to the International State of Art	8
10.	Student Exposure to Attending Quality Conferences/Symposia	9
11.	Growth in Ph.D Programme	9
12.	Quality of Research Infrastructure	8
13.	Utilization of Existing Research Infrastructure	8
14.	Department Initiative on Faculty Hiring	8
15.	Breadth and Depth of Research in the Department	8
16.	Research Intensity of Faculty Members	8

**Futuristic Areas For Hiring Faculty Members**

Quantum Optics & Quantum Computing  
Accelerator based Interdisciplinary research.

**Research Areas for Improvement**

Experimental Condensed Matter Physics and Photonics

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

**Strength:**

In both areas, there are excellent individual researchers.

**Weakness:**

1. Lack of collaborations between the different groups. This also leads to underutilisation of equipment.
2. Majority of faculty are not aiming to reach the highest level of excellence they are capable of.

**Suggestions for improvement:**

There should be collaborative programmes at the cutting edge of research.  
~~Internet~~

**III. Departmental Infrastructure**

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

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

Strength:

Present infrastructure meets the minimal needs of the department.

Weakness:

Space shortage is hampering expansion of academic program of the department.

Suggestions for improvement:

The 4 storeyed building of the department definitely requires lifts in the main and box building.  
Internet connectivity should be improved.

#### IV. Admissions of Ph.D Students


		Score
1.	Intake of Ph.D Students	8
2.	Admission Process	8
Suggestions:		

## V. Outcomes

		Score
1.	Placements i. Placement of B.Tech/IDD Students ii. Placement of Masters Student iii. Placement of Ph.D Students	7 8 8
2.	Average No. of Ph.D.s Awarded per Year	8
3.	Publications per Faculty in ISI Indexed Journals/Year	9
4.	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	8
5.	Recognitions; Awards(National/International) to Faculty/Students	7
6.	Consultancy and Projects	8
7.	No. of Ph.D. graduates who took Academics as Career (Based on Data of Last 5 Years)	9
<b>Comments and Suggestions for improvement:</b>  Proper database of pass outs and Alumni should be made.  Post doctoral Fellowship programme of the department should be strengthened.		

Date: 27.03.2014.

Lakshman Chaturvedi  
 Lakshman Chaturvedi  
 Former Vice-Chancellor,  
 Gurughasidas Central University  
 Bhatnagar, (C.S.)

  
 (Signature of the Reviewer)  
 AMIT ROY  
 Former Director  
 IVAC  
 New Delhi.

(Name and Address of the Reviewer)