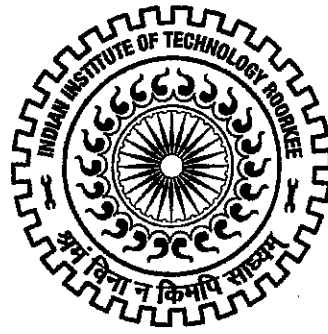


सुनलत कल नलतु वलठक कल कररुवृत्त
MINUTES OF THE 9TH MEETING OF THE SENATE

7TH MAY 2004



भारतीय प्रौद्योगिकी संस्थान रुडकी
रुडकी - २४७ ६६७ (भारत)
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE - 247 667 (INDIA)

MEETING SECTION
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE – 247 667

No. IITR/MS/9th Senate (05/2004)/ 345

Dated 26th May 2004

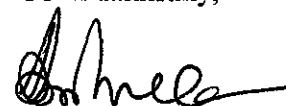
ALL MEMBERS OF THE SENATE
Indian Institute of Technology, Roorkee

Subject: Minutes of the 9th meeting of the Senate held on 7th May 2004 in the Senate Hall of the Institute.

Sir,

Enclosed herewith please find a copy of the Minutes of the 9th meeting of the Senate of this Institute held on 7th May 2004 at 11.00 A.M. in the Senate Hall for your perusal. Your comments, if any, on the minutes may please be sent within 15 days.

Yours faithfully,



(A.K.Srivastava)
Lt. Col. (Retd)
Registrar

Encl: as above

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE 247 667



INDEX

Item No.	Particulars	Page(s)
9.1.0	PROCEDURAL	
9.1.1	To confirm the minutes of the 8 th Meeting of the Senate held on 13 th February 2004.	1
9.1.2	To receive a presentation by Co-ordinator, IPR Cell on IPR Policy with respect to IITR	4
9.2.0	To receive a report on the actions taken to implement the decisions by the Senate at its 8 th meeting held on 13 th February 2004.	4
9.3.0	ITEMS FOR CONSIDERATION:	
9.3.1	To consider the recommendations of the PG Board of Biotechnology Department regarding the introduction of two Major Elective courses viz., BT-610 Genomics and Proteomics, BT-614 Bioinformatics in the course structure of M.Sc. (Biotechnology) Programme, and BT-615: General Biology and Microbiology as Minor Elective in its PH Programmes..	4
9.3.2	To review the methodology of applying the statistical system of awarding grades for evaluation of various courses.	4
9.3.3	To consider the methodology of evaluation of seminars & projects.	5
9.3.4	To review the minimum cut-off grade-point average for continuation of registration from one semester to the other in the case of M.Tech./M.Arch./M.U.R.P.	5
9.3.5	A review of the consequences of 'E' or 'F' grades in any one of the prescribed Pre Ph.D. courses.	5
9.3.6	To consider the structure and academic curricula and syllabi of the multi-disciplinary M.Tech. (Conservation of Rivers & Lakes) Sponsored Programme in the Alternate Hydro Energy Centre.	6

9.3.7	To Consider the Syllabi of (i) MI-472: Mechatronics (Departmental Elective) and (ii) IMI-02: Solar Energy Engineering (Institute Elective) of Mechanical & Industrial Engineering Department.	6
9.3.8	To consider the modifications in the component weightage in some lab courses of E&CE department.	7
9.3.9	To consider the draft guidelines for handling the cases of unfair means proposed by the committee under the convenership of Dr. S. P. Nigam, Prof. MIED.	7
9.3.10	To consider rationalisation of the course codes for various undergraduate courses	7
9.3.11	To consider interchange of two courses between autumn and spring semesters of B. Tech. (Elect.) Final Year and their original and revised teaching schemes.	7
9.3.12	To consider the institute fees to be charged from students who are required to register for few subjects only in a semester	7
	UNDER ANY OTHER ITEM	
9.3.13	The Senate decided that the courses offered in one Semester may also be offered in the other semester.	7
9.3.14	To consider the engagement of Ph.D. & M.Tech. Students for Practical and Tutorial classes.	8
	REPORTING ITEM	
9.4.1	To report that the Director has approved the Academic Calendar for the Autumn Semester of the Session 2004-2005.	8

Minutes of the 9th Meeting of the Senate held on 7th May 2004 at 11.00 A.M. in the Senate Hall of the Institute.

The following were present: -

1. Prof. Prem Vrat, Director Chairman
2. Prof. R. Shankar
3. Prof. G. S. Randhawa
4. Prof. B. M. J. Pereira
5. Prof. H. S. Dhaliwal
6. Prof. S. C. Gupta
7. Prof. Bikash Mohanty
8. Prof. Shri Chand
9. Prof. K.G.Ranga Raju
10. Prof. S. K. Kaushik
11. Prof. A. K. Mathur
12. Prof. M. K. Mittal
13. Prof. Arvind Kumar
14. Prof. H. C. Mehndiratta
15. Prof. G.Ramaswamy
16. Prof. N. M. Bhandari
17. Prof. N.Puri
18. Prof. S. S. Jain
19. Prof. Deepak Kashyap
20. Prof. (Mrs) Renu Bhargava
21. Prof. U. C. Kothyari
22. Prof. C.S.P.Ojha
23. Prof. D. K. Paul
24. Prof. H. R. Wason
25. Prof. H. Sinvhal
26. Prof. V. N. Singh
27. Prof. A. K. Awasthi
28. Prof. H. K. Verma
29. Prof. M.K.Vasantha
30. Prof. H. O. Gupta
31. Prof. S.P.Gupta
32. Prof. R. Mitra
33. Prof. D. K. Mehra
34. Prof. R.C.Joshi
35. Prof. (Ms) Kum Kum Garg
36. Prof. N.K.Agarwal
37. Prof. S. N. Sinha
38. Prof. Pashupati Jha
39. Prof. A. K. Ray
40. Prof. V.K.Nangia
41. Prof. J.P.Singh
42. Prof. K. M. Mital
43. Prof. U. S. Gupta
44. Prof. G. S. Srivastava

45. Prof. (Ms.) R.R.Bhargava
46. Prof. S.P.Sharma
47. Prof. (Ms.) Rama Bhargava
48. Prof. R. C. Mittal
49. Prof. V.K.Katiyar
50. Prof. J. S. Saini
51. Prof. H.S. Shan
52. Prof. S.C.Jain
53. Prof. S. C. Solanki
54. Prof. T. K. Bhattacharya
55. Prof. D. B. Goel
56. Prof. Satya Prakash
57. Prof. P.K.Ghosh
58. Prof. Ishwar Singh
59. Prof. Jagdish Rai
60. Prof. A.K.Jain
61. Prof. Rajesh Srivastava
62. Prof. Devadutta Das
63. Prof. U. C. Chaube
64. Prof. Nayan Sharma
65. Prof. M.P.Jain
66. Mr. Arun Kumar, Head, AHEC
67. Mr. Yogendra Singh, Librarian
68. Mr. S. N. Singh, S.S.O., AHEC (Warden, Rajendra Bhawan)
69. Dr. Praveen Kumar
70. Dr. B. K. Mishra
71. Dr. Anjan Sil
72. Lt.Col. (Retd.) A.K.Srivastava, Registrar - Secretary

The Chairman (Director) welcomed the members to the 9th Meeting of the Senate.

Before taking up the agenda items, the Senate thanked the under-mentioned outgoing member and recorded its appreciation for his valuable contribution in the meetings of the Senate.

- (i) Prof. S.C.Saxena, Department of Electrical Engineering

The Senate also welcomed the under- mentioned new members and hoped for their valuable contribution and active participation in its deliberations.

- (i) Prof. (Ms) Vijaya Agarwala, Department of Metallurgical & Material Engineering
- (ii) Prof. Satish Kumar, Department of Paper Technology
- (iii) Prof. V.K.Katiyar, Department of Mathematics
- (iv) Prof. Roshan Lal, Department of Mathematics

The Senate recorded the apologies received from the following members for not attending the meeting:

1. Prof. S.Basu, Department of Earthquake Engineering
2. Prof. Gopal Chauhan, WRDTC
3. Prof. R.P.Agarwal, Department of E & CE
4. Prof. P.K.Garg, Department of Civil Engineering
5. Prof. S.R.Bhatt, Delhi University, New Delhi
6. Prof. K.L.Chopra, New Delhi
7. Prof. N.J.Rao, Department of Paper Technology, Saharanpur

9.1.1 To confirm the minutes of the 8th Meeting of the Senate held on 13th February 2004.

The minutes of the 8th Meeting of the Senate held on 13th February 2004 were confirmed with the undermentioned observations:

Item No. 8.3.9: To consider the issue regarding the maximum number of Ph.D. students that a faculty may guide at any given point of time:

The word **8 jointly and 5 singly** be read as **8 jointly or 5 singly**.

Further, a faculty may supervise up to two Ph.D. students getting MHRD assistantship at a given point of time. However, the total number of MHRD Assistantship in the Department will be equal to the total number of the faculty members. Joint supervision of a Ph.D. scholar will be treated as 0.5 per faculty member. The total number of Ph.D. scholars being guide by a Faculty member at any given point of time will not exceed five singly or eight jointly or a combination of both, the aggregate not exceeding eight as per the table given below:

	<u>Singly</u>	<u>Jointly</u>
(a)	5	0
(b)	4	2
(c)	3	4
(d)	2	6
(e)	1	7
(f)	0	8

Item No. 8.3.13 To start a new M.Tech. (Disaster Mitigation and Re-engineering) Programme:

In case the other Departments are not inclined to participate in the new Disaster Mitigation M.Tech. Programme for man-made disasters, the M.Tech. Programme in Disaster Mitigation & Re-engineering pertaining to natural disasters be pursued. However, the programme cannot start in July 2004, due to paucity of time. It may therefore be planned for July 2005.

Item No. 8.3.17 To consider the recommendations of the Prof. S.Ray (Chairman Gate 2003) Committee on P.G. Admissions.

The scheme for admission to M.Tech./ M.Arch. / MURP is to be reviewed for next year with GATE weighted at 70%, and a Test and/or an interview being weighted at 30%. The process of admissions will be decentralised at the Departmental level, for which the Department Faculty Boards should discuss the procedure, modalities etc.

9.1.2 To receive a presentation by Co-ordinator, IPR Cell on the IPR Policy with respect to IITR.

This item was withdrawn.

9.2.0 To receive a report on the actions taken to implement the decisions taken by the Senate in its 8th Meeting held on 13th February 2004.

The Senate noted the actions taken on the decisions taken by the Senate in its 8th meeting held on 13th February 2004.

9.3.0 ITEMS FOR CONSIDERATION:

9.3.1 To consider the recommendations of the PG Board of the Biotechnology Department regarding the introduction of two Major Elective courses viz., BT-610: Genomics and Proteomics, BT-614: Bio-informatics in the course structure of the M.Sc. (Biotechnology) Programme, and BT-615: General Biology and Microbiology as Minor Elective in its PG Programmes.

After discussion, the Senate decided that the suggestions made by the Senators on the floor be incorporated in the course structure by the Dean, PGS&R and Head, Department of Biotechnology and then put up to Chairman, Senate for approval.

9.3.2 To review the methodology of applying the statistical system of awarding grades for evaluation of various courses.

The Senate resolved that as recommended by the Board PGS&R, the Absolute system of grading be adopted if the number of students in a course is 30 or less and the statistical system be adopted if the number is more than 30, in order to adopt a uniform method of evaluation across the departments.

Arising out of the discussion, it was decided that an exercise should be undertaken to review the statistical distribution of grades. In this exercise, the objective would be to do away with the A⁺, B⁺ and C⁺ grades and distribute the grades in such a manner that generally the number of grades (A+C) equals the number of grades (B+D).

9.3.3 To consider the methodology of evaluation of seminars & projects.

The Senate resolved that as recommended by the Board PGS&R, the Seminar & Projects be evaluated and graded on the Absolute System of marking as is done in case of dissertation. The minimum acceptable pass grade in the Seminar & Project will be C⁺. If a student is awarded a grade inferior to C⁺, revision (in case of C and D grades) or repetition (in case of E and F grades) be allowed by the Examination Board to improve upon the same, within the stipulated time frame prescribed by the regulations.

9.3.4 To review the minimum cut-off grade-point average for continuation of registration from one semester to the other in the case of M.Tech./M.Arch./M.U.R.P.

The Senate resolved that as recommended by the Board PGS&R, the existing SGPA/CGPA of 5.5 for continuation of studies in the next semester as one of its conditions be followed with the provision that if a student gets a SGPA of 5.0 or more but less than 5.5 in the first semester, he/she shall be allowed to register in the second semester, but shall be on probation. However, in the second semester, the SGPA should be at least 5.0 and the CGPA, 5.5.

9.3.5 A review of the consequences of 'E' or 'F' grades in any one of the prescribed Pre Ph.D. courses.

The Senate resolved that as recommended by the Board PGS&R, and as per the regulations, the Ph.D. students have to clear the prescribed pre Ph.D. courses, within the specified range of credits (as per entry level qualifications). Any additional courses which may be prescribed by the SRC, shall be taken as Audit courses. A course designed specially for a Ph.D. scholar or a group of Ph.D. scholars will have the digit 7 as the prefix, followed by two more digits to complete the numbering of this special course.

Further, all prescribed Pre-Ph.D. Courses including the Audit Courses, must be successfully completed before the comprehensive examination, which will be conducted as per the Ph.D. regulations. The clause pertaining to cancellation of registration for obtaining 'E' or 'F' grade in any pre- Ph.D. course will stand deleted from the Regulations. **Notwithstanding this, the registration will be cancelled if all the pre- Ph.D. courses are not completed within the stipulated time frame of three semesters/four semesters for full/part-time Ph.D. scholars respectively. The Comprehensive Examination within the stipulated time frame of 18 months / 24 months for full/part-time Ph.D. scholars respectively shall invariably be conducted by the concerned Department/Centre.**

Accordingly, the Ph.D. regulations be modified.

9.3.6 To consider the structure and academic curricula and syllabi of the multi-disciplinary M.Tech. (Conservation of Rivers & Lakes) Sponsored Programme in the Alternate Hydro Energy Centre.

After discussion, the Senate decided as under:

- (a) The M.Tech. (Conservation of Rivers & Lakes) course should commence in July 2004.
- (b) There should be a list of Major Electives.
- (c) The Selection procedure should be the same as followed by the Institute for sponsored candidates.
- (d) Pre-requisites, and subject areas should be clearly specified for each course.
- (e) The total number of lectures hours per semester should be 42 for a 04 credit course @ 03 lectures per week.

Arising out of the discussion, the Senate also resolved that the relative weighted assessment for CWS, MTE, PRS and ETE for all the courses across all the Departments/Centres should be as follows:

<u>With Lab work</u>	<u>Without Lab Work</u>
(a) CWS-15	CWS-20
(b) PRS-15	MTE-40
(c) MTE-30	ETE-40
(d) ETE-40	

The End Term Examination shall be of 02 hours duration.

For laboratory courses, the weighted distribution between PRS and PRE may be decided by the respective Departments/Centres

Dean (PGS&R) and Head (AHEC) to incorporate the above, as well as the suggestions made by the Senators and place the modified scheme of teaching before the Chairman, Senate for approval.

9.3.7 To Consider the Syllabi of (i) MI-472: Mechatronics (Departmental Elective) and (ii) IMI-02: Solar Energy Engineering (Institute Elective) of Mechanical & Industrial Engineering Department.

After discussion, the Senate resolved that as recommended by the Board, UGS, the Syllabi of (i) MI-472: Mechatronics (Departmental Elective) and (ii) IMI-02: Solar Energy Engineering (Institute Elective) of Mechanical & Industrial Engineering Department be approved with the proviso that relative weightage for CW, MTE and ETE should be as follows: (refer Appendix 'A')

- (a) CWS - 20
- (b) MTE - 40
- (c) ETE - 40

9.3.8 To consider the modifications in the component weightage in some lab courses of E&CE Department.

After discussion, the Senate resolved that as recommended by the Board, UGS, the modifications in the component weightage in some lab courses of E&CE Department be approved as per details given at **Appendix 'B'**.

Arising out of the discussion, the Senate further decided that the evaluation of lab work will be done on continuous basis throughout the semester for both UG&PG programmes.

9.3.9 To consider the draft guidelines for handling the cases of unfair means proposed by the committee under the convenership of Dr. S. P. Nigam, Prof. MIED.

The Senate resolved that as recommended by the Board, UGS, the guidelines for handling the cases of unfair means, proposed by the Committee under the convenorship of Prof. S.P.Nigam, Department of Mech. & Industrial Engineering, be approved as given at **Appendix 'C'**. This will apply to UG, PG & Ph.D. students of the Institute.

9.3.10 To consider rationalization of the course codes for various undergraduate courses

The Senate resolved that as recommended by the Board, UGS, the courses offered for both the Undergraduate and Post-graduate Programmes be given P.G. Code numbers.

9.3.11 To consider the interchange of two courses between the Autumn Semester and the Spring Semesters of B.Tech. (Elect.) Final year and their original and revised teaching schemes.

The Senate resolved that as considered and recommended by the Board UGS in the meeting held on 27th April 2004, the interchange of two courses between the Autumn Semester and Spring Semesters of B.Tech. (Elect.) Final year and their original and revised schemes of teaching be approved (**refer Appendix 'D'**)

9.3.12 To consider the institute fees to be charged from students who are required to register for a few subjects only in a semester.

This item was withdrawn.

UNDER ANY OTHER ITEM:

9.3.13 The Senate decided that the courses offered in one Semester may also be offered in the other semester if the DFB so decides, with the approval of the Dean UGS or Dean PGS&R, as applicable.

9.3.14 To consider the engagement of Ph.D. & M.Tech. Students for Practical and Tutorial classes.

The Senate decided that Ph.D. & M.Tech. Students may be engaged for practical and tutorial classes as well as to assist the faculty members in developing new courses.

REPORTING ITEM

9.4.1 To report that the Director has approved the Academic Calendar for the Autumn Semester of the Session 2004-2005.

NOTED with the under-mentioned amendments/additions: -

(a) Serial No. 12 be read as under:

12. Counselling / Registration for PG students against vacant seats, if any (except for the MBA programme).

(b) The Alumni Day on 05-07 November, 2004, be included

(c) The Foundation Day on 25th November 2004, be included

(d) A Buffer Day as per the situation, be included

The modified copy of the Academic Calendar is given at **Appendix -'E'**.

The meeting ended with a vote of thanks to the Chair.

DEPARTMENT OF MECHANICAL & INDUSTRIAENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE

1. Subject Code : MI-472 Course Title: Mechatronics
2. Contact Hours : L-3 ; T-1 ; P-0
3. Examination Duration (Hrs.) Theory Practical
4. Relative Weightage : CWS PRS MTE
- ETE
5. Credits : 6. Semester

	YES	
Autumn	Spring	Both
6. Pre-requisite: Nil
7. Subject Area: Mechanical & Ind. Engg.
8. Objective of Course: The course deals with basic principles of Mechatronics which brings together areas of technology involving sensors and measurement systems, drive and actuation systems, analysis of the behaviour of systems, control systems, and microprocessor systems.

9. Details of Course:

S.No.	Particulars	Contact Hours
1.	Introduction: What is Mechatronics?; Measurement Systems; Control Systems; Microprocessor based Controllers; Mechatronics Approach.	3
2.	Sensors and Transducers : Sensors & Transducers; Performance Terminology; Photoelectric Transducers, Flow Transducers, Optical Sensors & Transducers, Semiconductor Lasers, Selection of Sensors, Mechanical/Electrical switches, Inputting data by switches.	7
3.	Actuators and Mechanisms : Actuation Systems; Pneumatic and Hydraulic Systems; Process Control Valves; Rotary Actuators; Mechanical Actuation Systems; Electrical Actuation Systems;	6
4.	Signal Conditioning: Signal Conditioning; Filtering; Digital Signals; Multiplexers; Data Acquisition; Digital Signal Processing; Pulse Modulation; Data Presentation Systems.	4
5.	Microprocessors and Microcontrollers: Control; Microcomputer Structure; Microcontrollers; Applications; Programmable Logic Controllers.	5

6.	Modelling & System Response : Mathematical Models, Mechanical, Electrical, Hydraulic Systems; Dynamic Response of Systems; Transfer Function and Frequency Response; Closed Loop Controllers; MATLAB as development tool.	12
7.	Design and Mechatronics : Input/output Systems; Computer based modular Design; System Validation; Advanced Actuators; Remote Monitoring and Control; Designing; Possible Design Solutions; Case Studies.	5

Total 42

10. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	Bolton, W., 'Mechatronics' Longman	1999
2.	Mahalik, "Mechatronics, Principles, Concept and Applications," Tata McGraw Hill	2003
3	Bishop, Robert H., 'Mechatronic Handbook', CRC Press	2002
4.	Shetty, Dedas, Kolk and Richard, "Mecharomics System Design", PWS Pub Boston,	1997
5.	David G. Alciatore & Michael B. Histrand, "Introduction to Mechatronics", Tata MC Graw Hill.	2003

MI 472: Mechatronics

Introduction; Measurement and Control Systems; Mechatronics Approach; Sensors and Transducers; Actuators and Mechanisms; Signal Conditioning; Data Acquisition & Presentation, Microprocessors and Microcontrollers; Modelling and System Response; Design and Mechatronics.

**DEPARTMENT OF MECHANICAL & INDUSTRIAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE**

1. Subject Code : IMI 02 Course Title: Solar Energy Engineering
2. Contact Hours : L-3 ; T-1 ; P-0
3. Examination Duration (Hrs.) Theory Practical
4. Relative Weightage : CWS PRS MTE
ETE
5. Credits: 6. Semester

	YES	
Autumn	Spring	Both
6. Pre-requisite: Nil
7. Subject Area: Mechanical & Industrial Engg. (Energy)
8. Objective of Course: This is an introductory course regarding the utilization of solar energy, the most important alternative and renewable source of energy.
9. Details of Course:

S.No.	Particulars	Contact Hours
1.	Introduction: Historical background, Energy demands and supply; Energy Crisis, Conventional & non-Conventional energy resources.	5
2.	Solar radiations: The sun; beam and diffuse radiations; earth sun angles; angle of incidence of beam radiation; attenuation of solar radiation. Solar radiation data; measurements and estimation of solar radiations.	6
3.	Fundamentals of Heat Transfer: The electromagnetic radiations, black and grey body concepts; Optical properties of materials, selective surfaces. Sky radiation, radiative and convective heat transfer coefficients, wind convection.	4
4.	Solar Collectors: Principles and general description of flat plate and focussing collectors, performance & design considerations.	10
5.	Energy Storage: Need, Types of energy storage systems, characteristics and sensible heat & latent heat storage media, capacity of storage systems, thermal analysis, solar ponds.	5

6.	Applications: (a) <i>Solar Thermal</i> : Water and air heating, solar drying, solar refrigeration and air conditioning, water desalination; water pumping; passive space heating and cooling systems. (b) <i>Solar Power</i> : Photovoltaic conversion, solar cell efficiency, types, and arrangements. Solar Thermal Power generation.	8
7.	Economics of Solar Energy: Solar savings, life cycle cost analysis, Economic analysis of solar systems.	4

Table

42

10. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	Duffie J.A. and Beckman W.A, "Solar Engineering of Thermal Processes", 2 nd Edition John- Wiley& Sons.	1991
2	Sukhatme, S.P., "Solar Energy – Principles of Thermal Collection and Storage", 2 nd Edition Tata- McGraw- Hill	1984
3.	Dickinson, W.C. & Chermisinoff, P.N, Edition " Solar Energy Technology Handbook", Part A & B, Marcel Dekker Inc,	1980
4.	Goswan ,Y, Kreith, F and Kreider, J.F., "Principles of Solar Engineering ", 2 nd Edition, Taylor and Francis, US	2000
5.	Jansen, T.J, "Solar Engineering Technology, "Prentice – Hall, Jersey.	1985

IMI – 02 Solar Energy Engineering

Conventional and non-conventional sources of energy; Solar Radiations, Radiation Characteristics of bodies; Sky radiation, Wind convection, Radiation and convection heat transfer coefficients; Flat Plate Collectors, efficiency and performance; Concentration Collectors; Solar Energy Storage Systems; Solar Thermal Applications: solar water and air heating, solar refrigeration and air-conditioning, passive systems, Photovoltaic conversion, Solar Thermal Power generation, Economic analysis of solar systems.

Appendix – B
Item No. 9.3.8

Proposed Evaluation Schemes for some of the courses with laboratory content /Lab courses

Sl. No.	Subject Code	Course title	Credit	Scheme	Contacts Hours/Week			Exam. Duration(Hrs.)		Relative Weightage %				
					L	T	P	Theory	Practical	CW	PRS	MTE	ETE	PRE
1.	EC-221	Data Structures	5	Existing	3	0	3	3	3	-	20	20	40	20
				Proposed	3	0	3	3	-	10	30	20	40	-
2.	EC-271	Object Oriented Programming Lab.*	2	Existing	0	0	3	-	3	-	50	-	-	50
				Proposed	0	0	3	-	-	-	50	50	-	-
3.	EC-204	Digital Electronics	5	Existing	3	1	2	3	2	10	15	20	40	15
				Proposed	3	1	2	3	-	10	30	20	40	-
4.	EC-303	Microprocessor Interfacing	5	Existing	3	1	3	3	3	10	15	20	40	15
				Proposed	3	1	3	3	-	10	30	20	40	-
5.	EC-371	Assembly Language Programming Lab. *	2	Existing	0	0	3	-	3	-	50	-	-	50
				Proposed	0	0	3	-	-	-	50	50	-	-
6.	EC-372	Operating Systems Lab.	2	Existing	0	0	3	-	3	-	50	-	-	50
				Proposed	0	0	3	-	-	-	50	50	-	-
7.	EC-471	Computer Networks Lab.	2	Existing	0	0	3	-	3	-	50	-	-	50
				Proposed	0	0	3	-	-	-	50	50	-	-

* 1. MTE for this Lab. Means evaluation on the basis of a test. The test may be in the form of a quiz, viva voce or practical demonstration of a part or full experiment. The modalities and date of MTE is discretion of the concerned teacher.

2. PRS will comprise evaluation on the basis of general performance and progress in the laboratory class.

Revised Guidelines for handling the cases of use of unfair means during examinations.

57.10 Instructions for penalty for use of unfair means

57.10.1 The main instructions for the conduct of a student in the Examination hall shall be printed on the cover page of the answer-book. Any contravention of these instructions and the use of any unfair means will render the student liable for punishment.

57.10.2 As soon as a student is suspected by the invigilator or any other authorized person of having resorted to unfair means his/her answer-book shall be seized. The paper etc. duly signed by the invigilator found in possession of the student shall be attached with his answer-book in his/her presence. The student shall then be asked to complete part II of the prescribed form and sign it. This form shall then be endorsed by the Invigilator.

57.10.3 After completing all the above formalities, a fresh answer-book shall be given to the student for completing the examination.

57.10.4 After a particular examination is over, these answer-book(duly marked I, II) shall be sent or delivered separately to the Registrar/ Assistant Registrar (Academic) together with the report form duly completed in all respects.

57.10.5 A Committee appointed by the Director shall enquire into cases of attempt at unfair means in the examination. It shall submit its recommendations after laying down clearly the nature of the offence listed in Regulation No. 57.10.7 to the Director for consideration and necessary orders.

57.10.6 A student whose guilt is established shall be dealt with under the provisions of the disciplinary regulations.

57.10.7 The following action may be taken for different categories of offences under this regulation:

(A) Nature of Offence

- a) A student found talking to another student during the examination hours.
- b) If during the examination hours i.e. after receipt of the question-paper and before handing over the Answer-book a student is found to be talking to a person outside the examination-hall while going to the urinal etc.
- c) Changing seat in the examination-hall without permission.

Action to be taken : The first answer-book to be withdrawn and cancelled and the second answer-book to be provided and evaluated.

(B) Nature of Offence

- a) Attempt to influence the examiner by an appeal in the answer-book.
- b) Writing either the questions set in the paper or solutions thereof on paper/electronic device etc. while during the examination.
- c) Possession of cell phone or any other item of such type of communication in examination hall.

Action to be taken : The examination of the concerned paper to be cancelled.

(C) Nature of Offence:

To be found in possession of any written or cyclostyled notes or any printed material or notes written on any part of the body/clothing or instruments such as set square, electronic device etc. or having notes written on chair, table, desk or drawing board during the examination.

Action to be taken : All the examinations for that semester to be cancelled.

(D) Nature of Offence

If during the examination hours i.e. after receipt of the question paper and before handing -over the answer-book a student is found :

- a) To be copying or to have copied from any paper, book or note written on any part of his/her clothing or body or table or desk or instruments like setsquare, etc.
- b) To be consulting notes or books while being outside the examination hall during examination hours.
- c) Passing on a copy of question(s) set in paper or a solution thereof to any one.
- d) To have received help from or given help to another candidate through some written material/electronic device pertaining to the questions set in the paper concerned.
- e) To have allowed any other candidate to copy from his /her answer-book.
- f) Communicating or attempting to communicate directly or through someone else with the examiner or anybody connected with the Institute examination for influencing them in the award of marks.
- g) To be guilty of swallowing or destroying any note or paper found on him/her.

Action to be taken : All the examinations for that semester to be cancelled and the student to be debarred from appearing at all Institute examinations during the next semester.

(E) Nature of Offence

- a) Found in possession of a solution of a question set in the paper through the help of any student, supervisory or ministerial staff or some other agency.
- b) Found guilty of having made previous arrangement to obtain help in connection with the question paper in cases not covered by the above provision.

Action to be taken : All examination to be cancelled for that semester and the student to be debarred from appearing at any Institute examination for the next two semesters.

(F) Nature of Offence

Found guilty of:

- a) Smuggling in an answer-book, taking out or arranging to send out an answer-book.
- b) Writing deliberately another students' roll no. in his/her answer-book or found in possession of an answer-book not his/her own or impersonating another candidates in any examinations.
- c) Guilty of serious misconduct in the examination hall or non-compliance with the instructions of the superintendent or any of the invigilators in the examination hall.

Action to be taken : All examinations of that semester to be cancelled and to be further debarred from appearing in any Institute Examination for a period of three to four semesters or expulsion from the Institute depending on the gravity of the offence.

(G) Nature of Offence

- a) Any person who is not a candidate for any examination found committing or abetting in committal of any of the offences mentioned above.

Action to be taken : To be dealt with by the Director in an appropriate manner.

Cases not covered by these regulations.

Action to be taken : To be decided by the Director.

- Note:**
- a) In these regulations the year means the academic year.
 - b) A candidate found using unfair means leading to the cancellation of one paper of the whole examination in the First Year shall not be allowed to rejoin the Institute.
 - c) In case of extenuating circumstances, the above punishment may be reduced by the Director depending upon the merits of the case.

INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE

FORM FOR REPORTING CASES OF USE OF OR ATTEMPT TO USE UNFAIR MEANS AT THE INSTITUTE EXAMINATIONS

Note : One sheet should be used for one candidate only. If printed forms run short, the form should be photocopied and used :-

- (1) Name of Examination.....
- (2) Candidate's Roll No.....
- (3) Name of Candidate
(with full postal address)
- (4) Room No.
- (5) Subject in which the candidate is reported to have used or
attended to use unfair means
- (6) Day..... Date Time

I. Particulars of books, papers etc. found in possession of the candidate and submitted alongwith the scripts and this report (All these materials should be signed by the Invigilator of examination and the candidate).

- (1) Name of book (if any) (a)
(b)
(c)
- (2) Number of leaves of books
- (3) No. of (a) manuscript slips (a).....
(b) sheets (b)
- (4) Any other articles such as (a)
electronic device etc. (b)
(c)

II. Statement of the candidate to be obtained at once in his/her own handwriting.

- (1) Were the above articles recovered
From your possession ?
 - (2) Why did you keep them with you
Inspire of clear instructions ?
.....
 - (3) Did you make any use of them ?.....
 - (4) Have you any thing else to state ?
- Certified that this statement was made in my presence.
Certified that the candidate declined to give any
statement.

(Certificate not applicable should be crossed by the Invigilator)

(Signature of Invigilator)

Date

(Signature of Candidate)

Date.....

Time

N. B. Report of invigilator it (should be definite and unambiguous).

DEPARTMENT OF ELECTRICAL ENGINEERING

CURRICULAR STRUCTURE

B.TECH. (ELECTRICAL ENGINEERING) 4TH YEAR

Teaching Scheme					Contact Hours/ Week			Exam. Duration (Hrs.)		Relative Weightage (%)				
S. No.	Subject Code	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
AUTUMN SEMESTER														
1	EE-401	Electrical Drives	DC	5	3	1	2	3	-	10	15	25	50	-
2	EE-403	Control Systems	DC	5	3	1	2	3	3	10	15	20	40	15
3	EE-405	Protection & Switchgear	DC	5	3	1	2	3	3	10	15	20	40	15
4		Departmental Elective –II	DE	4	3	1	0	3	-	25	-	25	50	-
5		Institute Elective –III	IE	4	3	1	0	3	-	25	-	25	50	-
6	EE-407	Practical Training Viva	DC	2	-	2	-	-	-	100	-	-	-	-
7		Project	DC	-	-	-	3	-	-	-	-	-	-	-
SPRING SEMESTER														
1		Departmental Elective III	DE	4	3	1	0	3	-	25	-	25	50	-
2		Departmental Elective –IV	DE	4	3	1	0	3	-	25	-	25	50	-
3		Departmental Elective –V	DE	4	3	1	0	3	-	25	-	25	50	-
4		Project	DC	12	-	-	16	-	-	-	-	50	50	-
Discipline			ECA	2	Total Credits = 25+ 24 + 2 = 51									

- Project will continue in fourth year (VIIth semester) but will be tabulated in the final result (VIIIth semester).

Note :

1. The B.Tech. Projects will be assigned in the beginning of the fourth year (VIIth semester), latest by the month of August.
2. The project evaluation will involve at least two mid-term evaluation, one in each semester.
3. Viva-voce examination to be held normally 10 days after the completion of the final year (VIIIth semester) theory examination.

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ACADEMIC CALENDAR FOR THE AUTUMN SEMESTER OF THE SESSION 2004 - 2005
(FROM JUNE 29, 2004 TO JANUARY 04, 2005)

1.	JEE COUNSELLING FOR B.TECH./B.ARCH PROGRAMME	JUNE 29-JULY 02, 2004	TUE.-FRI.
2.	LAST DATE FOR SUBMISSION OF M.TECH./M.ARCH./M.U.R.P. DISSERTATION	JUNE 30, 2004	WEDNESDAY
3.	JEE Arch./DESIGN APPTITUDE TEST	JULY 02, 2004	FRIDAY
4.	EXAMINATIONS FOR SUMMER TERM CLASSES	JULY 09-10, 2004	FRI.-SAT.
5.	DECLARATION OF RESULTS FOR SUMMER TERM EXAM	JULY 12, 2004	MONDAY
6.	INSTITUTE REOPENS FOR THE SESSION 2004-2005.	JULY 19, 2004	MONDAY
7.	REGISTRATION FOR ALL UG/PG/Ph.D. STUDENTS IN RESPECTIVE DEPTTS. (OTHER THAN NEW ENTRANTS).	JULY 26, 2004 (10 A.M. onwards)	MONDAY
8.	REGISTRATION FOR PG STUDENTS-ENGG. (NEW ENTRANTS)	JULY 26, 2004	MONDAY
9.	REGISTRATION FOR PG - SCIENCES/MBA (NEW ENTRANTS) AND Ph.D. STUDENTS	JULY 27, 2004	TUESDAY
10.	CLASSES BEGIN FOR ALL UG/PG COURSES (OTHER THAN NEW ENTRANTS) AND Ph.D. PROGRAMME	JULY 27, 2004	TUESDAY
11.	REGISTRATION FOR ALL UG COURSES (NEW ENTRANTS)	JULY 28, 2004	WEDNESDAY
12.	COUNSELLING/ REGISTRATION FOR PG STUDENTS AGAINST VACANT SEATS, IF ANY (EXCEPT FOR MBA PROGRAMME)	JULY 29, 2004	THURSDAY
13.	ORIENTATION FOR ALL NEW ENTRANTS	JULY 29, 2004 (8.00 AM-10.00 AM)	THURSDAY
14.	FINAL EVALUATION OF M.TECH. DISSERTATION OF IV SEMESTER	JULY 30, 2004	FRIDAY
15.	CLASSES BEGIN FOR ALL NEW ENTRANTS (UG/PG/Ph.D.)	JULY 30, 2004	FRIDAY
16.	ENROLMENT OF NCC CADETS AT NCC PARADE GROUND OF 3UA CTR NCC	AUGUST 2-3, 2004 (at 8.00 AM)	MON. & TUE.
17.	CLOSE OF ADMISSION (i.e. ONE WEEK AFTER START OF CLASSES) FOR PG COURSES	AUGUST 03, 2004	TUESDAY
18.	DISPLAY/ASSIGNMENT OF UG PROJECT PROBLEMS	AUGUST 4, 2004	WEDNESDAY
19.	SUBJECT REGISTRATION OF UG/PG/Ph.D. STUDENTS (NEW ENTRANTS).	AUGUST 09, 2004	MONDAY
20.	A.R. (UGS) TO INTIMATE TO THE DEPTTS THE NAMES OF INSTITUTE ELECTIVES TO BE RUN BY VARIOUS DEPTTS. IN SPRING SEMESTER -2004-2005 SESSION	AUGUST 20, 2004	FRIDAY
21.	DOSW TO SEND LIST OF STUDENTS REGISTERED FOR VARIOUS PROFICIENCIES TO CHIEF ADVISORS/OC NCC/ AR (UGS)	AUGUST 27, 2004	FRIDAY
22.	AR (UGS) & AR (PGS&R) TO SEND TO DEPARTMENTS/ CENTRES THE FINAL LISTS OF REGISTERED STUDENTS.	SEPTEMBER 01, 2004	WEDNESDAY
23.	TEACHERS' DAY	SEPTEMBER 05, 2004	SUNDAY
24.	MID TERM EXAM.-I FOR ALL UG/PG STUDENTS INCLUDING PREPARATORY COURSE FOR UG COURSES	SEPT. 08-09, 2004	WED.-THU.
25.	ENGINEERS' DAY	SEPTEMBER 15, 2004	WEDNESDAY
26.	DEPARTMENTS TO SEND TO AR (UGS) LISTS OF INSTITUTE ELECTIVES TO BE RUN IN SPRING SEMESTER 2004-05	SEPTEMBER 15, 2004	WEDNESDAY
27.	LAST DATE FOR WITHDRAWL FROM A COURSE(S).	SEPTEMBER 15, 2004	WEDNESDAY
28.	LAST DATE FOR DISPLAY OF ATTENDANCE RECORD OF STUDENTS FALLING SHORT OF MINIMUM ATTENDANCE REQUIREMENT DURING THE MIDDLE OF SEMESTER (BY DEPARTMENTS/CENTRES)	SEPTEMBER 20, 2004	MONDAY
29.	AR (UGS) TO INVITE APPLICATIONS FROM UG STUDENTS FOR INSTITUTE ELECTIVES	SEPTEMBER 27, 2004	MONDAY
30.	LAST DATE OF SUBMISSION OF DOCUMENTS BY ALL NEW ENTRANTS	SEPTEMBER 30, 2004	THURSDAY
31.	INTIMATION TO PARENTS/GUARDIANS OF STUDENTS HAVING "SHORT ATTENDANCE" BY A.R. (UGS) & A.R.(PGS&R)	OCTOBER 04, 2004	MONDAY
32.	AR (UGS) TO SEND TO HODs LIST OF INSTITUTE ELECTIVES OPTED BY STUDENTS FOR SPRING SEMESTER 2004-05	OCTOBER 15, 2004	FRIDAY

33.	SEMESTER BREAK (FOR STUDENTS ONLY) **	OCT. 18-22, 2004	MON.-FRI.
34.	MID TERM EXAM. II FOR ALL UG/PG STUDENTS INCLUDING PREPARATORY COURSE FOR UG COURSES	OCT. 25 & 26, 2004	MON. & TUE.
35.	FINALIZATION OF TIME TABLES BY ALL DEPARTMENTS/CENTRES	NOV. 04-05, 2004	THU.-FRI.
36.	PROVISIONAL SUBJECT REGISTRATION FOR SPRING SEMESTER FOR THE SESSION 2004-2005	NOV. 04-05, 2004	THU.-FRI.
37.	ALUMNI DAY	NOV. 05-07, 2004	FRI. - SUN.
38.	AR (UGS) & AR (PGS&R) TO NOTIFY SEATING PLAN FOR AUTUMN SEMESTER EXAM FOR INSTITUTE COMMON COURSES	NOVEMBER 08, 2004	MONDAY
39.	THOMSO	TO BE DECIDED	
40.	AR (UGS) & AR (PGS&R) TO NOTIFY DATES OF EXAM. FOR COMMON SUBJECTS	NOVEMBER 11, 2004	THURSDAY
41.	FILLING OF RESPONSE FORMS BY UG/PG STUDENTS IN THE RESPECTIVE DEPARTMENTS/CENTRES	NOVEMBER 22, 2004 3.00 PM - 5.30 PM	MONDAY
42.	ANNUAL CONVOCATION 2004	TO BE DECIDED	
43.	EVALUATION OF M.TECH. DISSERTATION OF 3 RD SEMESTER (SENDING SATISFACTORY/UNSATISFACTORY REPORT) BY DEPARTMENTS/ CENTRES.	NOV. 23-24, 2004	TUE.-WED.
44.	LAST DATE OF TEACHING FOR ALL UG/PG CLASSES.	NOVEMBER 23, 2004	TUESDAY
45.	DISPLAY OF COURSE WORK EVALUATION	NOVEMBER 23, 2004	TUESDAY
46.	NOTICES TO STUDENTS' NOTICE BOARDS REGARDING SHORTAGE OF ATTENDANCE (BY DEPARTMENTS/ CENTRES)	NOVEMBER 23, 2004	TUESDAY
47.	ACTION BY AR (UGS) & AR (PGS&R) TO ASCERTAIN THAT THE DETAINED STUDENTS DO NOT APPEAR IN EXAM.	NOVEMBER 24, 2004	WEDNESDAY
48.	FOUNDATION DAY	NOVEMBER 25, 2004	THURSDAY
49.	*END TERM EXAM. FOR ALL UG/PG/Ph.D. CLASSES INCLUDING PREPARATORY COURSE(S) FOR UG COURSES	NOV. 25-DEC.03, 2004	THU.-FRI.
50.	NCC CAMP	DEC. 05-16, 2004	SUN.-THU.
51.	MODERATION OF GRADES AND GRADE POINT AVERAGES BY THE GRADES MODERATION COMMITTEE	DEC. 09-10, 2004	THU.-FRI.
52.	DISPLAY OF GRADES FOR ALL EXAMS (BY DEPARTMENTS/ CENTRES)	DECEMBER 10, 2004	FRIDAY
53.	WINTER VACATIONS **	DEC. 16-31, 2004	THU.-FRI.
54.	LAST DATE FOR SENDING OF GRADES TO AR (UGS) & AR (PGS&R) FOR ALL COURSES	DECEMBER 16, 2004	THURSDAY
55.	LAST DATE FOR DECLARATION OF AUTUMN SEMESTER RESULTS	DECEMBER 20, 2004	MONDAY
56.	SPRING SEMESTER 2004-2005 BEGINS	JANUARY 03, 2005	MONDAY
57.	REGISTRATION FOR ALL COURSES	JANUARY 03, 2005	MONDAY
58.	CLASSES BEGIN FOR ALL COURSES	JANUARY 04, 2005	TUESDAY
59.	BUFFER DAY	As per Situation	

* The departments will organize the Practical Examinations during the last practical engagement of a particular batch/class before November 23, 2004

** Vacations for teaching staff

Note: - Heads of Department will plan the functions / Seminar on Saturdays and Sundays so that the Institute is able to maintain the Minimum Teaching days required in a semester. The examinations may also be held on Saturdays/Sundays to maintain the schedule of activities as per calendar.

Vacation be utilized for field training/camps as far as possible.

List of Holidays -2004.

aug 15(s) independence day, sept 07(tu) janmashtami, oct 02(sat) mahatma gandhi 's birthday, oct 21(th) dussehra (maha asthami), oct. 22 (f) dussehra (vijaya dashmi), nov. 12 (f) deepawali, nov. 15 (m) idul fitar***. nov 26(f) guru nanak's birthday, dec 25 (sat) christmas day

*** In the event of any change in the date of above holiday announced by the Govt. of India through the media, (TV/AIR/Newspaper- etc.) on account of the appearance of the Moon, the Institute shall automatically observe the subject holiday accordingly and no notice in this regard shall be issued.

Teaching days for Autumn Semester 2004-2005

(a) Mondays 14 days, (b) Tuesdays 15 days, (c) Wednesdays 15 days, (d) Thursdays 15 days (e) Fridays 15 days = 74 days