सीनेट की सप्तम् बैठक का कार्यवृत्त

MINUTES OF THE 7th MEETING OF THE SENATE

17th September 2003

भारतीय प्रौद्योगिकी संस्थान रूड़की

रूड़की - 247 667 (भारत)

INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE
ROORKEE-247 667 (INDIA)

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE – 247 667

No. IITR/MS/7th Senate (9/2003)/ 225 Dated 1st October 2003

ALL MEMBERS OF THE SENATE
Indian Institute of Technology, Roorkee

Sub.: Minutes of the 7th meeting of the Senate held on 17th September 2003 in the Senate Hall.

Dear Sir,

Enclosed herewith please find a copy of the Minutes of the 7th meeting of the Senate of this Institute held on 17th September 2003 at 11.00 A.M. in the Seatae 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

Minutes of the Seventh Meeting of the Senate held on 17th September 2003 at 11.00 A.M. in the Senate Hall.

The following were present:

1. Prof. Prem Vrat, Director — Chairman
2. Prof. M.L.Kapoor, Dy. Director
3. Prof. Najamuddin
4. Prof. R. Sankar
5. Prof. S.Y.Kulkarni
6. Prof. S. D. Bhattacharya
7. Prof. Bikas Mohanty
8. Prof. A. K. Jain, Chemistry Deptt.
9. Prof. G. Bhattacharjee
10. Prof. R. N. Goyal
11. Prof. A. N. Garg
12. Prof. V. K. Gupta, Chemistry Deptt.
13. Prof. Anil Kumar
14. Prof. (Ms) Mala Nath
15. Prof. K.G.Ranga Raju
16. Prof. P.C.Jain
17. Prof. Krishan Kumar
18. Prof. H.C. Mehndiratta
19. Prof. Arvind Kumar
20. Prof. N.M.Bhandari
21. Prof. P.K.Jain
22. Prof. V.K.Gupta, Civil Engg. Deptt.
23. Prof. R. M. Vasan
24. Prof. S.S.Jain
25. Prof. (Ms.) Indu Mehrotra
26. Prof. Renu Bhargava
27. Prof. S.K.Thakkar
28. Prof. S.Basu
29. Prof. D.K.Paul
30. Prof. V.H.Joshi
31. Prof. Ashwani Kumar
32. Prof. H.R.Wason
33. Prof. S.K.Upadhyay
34. Prof. H.Sinvhal
35. Prof. A.K.Awasthi
36. Prof. H. K. Verma
37. Prof. R.N.Mishra
38. Prof. H. O. Gupta
39. Prof. R. P. Agarwal
40. Prof. R.C.Joshi
41. Prof. A.K.Sarje

42. Prof. (Ms) Kum Kum Garg
43. Prof. N.K.Agarwal
44. Prof. S. N. Sinha
45. Prof. Padam Kumar
46. Prof. Ranvir Singh
47. Prof. Dinesh Chandra Singhal
48. Prof. N.K.Goel
49. Prof. Sabiruddin
50. Prof. Pashupati Jha
51. Prof. (Ms) Asha Kapoor
52. Prof. (Ms) Renu Rastogi
53. Prof. M. C. Bansal
54. Prof. A.K.Singh
55. Prof. V.K.Nangia
56. Prof. H. G. Sharma
57. Prof. G. S. Srivastava
58. Prof. (Mrs.) R.R.Bhargava
59. Prof. T.R.Gulati
60. Prof. (Mrs.) Rama Bhargava
61. Prof. R. C. Mittal
62. Prof. J. S. Saini
63. Prof. S. H.Shan
64. Prof. S.C.Jain
65. Prof. S.C.Solanki
66. Prof. T.K.Bhattacharya
67. Prof. D.B.Goel
68. Prof. R.D.Agarwal
69. Prof. S.Ray
70. Prof. P.K.Ghosh
71. Prof. Ishwar Singh
72. Prof. Rajesh Srivastava
73. Prof. G. S. Singh
74. Prof. Vir Singh
75. Prof. Gopal Chauhan
76. Prof. Devadutta Das
77. Prof. U.C.Chaube
78. Prof. S.K.Tripathi
79. Prof. G. C. Mishra
80. Prof. Ram Pal Singh
81. Prof. M. P. Jain
82. Prof. K.L.Chopra, New Delhi
83. Prof. S. R. Bhatt, Delhi University, Delhi
84. Mr. Arun Kumar, Head, AHEC
85. Dr. R.P.Singh, Head, Biotechnology
86. Dr. A.K.Singh, Chief Warden, Ravindra Bhawan
87. Dr. M.J.Nigam

88. Dr. (Ms) Rashmi Gaur
89. Lt.Col. (Retd.) A.K.Srivastava, Registrar - Secretary

The Chairman (Director) welcomed the members to the Seventh Meeting of the Senate. He hoped that the Senators liked the new look of the Senate Hall and further stated that this would provide a much better atmosphere for work and that the Construction Division deserved his complements for having done a fine job. He extended a warm welcome to the external members Prof. K.L.Chopra and Prof. S.R.Bhatt, both from Delhi and expressed his gratitude for their continued guidance and contribution in the proceedings of the meetings.

Before taking up the agenda items, the Senate thanked Prof. K.G.Ranga Raju, Ex. Dy. Director and recorded its appreciation for his valuable contributions in the meeting of the Senate as Dy. Director.

The Senate also welcomed Prof. M.L.Kapoor, Dy. Director and hoped for his valuable contribution and active participation in its functioning as Dy. Director.

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

1. Prof. S.K.Kaushik, Department of Civil Engineering
2. Prof. A.K.Pant, Department of Electrical Engineering
3. Prof. A.K.Ray, Department of Paper Technology
4. Prof. N.J.Rao, Department of Paper Technology
5. Prof. J.S.Upadhyaya, Department of Paper Technology

7.1.0 To confirm the minutes of the Sixth Meeting of the Senate held on 30th April 2003 and urgent meeting held on 1.7.2003, respectively.

The minutes of the Sixth Meeting of the Senate held on 30th April 2003 and urgent meeting held on 1.7.2003, were confirmed.

7.2.0 To receive a report on the actions taken to implement the decisions taken by the Senate in its Sixth Meeting held on 30th April 2003 and urgent meeting dated 1.7.2003, respectively.

Noted with the following observations:

Item No. 2.3.38 dated 13.3.2002	**Revised formula for conversion of CGPA into percentage of marks:** The Director apprised the Senate that due to non availability of information from IIT Delhi, the matrix for conversion of percentage of marks in the range of 80% & 90% into grades has not been formulated. After discussion, the Senate **RESOLVED** that a committee

	comprising of the following be constituted to devise a matrix which would assist the Institute in converting the marks into grades on the 10 point, 9 point, 6 point and 4 point grading methods. (a) Dean, PGS&R (b) Dean, UGS (c) Prof. S. Ray, Department of Metallurgical & Materials Engg. The report of the committee be placed before the next meeting of the Senate.
Item No. 5.3.6 dated 17.12.2002	**MoU between CBRI and Department of Civil Engineering, IIT Roorkee:** Once the MoU is signed, the same be reported to the Senate.

ITEMS FOR CONSIDERATION:

7.3.1 Considered the Award of Degrees/ Diplomas to the students who have qualified for the award of degrees/ diplomas in various disciplines/ courses.

RESOLVED that the award of degrees/ diplomas to the students who have qualified for the award of degrees/ diplomas in various disciplines/ courses be approved as under:

Sl. No.	Name of the Degree /Diploma	Number of Degrees/Diploma
1.	B.Tech. / B.Arch.	374
2.	M.Tech. /M.Arch. / MURP/MCA/MBA/M.Phil. M.Tech. (Applied Geology/Applied Geophysics)/ M.Tech. (SSEM)/P.G. Diploma	682*
3.	Ph.D.	32
	Total	1088

*The case of a student, Mr. Pankaj Kumar of M.Tech. (IT), is under enquiry and the award of degree to him has been withheld.

FURTHER RESOLVED that the Chairman of the Senate be authorized to approve award of degrees/ diplomas to such candidates, whose results will be declared after the meeting of the Senate & before the date of Convocation.

7.3.2 Considered allowing final year students to opt for additional course(s) from the approved course if they fall short of specified CGPA limit meant for award of degree, with the conditions as laid down in the regulations for P.G. Programme.

After discussion, the Senate **RESOLVED** that PG students who do not obtain the required CGPA for the award of a degree by the Institute, may be allowed to register for additional courses in post final semester(s) so that they may acquire the required CGPA for the award of a degree. In this process, such students be allowed to opt for the relevant courses on the recommendation of DRC/CRC and approval of Dean (PGS&R). However, the CGPA ceiling shall be the minimum CGPA specified for the respective programmes for the award of a degree. Further, such students will be required to complete their PG programmes within the maximum period stipulated in the regulations and shall be governed by Ordinances & Regulations.

Arising out of discussions, the Senate further desired that the question of improvement of grades/ CGPA by students in PG and UG programmes may be considered in the PG and UG Boards.

7.3.3 Considered the recommendation of the Departmental Faculty Board in WRDTC to reduce the experience requirement for sponsored candidates seeking admission for various academic programme at the centre to two years from the existing minimum three years:

The Senate considered the recommendations of the Departmental Faculty Board of WRDTC and P.G. Board in the matter and;

RESOLVED that the experience requirement for the sponsored candidates seeking admission to various P.G. programmes of WRDTC be approved as two years instead of three years. The other eligibility conditions shall remain unchanged.

7.3.4 Considered the recommendations of Departmental Faculty Board of the Department of Management Studies to offer Non Credit course number BM 501: Preparatory Mathematics from the session 2003-2004only to those students who have not studied Mathematics or an equivalent course at the undergraduate level.

After deliberation, the Senate **RESOLVED** that BM 501: Preparatory Mathematics shall be taken by all those students who have not studied Mathematics or an equivalent course at the undergraduate level.

Arising out of discussions, the Senate desired that the desirability of having a compulsory course in Mathematics in all PG programmes be reexamined by the Board, PGS&R.

7.3.5 Considered the recommendation of the WRDTC for filling some seats in PG/M.Tech. programmes at the Centre through non- sponsored GATE qualified candidates.

At the outset, the Head, WRDTC and Dean, PGS&R briefed the Senate about the salient features of the programmes. After discussion, the Senate approved that 10 seats may be filled by non-sponsored GATE qualified candidates, with internal flexibility to distribute these seats among the four PG programmes being offered by the WRDTC. The Senate further resolved that an advisory committee be constituted by Chairman, Senate to examine the following:

(a) Restructuring of the P.G. programmes including a comprehensive review of the direction in which the WRDTC is proceeding vis-à-vis the requirements of the country and the industry.

(b) To make certain programmes inter-disciplinary or combine with the existing programmes in Departments of Electrical Engineering/ Mechanical & Industrial Engg./ AHEC/Hydrology, as applicable.

7.3.6 Considered the recommendations of the Committee of all Chairmen, JAM-2004 regarding Modalities of the Joint Admission Test to M.Sc. (JAM).

Prof. H.R.Wason, Chairman, JAM-2004 briefed the Senate about the Modalities of the Joint Admission Test to M.Sc. (JAM) and highlighted the salient features for implementation of the JAM. After discussion, the Senate **RESOLVED** that the recommendations of the Committee of all Chairman, JAM-2004 regarding Modalities for conducting the Joint Admission Test to M.Sc. (JAM) as given in the **agenda note** be approved with the following observations:

(a) Biotechnology & MCA Test Papers may be fully Objective, having questions with multiple-choice answers. There will be negative marking for wrong answers. The weightage will be 33% of the marks awarded for correct answers.

(b) All the Test Papers may be of the Objective Type with the provision of negative marking, which issue may be discussed in the next meeting of Chairman, JAM-2004.

(c) Model Questions Papers need not be sent to the candidates alongwith the Information Brochure or Admit Card. However, the syllabus will be included in the Information Brochure.

(d) There would no requirement of securing a minimum percentage of marks in the qualifying examination for appearing in the JAM test. However, for counselling, the respective IITs may use their own threshold criteria.

7.4.0 <u>REPORTING ITEMS:</u>

7.4.1 Reported that the Chairman, Senate on the recommendations of the Board of Undergraduate Studies has approved the following Electives Courses of Electrical Engineering Department (along with the enclosed Syllabus) to be offered to the students from the session 2003-04 onwards (Appendix- A).

1. EE-429 Digital Image Processing (4 Credits)
2. EE-430 Single Chip Microcomputer and Applications (4 Credits)

7.4.2 Reported that the Chairman, Senate has approved the revised Pre Ph.D. courses as proposed by the Department of Humanities and Social Sciences as per the resolution of the Senate. (Appendix – B).

Noted.

7.4.3 Reported that the Chairman, Senate has approved the appointment of a Coordinator B.Tech. courses as an Ex-Officio member of the Board of the Undergraduate Studies.

Noted.

7.4.4 Reported that the Ministry of Human Resource Development vide their letter No.F.23-1/2002-TS.I dated 28th July, 2003 has directed that in order to safeguard the interests of PH candidates in GATE examination there should be atleast 3% PH candidates in the list of GATE qualified candidates and to relax the cut off for these candidates like SC/ST category if 3 % number of candidates are not available.

Noted.

7.4.5 Reported that the Committee of IIT Directors has approved holding of a common entrance test on the JEE pattern with the name Joint Admission Test to M.Sc. (JAM) for admissions to all post-B.Sc. programmes in IITs from the academic session 2004-05.

Noted.

7.4.6 Reported that the Director has approved the award of the academic & other prizes to the students for the year 2003 to be given in the forthcoming Convocation/ Prizes Distribution/Foundation functions as per the details given in the agenda note.

Noted. Further, the members of the Senate may send their suggestions with regard to the typing error, discrepancies, inconsistencies, additions, deletions etc. to the concerned Deans for incorporation in the list.

In the end, the Chairman apprised to the Senate that a presentation be made by the Chairman, JEE and Chairman, GATE on the participation of IITR in the conduct of JEE-2003 and GATE 2003 in the next meeting of the Senate.

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

Appendix-A
Item 7.4.1

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPTT./CENTRE _ELECTRICAL ENGINEERING_____

1. Subject Code: ___EE429_____ Course Title : DIGITAL IMAGE PROCESSING_____

2. Contact Hours : L; __3_ ; T; _1___ ;P;_0____

3. Examination Duration (Hrs.) : Theory 3 | | Practical 0 | |

4. Relative Weightage :CWS 25 | PRS 0 | MTE 25 | ETE 50 | PRE 0 |

5. Credits : 4 | 6. Semester : Autumn | Spring | both (Both)

7. Pre- requisite : __Basic course in engg. maths 8. Subject Area DE

9. Objective of Course : __to acquait the students about the basics of the image processing techniques and their applications in various fields.

10. Details of Course:

S. No.	Particulars	Contact Hours
1.	**Digital Image fundamentals** : human visual system and visual perception, image sensing and acquisition, image file types, pixel representation and relationship	8
2.	2-D signal processing concepts : review of one dimensional signal processing techniques, their extension to 2-D formats	6
3.	Image processing concepts : image enhancement, image restoration, image segmentation, boundary detection etc.	8
4.	Image processing techniques : noise models, filtering-spatial and frequency domain, other techniques-inverse filtering, Wiener filtering, least square filtering	10
5.	Image analysis and compression : spatial techniques, frequency domain techniques, multi-resolution techniques, image compression fundamentals - lossy and lossless compression	10

11. Suggested Books :

S. No.	Name of Books/Authors	Year of Publication
1.	Digital Image Processing : Gonzalez R.C. and Woods R.C., Pearson Education,Asia	2002
2.	Fundamentals of Digital Image Processing : Jain A.K., Prentice Hall India	1989
3.	Digital Image Processing : Rosenfold A. and Kak A.C. ,	1986
4.	Handbook of Image Processing Operators : Klette R and Zamperoni P., John Wiley & Sons	1996

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPTT./CENTRE : **Electrical Engineering Department**

1. Subject Code: **EE – 430** Course Title : **Single Chip Microcomupter and Applications**

2. Contact Hours : L; **3** ; T; **0** ; P; **2**

3. Examination Duration (Hrs.) : Theory [0|3] Practical [–|–]

4. Relative Weightage :CWS [..|0] PRS [25] MTE [25] ETE [50] PRE [–|–]

5. Credits : [04] 6. Semester : [✓] Autumn [ ] Spring [ ] Both

7. Pre- requisite : **Knowledge of Microprocessor and Interfacing.** 8.Subject Area : [illegible] DE

9. **Objective of Course:** Any microcomputer based system will usually have following devices in some form: i.e., ROM, RAM, I/O ports, Clock Generator, Digital I/O, Serial I/O, Timer and Interrupts. The spectacular advances in digital electronics have made possible to integrate all these devices on a single-chip, called microcontroller and reduces the chip count, cost and size of controllers.The aim of the present course is to teach students in detail the Intel 8051 family microcontroller, their architecture, operation, instruction set, programming and interfacing.

10. Details of Course:

S. No.	Particulars	Contact Hours
1.	Review of 8-bit microprocessors, Intel 8255 Programmable Peripheral Interface, Intel-8253 Programmable interval Timer.	[3]
2.	Intel 8259 Programmable Interrupt Controller: Pin configuration, functional description, operating modes, programming the device	[3]
3.	Intel 8279 Keyboard and Display Interface: Pin configuration, functional description, interfacing, programming the device, Display interface and keyboard interface.	[3]
4.	Intel 8251 USART: Pin configuration, functional description, synchronous and asynchronous serial transmission of data, interfacing serial device, RS-232C signals, programming	[6]
5.	ADC and DAC chips and their interfacing.	[3]
6.	Intel 8051 Microcontroller: Introduction, Architecture, Functional diagram, Pin description, Oscillator, CPU Timing, Accessing external memory, I/O ports, Timer/Counter, Serial Interface, Interrupts, Single-step operation, Memory organization, Addressing modes, Instruction set and programming, Boolean processing capability, Hardware Interfacing, I/O expansion, Family of Intel 8051 Microcontroller, Programming & Erasing EPROM.	[20]
7.	Examples of micro-controller applications.	[4]

11. Suggested Books :

S. No.	Name of Books/Authors	Year of Publication
1.	Intel Manual	
2.	Ayala Kenneth J.," The 8051 Microcontroller- Architecture, Programming & Applications", 2nd Edition, Perram International Publishers (India), Mumbai	1996
3.	Hall D.V., " Microprocessor and Interfacing –Programming and Hardware", McGraw Hill, New Delhi	1992
4.	Predko M., "Programming & Customizing the 8051 Microcontroller", Tata McGraw Hill, New Delhi	1999
5.	Gilmore, "Microprocessors – Principle and applications", Tata McGraw Hill, New Delhi	1997
6.	Stewart J, "Microprocessor Systems- Hardware, Software & Programming", Prentice Hall, New Jersey	1990

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code** HS 901 **Course Title** Research Methods in Social Sciences

2. **Contact Hours** : L; 02 ; T; 01 ; P; 0

3. **Examination Duration (Hrs.)** : Theory [0 2] Practical [0 0]

4. **Relative Weightage**: CWS [25] MTE [25] ETE [50]

5. **Credits:** [03]

6. **Semester** [ ] Autumn [ ] Spring [yes] Both

7. **Pre-requisite**: Nil 8. **Subject Area**: Social Sciences

9. **Objective of Course**: To help the students in collecting data, selecting the sample and designing the methodology of the study.

10. **Details of Course:**

S.No	Particulars	Contact Hours
1.	**Problem and Hypotheses** ; Problems , Values and Definition, Generality and Specificity of Problems and Hypotheses. The importance of problems and Hypotheses. The Multivariate nature of behavioral research and problems.	5
2.	**Sampling and Randomness** ; Sampling, Random Sampling, And Representativeness, Randomness, randomization, Random Assignment, Sample size, Kind of samples.	5
3	**Testing Hypotheses** ; Differences between means, Absolute and Relative differences, Correlation Coefficients.	5
4	**Research Design** ; Meaning, Purpose, and Principles, Research Design as variance control, Maximization of experimental variance, control of extraneous variables.	5
5	**Types of Research** ; Ex post Facto Research, Laboratory Experiment, Field experiments and Field studies, Survey research.	4
6	**Methods of observation and data collection** ; Interview and Interview Schedules, Objective tests, Psychometric & Projective Tests, Scales & Types of Scales, Content Analysis, Sociometry, Semantic Differential.	4
	Total	28

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	Foundation of Bhevavioral Research, Kerlinger, F.n	(1983)
2.	Research Methodology, Methods and techniques, Kothari, C.R.	(1990)
3.	Research Methods in Psychology, Shaughnessy, J.J., Zechmeister, E.B.	(1977)

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code** HS 902 **Course Title** ; Understanding Personality

2. **Contact Hours** : L; 03 ; T; 01 ; P; 0

3. **Examination Duration (Hrs.)** : Theory | 0 3 | Practical | 0 0 |

4. **Relative Weightage**: CWS | 25 | MTE | 25 | ETE | 50 |

5. **Credits:** | 04 |

6. **Semester**

		yes
Autumn	Spring	Both

7. **Pre-requisite**: Nil **8. Subject Area:** Psychology

9. **Objective of Course**: To introduce the students with different theories of personality and methods of personality assessment.

10. **Details of Course**:

S.No	Particulars	Contact Hours
1.	**Approaches of the Study of Personality ;** An Introduction	5
2.	**Major techniques of personality assessment;** Inventories, the interview, projective techniques, the script, observational and behavioral assessment and the case study.	5
3	**Personality Theories**; Trait, type, Psychoanalytical, humanistic, self, social learning and cognitive theories, Emphasis on assessment methods in these theories, Models of healthy Personality, Mature Person and Self Actualizing Personality.	12
4	**Administration of major personality tests;** interpretation of test responses (with discussions). TAT and other psychometric tests.	8
5	**The Rorschach inkblot tests;** Theory and interpretation.	5
6.	**Determinants of personality:** Biological and Socialization Factors, Stress and Coping, Emotional & Spiritual Intelligence.	7
	Total	42

11. **Suggested Books:**

S.No.	Name of Books/Authors	Year of Publication
1.	Essentials of Psychological Testing , Cronbach	1970
2.	Theories of Personality, Hall Lindzey & Campbell .	1987
3.	The Human Personality, Singer, J.L.	1984
4	Principles of Personality, Wiggings, Renner, Clore and Rose	1976
5	Stress & Coping, Pestonjee, D.M.	1990
6	Understanding the Working Mind, Dash, J.P.	2000

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code** HS 903 **Course Title** Advance Course in Social Psychology

2. **Contact Hours** : L; 02 ; T; 01 ; P; 0

3. **Examination Duration (Hrs.)** : Theory 0 2 Practical 0 0

4. **Relative Weightage**: CWS 25 MTE 25 ETE 50

5. **Credits:** 03

6. **Semester** Autumn ____ Spring ____ Both yes

7. **Pre-requisite**: Nil **8. Subject Area:** Psychology

9. **Objective of Course**: To familiarize the students with different theories of social psychology and social phenomena .

10. Details of Course:

S.No	Particulars	Contact Hours
1.	**Social Psychology as a branch of Psychology** – its historical background, major features of contemporary social psychology.	3
2.	**Methods adopted in social psychology:** Experimental and non-experimental approaches, Qualitative research methods.	3
3	**Aggression and Violence:** its innate and learned aspects, Situational and personality determinants of aggressive behaviour.	2
4	**Attitudes :** their formation, measurement and change. The major attitude scales, Attitude change theories/models. The dynamics of persuasion; communicator, message, audience and contextual factors.	4
5	**Social influence, Social facilitation;** social loafing; social peer, conformity and compliance; obedience to authority.	4
6.	**Distributive and procedural justice;** the major concepts and theories. Determinants of allocation rules preferences, allocator, recipient, resource and situational characteristics, Rule preference in procedural justice.	4
7.	**Group Processes:** Cooperation and Competition, Coalition formation, Communication, Social Perception and Leadership.	8
	Total	28

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	Social Psychology, Back, K.W. et al	1977
2.	Social Psychology, Baron & Byrne	1980
3.	Advances in Experimental Social Psychology, Berkowitz (ed.)	1965
4.	Social Psychology, Crano, W.D. & Messe, L.A.	1982
3.	Individual in Society, Kretch, Crutchfield and Ballachery	1983

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code:** HS-904 Course Title: Seminar in Humanities & Social Sciences

2. **Contact Hours** : L: 00 ; T: 02 ; P: 00

3. **Examination Duration (Hrs.)** : Theory | 0 | 0 | Practical | 0 | 0 |

4. **Relative Weightage:** CWS | | MTE | | ETE | |

Write up : 50 Presentation : 50

5. **Credits:** | 02 |

6. **Semester**

		yes
Autumn	Spring	Both

7. **Pre-requisite:** Nil **8. Subject Area:** Humanities & Social Sciences

3. **Objective of Course:** To test the depth of the understanding of the subject matter and argumentative ability of scholar through oral presentation followed by question-answer session.

:

4. **Details of course :**

Seminar on the relevant topic as suggested by the supervisor should be of minimum one hour duration. The scholar has also to submit, as part of this course, a write-up of about 20 to 30 pages in neatly typed and bound form. The topic should be exploratory in nature. The candidate shall be expected to discuss the chosen problem in analytical manner. The presentation shall be followed by a question-answer session. The candidate shall be assessed on the basis of his/her depth of knowledge and capability to reach at conclusions after the analysis. Weightage shall be given to thorough knowledge of subject, clarity of presentation, correct pronunciation and other communication skills.

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code:** HS-905 **Course Title:** Research Methodology in Economics: Methods and Techniques
2. **Contact Hours:** L: 02; T: 01; P: 0
3. **Examination Duration (Hrs.) :** Theory [0 3] Practical [0 0]
4. **Relative Weightage:** CWS [25] MTE [25] ETE [50]
5. **Credits:** [03]
6. **Semester** [ ] Autumn [ ] Spring [Yes] Both
7. **Pre-requisite:** Nil 8. **Subject Area:** Economics
9. **Objective of Course:** To acquaint the scholars with tools, techniques and methods of economic research and to equip them with the data analysis, interpretation and report writing techniques.

10: Details of Course:

S.No	Particulars	Contact Hours
1.	**Research Methodology:** An introduction; meaning of research: objective of research; motivation in research; types of research, research approaches; significance of research, research methods versus methodology; research and scientific method; importance of knowing how research is done; research process; criteria of good research; problems encountered by researchers in India	04
2.	**Defining the Research Problem:** What is a problem; selecting the problem; necessity of defining the problem; technique involved in defining a problem; an illustration, conclusion.	02
3	**Research Design:** meaning of research design; need for research design; features of a good design; important concepts relating to research design; different research designs; basic principles of experimental designs; important experimental Designs; developing a research plan	04
4	**Sampling Design:** Census and sample survey; implications of a sample design; steps in sampling design; criteria for selecting a sampling procedure; characteristics of a good sample design; different types of sample designs; how to select a random sample? Random sample from an infinite universe; complex random sampling design.	04
5.	**Measurement and Scaling Techniques:** Measurement in research; measurement scales; sources of error in measurement; tests of sound measurement; technique of developing measurement tools; scaling; meaning of scaling; scale classification basis; important scaling techniques; scale construction techniques	02
6.	**Methods of Data Collection**: Selection of appropriate method for data collection; collection of primary data; collection of data through questionnaires; collection of data through schedules; other methods of data collection; collection of secondary data; case study method, guidelines for constructing questionnaire/schedule; guidelines for successful interviewing.	05
7.	Processing and Analysis of Data: Processing operations;	02

	problems in processing; elements/types of analysis; statistics in research; measures of central tendency; measures of dispersion; measures of asymmetry (skewness); measures of relationship; simple regression analysis; multiple correlation and regressions; partial correlation; association in case of attributes; other measures	
8.	**Sampling Fundamentals**: need for sampling; some fundamental definitions; important sampling distributions; central limit theorem; sampling theory; Sandler's A-test; concept of standard error; estimation; estimating the population mean (u); estimating population proportion; sample size and its determinations; determination of sample size through the approach based on precision rate and confidence level; determination of sample size through the approach based on Bayesian statistics	03
9.	**Interpretation and Report Writing:** meaning of interpretation; why interpretation? Technique of interpretation, precautions in interpretation; significance of report writing; different steps in writing report; layout of the research report; types of reports; oral presentation; mechanics of writing a research report; precautions for writing research reports.	02
	Total	28

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	*Research Methodology: Methods and Techniques*, C.R.Kothari	2000
2.	*Methods in Social Research*, William J.Goode and Paul K.Hatt	1952
3.	*Scientific Social Surveys and Research*, P.V.Young	1960
4.	*Constructing Effective Questionnaire*, Peterson	1999
5	*Developing Effective Research Proposals*, Punch	2000
6.	*How to conduct Surveys*, Fink	1998
7.	*Research Design*, Leonard Bickman	2000
8.	*Introduction to Social Research*, Keith F.Punch	1998
9.	*The Foundation of Social Research*, Michael. Crotty	1998

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code:** HS-906 **Course Title: Advancement in Development Economics**
2. **Contact Hours**: L: 02; T: 01 ; P: 0

3. **Examination Duration (Hrs.)** : Theory [0 3] Practical [0 0]

4. **Relative Weightage**: CWS [25] MTE [25] ETE [50]

5. **Credits** [03]

6. **Semester** [ ] Autumn [ ] Spring [Yes] Both

7. **Pre-requisite**: Nil **8. Subject Area**: Economics

9. Objective of Course: To familiarize the scholar with different development aspects, theories and issues. Exposure to the development economics, which will help the students to enhance their understanding of the various facets of economic problems.

10. Details of Course:

S.No	Particulars	Contact Hours
1.	Introduction	01
2.	Development Contexts: Conceptions from and about people at the grassroots, the cultural and political contexts.	02
3	Trends in Development Theory: Development in question, the status of development, meaning of development overtime, the development field, trends in development theory.	03
4	Population and Development: population growth and development process, determinants of fertility, optimum population and other facets of demographic transitions.	04
`5.	Resource allocation, market mechanism and role of the State, equity and growth approach to social development.	02
6.	Development and the environment: market based approach to environmental analysis, common property rights, measuring environmental values.	03
7.	Trade and Development: The gains from trade. Trade and employment, interface between trade, technology and development, trade policies, foreign capital and	04

	development, WTO, international trade and development.	
8.	Urbanization and Rural - Urban Migration: the migration and urbanization dilemma, migration and development, international migration in developing countries.	03
9.	Rural Development: concept, determinants and policies, decentralised planning and Panchayati Raj Institutions.	03
10.	Economic growth, Poverty and human development index	3
	Total	28

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	Managing Development; K. Staudt, Sage Publications	1991
2.	Growth and Development, A.P. Thirlwall, Macmillan Press	1999
3.	Economic Development in the Third World, M.P. Todaro, Orient Longman	1993
4.	Word Development Reports, World Bank	1999
5	Collaboration in International Rural Development, George H. Axinn and Nancy W. Axinn, Sage Publications	1997
6.	Rural Development, K. Singh, Sage Publications	2000
7.	Natural Resource and Environmental Economics, Perman R.Y. MA and J. Mcgilvray, Orient Longman	1996
8.	Development Theory, Jan Wederveen Pieterse, Vistar Publications	2001

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code:** HS-907 **Course Title**: Econometric Methods for Economic Research
2. **Contact Hours** : L: 03 ; T: 01 ; P: 0
3. **Examination Duration (Hrs.)** : Theory [03] Practical [0 0]
4. **Relative Weightage**: CWS [25] MTE [25] ETE [50]
5. **Credits:** [04]
6. **Semester** [ ] Autumn [ ] Spring [yes] Both
7. **Pre-requisite**: Nil 8. **Subject Area**: Economics
9. **Objective of Course**: To familiarize scholars with the advanced statistical and econometrics methods applied to economic research.

10. Details of Course:

S.No	Particulars	Contact Hours
1.	**Single-Equation Regression**: The nature of regression analysis; two – variable regression analysis: some basic ideas of two-variable regression model: the problem of estimation; the normality assumption: classical normal linear regression model, two-variable regression: interval estimation and hypothesis testing: extensions of the two-variable linear regression model; multiple regression analysis: the problem of estimation multiple regression analysis; the problem of inference; the matrix approach to linear regression model	06
2.	**Relaxing the Assumptions of the Classical Model**: Multicollinearity and micronumerosity; hetroscedasticity; autocorrelation; traditional econometric methodology; alternative econometric methodologies	08
3.	**Topics in Econometrics:** Regression on dummy variables; Regression on dummy dependent variable: The LPM, Logit, Probit, and Tobit Models; Autoregressive and Distributed – Lag Models	10
4.	**Simultaneous-Equation Models:** Simultaneous-Equation Models; the identification problem; simultaneous-Equation Methods	08
5.	**Time Series Econometrics;**: Stationarity, unit roots, and cointegration; Forecasting with ARIMA and VAR Models	10
	Total	42

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	*Multiple Regression: Paul D. Allison, pine Forge press, USA*	1999
2.	*International Handbooks of Quantitative Applications in the Social Sciences, sage Publications*	1995
3.	*How to Analyze Data, Elaine Lindheism and Carol Taylor Fitz-Gibbon*	1987
4.	*Basic Econometrics, Damodar N. Gujarati*	1995
5	*Koutsoyiannis, A Theory of Econometrics, Harper & Row*	1977
6.	*An Introduction to Econometrics, G.S. Maddala*	2001
7.	*Applied Econometrics, Meghnad Desai*	1976
8.	*Econometric Methods, Johnston J.*	1984

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code:** HS -908 **Course Title: Research Methodology in Language & Literature**

2. **Contact Hours** : L: 02 ; T: 01 ; P: 0

3. **Examination Duration (Hrs.)** : Theory | 0 | 2 | Practical | 0 | 0 |

4. **Relative Weightage:** CWS | 25 | MTE | 25 | ETE | 50 |

5. **Credits:** | 03 |

6. **Semester** | | Autumn | | Spring | yes | Both |

7. **Pre-requisite**: Nil 8. **Subject Area**: Language & Literature

9. **Objective of Course**: To familiarize fresh scholars with the tools and norms of serious writing like Ph.D. Dissertation, to make them know the difference between descriptive and argumentative writing focused on a single topic for detailed and substantial discussions.

:

10. Details of course :

S.No	Particulars	Contact Hours
1.	**Theoretical Background**: Meaning, Nature and Scope of Research; Difference between writing a popular article and research paper; a book and a dissertation	06
2.	**Methodology and Approaches**: Selection of Research Topic; Plan of Work, Thesis Statement and its Feasibility; Survey of different critical approaches, Selection of a particular approach, Micro and Macro analysis	06
3	**Material Collection**: Primary and Secondary Sources, Reliability of Sources	03
4	**Preparatory Steps**: Writing of Synopsis, Literary Survey; Collection, Listing and Organization of Material, Note making, Use of Note Cards and Reference Cards.	06
5	**Mechanics of Writing**: Single and Multi Tier Division of Chapters, Writing of the Main Chapters, Preparation and Presentation of Conclusions, Preparation of References, Working Bibliography, Indexing, Use of MLA Style Sheet	07
	Total	28

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	*Methods of Literary Critiism and Analysis*, A.N.Bogdanov & L.G.Yudkevitch	1969
2.	*The Craft of Research*, Booth and Colomb	1995
3.	*Methodology and Methods of Linguistic Research*, I.P.Ranspopov	1976
4.	*Literary Research Guide*, J.L.Harner	1998
5.	*The Art of Literary Research*, R.D.Altick & J.J.Fenstermaker	1993
6.	*Handbook of Literary Research*, R.H.Miller	1995

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code** HS- 909 **Course Title: Principles of Literature**

2. **Contact Hours** : L: 03 ; T: 01 ; P: 0

3. **Examination Duration (Hrs.)** : Theory | 0 | 3 | Practical | 0 | 0 |

4. **Relative Weightage**: CWS | 25 | MTE | 25 | ETE | 50 |

5. **Credits:** | 04 |

6. **Semester** | | Autumn | | Spring | yes | Both |

7. **Pre-requisite**: Nil 8. **Subject Area**: Language and Literature

9. Objective of Course: To clarify the concept of Literature and its Principles to new scholars; to lay a strong foundation in them for complex literary understanding.

:

10. Details of course :

S.No	Particulars	Contact Hours
1.	**Conceptual Background**: Appreciation of Literature, Literary Sensibility, Literature and Life, Literature and Society, Truth and Morality in Literature	08
2.	**Theories of Literary Appreciation**: Art for Art's sake, Psychological Appreciation of Literature, Freud and Jung, Archetypal Criticism, New Criticism and Structuralism, Reader Response Criticism	12
3	**Recent Approaches to Literary Appreciation**: The Post-War Scenario and Social Changes, Feminist Readings of the Texts, Post Structuralism, Deconstruction, Postmodernism, Postcolonialism	10
4	**Practical Criticism**: Analysis and Discussion of Literary Texts by students from the point of view of a particular analytical approach.	12
	Total	42

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	*Theory of Literature*, Wellek and Warren	1999
2.	*Literary Theory: An Introduction*, Terry Eagleton	1983
3.	*Contemporary Literary Criciticism*, Davis and Schleifer	1989
4.	*A Glossary of Literary Terms*, M.H.Abrams	2000
5.	*Modern Literary Theory: A Reader*, Rice, Philip & Wagh, Patricia	1989

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code:** HS-910 **Course Title: The Art of Fiction**

2. **Contact Hours :** L: 02 ; T: 01 ; P: 0

3. **Examination Duration (Hrs.) :** Theory | 0 | 2 | Practical | 0 | 0 |

4. **Relative Weightage:** CWS | 25 | MTE | 25 | ETE | 50 |

5. **Credits:** | 03 |

6. **Semester**

Autumn	Spring	Both
		yes

7. **Pre-requisite:** Nil 8. **Subject Area:** Language and Literature

9. Objective of Course: To acquaint the scholars with the different crafts and techniques adopted by novelist and to familiarize them with the major currents in the history of novel.

10. Details of course :

S.No	Particulars	Contact Hours
1.	**Background Survey:** Fiction as a Genre, The Meaning of Fiction, Fact in Fiction, Types of Fiction	04
2.	**Development of the Novel:** Story telling and Novel, The Four Wheels of the Novel, Epistolory Techniques, Novel in the 19th Century	06
3.	**Science and Novel:** Impact of Science & Technology on the Novel, Changing Social Realities and their Reflection in the Novel, Science Fiction	06
4	**Modern Novel:** Concept of Modernity in Novel, the changing concept of Time, Stream of Consciousness techniques, the changing art of characterization.	06
5.	**Structural Pattern:** Narrative Techniques, Plot and Structure, various theories of interpretation.	03
6.	**Novel as a Global Art Form:** Development of a Novel as an art form in Europe, America and India; influence of localized tendencies and movements	03
	Total	28

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	*The Art of the Novel*, Milan Kundera	1995
2.	*The Aspects of the Novel*, E.M.Forster	1990
3.	*The Craft of Fiction*, Lubbock, Percy	1957
4.	*Character and the Novel*, Harvey, W.J.	1965
5.	*The Rhetoric of Fiction*, Booth, Wayne C.	1961

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

1. **Subject Code:** HS-911 **Course Title: Poetry: Major Trends and Critical Appreciation**

2. **Contact Hours** : L: 02 ; T: 01 ; P: 0

3. **Examination Duration (Hrs.)** : Theory | 0 | 2 | Practical | 0 | 0 |

4. **Relative Weightage:** CWS | 25 | MTE | 25 | ETE | 50 |

5. **Credits:** | 03 |

6. **Semester**

		yes
Autumn	Spring	Both

7. **Pre-requisite:** Nil 8. **Subject Area:** Language and Literature

9. Objective of Course: To make the scholars know and appreciate the finer sensibilities of poetry, to equip them with the critical nuance to evaluate poems properly for in-depth research.

10. Details of course :

S.No	Particulars	Contact Hours
1.	**Various Concepts of Poetry:** What constitutes Poetry, Literature and Poetry, Poetic Sensibility and Appreciation, Poetic Use of Language	04
2.	**Early stages of Development:** The beginning of Poetry as a Literary Form; Rise of Lyric, Sonnet and other poetic forms in the 16th Century.	03
3	**Poetry in the 17th Century:** Elizabethan and Metaphysical poetry, Jacobean and Caroline Poetry, revival of Epic Poetry.	05
4	**Poetry in 18th & 19th Centuries:** Neoclassical poetry, Pre-Romantics, French Revolution and The Great Romantic Movement, Victorian Poetry, Reflections of Social Changes	07
5.	**Modern Poetry:** Major Poets in 20th Century, Revival of Blank Verse, Reawakened interests in Tradition and Mythology, Imagery and Symbolism, Modern American and Indian English Poetry	09
	Total	28

11. Suggested Books:

S.No.	Name of Books/Authors	Year of Publication
1.	*The Romantic Imagination*, C.M.Bowra	1998
2.	*The Modern Writer and His World*, G.Fraser	1970
3.	*The Truth of Poetry*, M.Hamburger	1969
4.	*Poetry Today*, Anthony Thwaite	1985