ANNEXURE TO ITEM 13.8

10TH MEETING OF

SENATE

AGENDA

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA

DUE DATE OF MEETING: 29TH NOVEMBER, 2007

NATIONAL INSTITUTE OF TECHNOLOGY
(DEEMED UNIVERSITY)
KURUKSHETRA-136119

Agenda	:	10th Meeting of the Senate
Venue	:	Senate Hall, NIT, Kurukshetra
Date & Time	:	29.11.2007 at 11.30 AM

Item No.	Agenda Item	Pages
10.1	To note the new composition of Senate under NIT Act-2007 enforced w.e.f. 15th August, 2007	1
10.2	To consider nomination of one Professor and one Assistant Professor/Lecturer of the Institute on the Board of Governors as per NIT Act-2007	2
10.3	To confirm the minutes of the 9th meeting of the Senate held on 18.1.2007	3-10
10.4	To note the Action Taken Report on the minutes of the 8th meeting of the Senate held on 20.10.2006	11
10.5	To note the Action Taken Report on the minutes of the 9th meeting of the Senate held on 18.01.2007	12-13
10.6	To apprise the Senate of the agenda and decisions taken in the 4th to 12th meetings of Standing Committee on Senate Affairs (SCSA) and to consider the same	14-65
10.7	To note the admission status of various UG/PG courses for the Academic Session 2007-2008 in the Institute	66-67
10.8	To consider the report submitted by the Committee constituted by the Senate regarding consolidation of the information to be enshrined in the Ordinance of Studies for the Degree of Doctor of Philosophy (Ph.D) of the Institute (Ref. Items 5.17, 7.7 and 8.3)	68

10.9	Regarding decisions taken in the Board of Studies of Department of Civil Engineering I. To consider the reframing of course numbers of M.Tech. (Civil) Environmental Engineering II. To consider rearranging of certain M.Tech. courses and course numbers III. To consider modifications in the syllabi of existing B.Tech. courses in Civil Engineering	69-79
10.10	Regarding decision taken in the Board of Studies of Department of Mechanical Engineering I. To consider renaming of the three specializations of M.Tech. II. To consider change of course no. of the subject of Probability and Statistics (IEM-213) B.Tech. 3rd Semester	80
10.11	Regarding Department and Course of Master of Computer Applications: I. To apprise the Senate of the introduction of new course in Master of Computer Applications II. To note the constitution of Board of Studies of the Department of Computer Applications III. To consider the Scheme and Syllabi of Master of Computer Applications 2nd Semester	81-92
10.12	To ratify the action taken by the Chairman, Senate in approving the revised Scheme of 1st to 4th Semester and detailed Syllabi of 2nd to 4th Semester of MBA Course	93-141
10.13	To consider NCC as an alternate course to Physical Education and Sports for the students of B.Tech 1st year.	142-147
10.14	To re-consider Merit-scholarship on CGPA basis instead of the present SGPA basis	148

10.15	To consider awarding of Medals and Prizes to M.Tech., MBA and MCA students	149
10.16	To consider the proposal of change of name of the Deptt. of Physics	150
10.17	To consider the proposal to constitute a Committee to review the Ordinance of Studies, Regulations and Scheme of Master of Technology in the Institute	151
10.18	To consider the report submitted by the committee constituted by the Chairman, Senate regarding fee structure for the members of staff of NITK for M.Tech. (Part-time) Degree Course	152-153
10.19	To consider that the Senate Agenda may be circulated to members through e-mail/soft copy in future	154
10.20	To consider to carry out admissions to M.Tech. during the month of June, 2007	155
10.21	To consider the payment of remuneration to Academic Staff out of "Students Fund" (Official Transcripts)	156
10.22	Any other item with the permission of the Chair	

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Tabled Agenda	:	10th Meeting of the Senate
Venue	:	Senate Hall, NIT, Kurukshetra
Date & Time	:	29th November, 2007 at 11.30 AM

Tabled Item No.	Agenda Item	Pages
10.22	To re-consider Academic Regulations regarding Convocation and use of Costume/Robes	157-159
10.23	To consider request of Director of Sports of the Institute for changing nomenclature of the Sports Department	160-162

Item:10.1 **To note the new Composition of Senate under NIT Act 2007 enforced w.e.f. 15th August, 2007**

In accordance with the provisions contained under Section 14 and Statute 7 of the National Institutes of Technology Act 2007 enforced by the Government of India, Ministry of Human Resource Development, Department of Higher Education, New Delhi and conveyed to us vide letter No. F.20-22/2004-TS.III dated 24th/27th August, 2007, the following shall be the composition of Senate of this Institute:-

14 (a) The Director, ex officio, who shall be the Chairman of the Senate

(b) The Deputy Director, ex officio;

(c) The Professors appointed or recognized as such by the Institute for the purpose of imparting instructions in the Institute;

(d) Three persons, one of whom shall be a woman, not being employees of the institute, to be nominated by the Chairperson in consultation with the Director, from amongst educationists of repute, one each from the field of science, engineering and humanities;

Chairperson means Chairman BOG

(e) Such other members of the staff as may be laid down in the statutes – namely

Further As given under section 18, Registrar shall act as Secretary of the Senate.

It may be added here that under section 37(b) of the Act (transitional provisions) till the constitution of new Senate the existing Senate of every Institute shall continue to so function until a new Senate is constituted for that Institute under this Act, but on the constitution of new Senate under this Act, the members of the Senate holding office before such constitution shall cease to hold office.

The Senate may please note the new composition of the Senate as per NIT Act-2007.

Item: 10.2 **To consider nomination of one Professor and one Assistant Professor /Lecturer of the Institute on the Board of Governors as per NIT Act-2007**

As per existing composition of the Board of Governors laid down under Clause 9 (i) of the Memorandum o f Association, National Institute of Technology Society, Kurukshetra, one Professor and one Assistant Professor of the Institute by rotation as per seniority shall be the members on the BOG. The term of office of faculty members under the above said MOA & Rules is one year. At present the position of term of membership of faculty members is as under:

1. Dr. S.P. Jain, Professor in Electrical Engineering from 1.9.2006 to 31.8.2007.
2. Dr. Diwan Singh, Assistant Professor in Civil Engineering from 29.4.2007 to 28.4.2008

Now as per Clause (f) of section 11 of the National Institutes of Technology Act-2007 as published in Gazette of India Extraordinary Part-II Section-3, Sub-Section(ii) dated 10th August, 2007 with effect from 15th August, 2007, **one Professor and one Assistant Professor or a Lecturer of the Institute are to be nominated by the Senate on the Board of Governors.**

The term of office of a member nominated under Clause (f) section 11 of the Act mentioned above shall be two years from the date of nomination.

As per said provision of the NIT Act - 2007 the Institute Senate has to nominate the faculty members on the Board of Governors.

The Senate may kindly consider and decide the matter regarding nomination of faculty members on the Board of Governors.

Item 10.3 To confirm the minutes of the 9th meeting of the Senate held on 18.01.2007.

The minutes of the 9th meeting of the Senate held on 18.01.2007 were circulated to all the members. No comments have been received. The minutes are enclosed as Appendix 10.3 from page 4 to 10

The Senate may confirm the minutes of its 9th meeting.

NATIONAL INSTITUTE OF TECHNOLOGY
(DEEMED UNIVERSITY)
KURUKSHETRA-136119

Minutes of the 9th meeting of the Senate, National Institute of Technology, Kurukshetra held on Thursday, the 18th January, 2007 at 11.30 AM in the Senate Hall, N.I.T., Kurukshetra.

The following were present:

Member Present:-

1.	Dr. M.N.Bandyopadhyay, Director, NIT, Kurukshetra	Chairman
2.	Dr. Krishna Gopal, Professor, Elect. Engg. Deptt. and Dean (Planning & Development), NIT, Kurukshetra	Member
3.	Dr. R.K Bansal, Professor, Civil Engineering Department & Dean(Academic) NIT, Kurukshetra	Member
4.	Dr. T.K Garg, Professor, Mech. Engg.Deptt., NIT, Kurukshetra	Member
5.	Dr. S.P Jain, Professor & Chairman, Electrical Engineering Department, NIT, Kurukshetra	Member
6.	Dr. V.K Sehgal, Professor & Chairman, Civil Engineering Department, NIT, Kurukshetra	Member
7.	Dr. S.K Sharma, Professor, Mechanical Engineering Department, & Dean (Estate, Constn & Elect. Mtc.) NIT, Kurukshetra	Member

8.	Dr. A K Gupta, Professor, Electronics & Communication Engg. Deptt., NIT, Kurukshetra	Member
9.	Dr. K S Kasana, Professor & Chairman, Mechanical Engineering Department, NIT, Kurukshetra	Member
10.	Dr. K B Singh, Professor, Department of Humanities & Social Sciences, NIT, Kurukshetra	Member
11.	Dr. A Swarup, Professor, Electrical Engineering Department, NIT, Kurukshetra	Member
12.	Dr. S K Chakarvarti, Professor & Chairman, Physics Department NIT, Kurukshetra	Member
13.	Dr. D V Singh, Professor & Chairman, Mathematics Department, NIT, Kurukshetra	Member
14.	Dr. D.K. Soni, Professor, Civil Engineering Department, & Chief Warden (Boys' Hostels), NIT, Kurukshetra	Member
15.	Dr. R.C. Bhattacharjee, Professor, Civil Engineering Department, & Chairman, Business Administration Deptt., NIT, Kurukshetra	Member
16.	Dr. Kuldeep Kumar, Professor, Mathematics Department, NIT, Kurukshetra	Member

17.	Dr. N.K. Gupta, Professor, Civil Engineering Department, NIT, Kurukshetra	Member
18.	Dr. S.S.Rattan, Professor, Mechanical Engineering Deptt., NIT, Kurukshetra	Member
19.	Dr. K.S.Sandhu, Professor, Electrical Engineering Deptt., NIT, Kurukshetra	Member
20.	Dr. Sudhir Kumar, Professor, Mechanical Engineering Department, NIT Kurukshetra	Member
21.	Dr. Baldev Setia, Professor, Civil Engineering Department, NIT, Kurukshetra	Member
22.	Dr. Rajender Kumar, Professor & Chairman, Department of Humanities & Social Sciences, NIT, Kurukshetra	Member
23.	Dr. Brahamjit Singh, Professor & Chairman, Electronics & Comm Engg Department, NIT, Kurukshetra	Member
24.	Dr. Dinesh Kumar, Assistant Professor & Chairman, Chemistry Department, NIT, Kurukshetra	Member
25.	Dr. Mayank Dave, Asstt. Professor & Chairman, Computer Engineering Department, NIT, Kurukshetra	Member

26.	Sh. R.P.S. Lubchab, Registrar & Member Secretary, Senate, NIT, Kurukshetra	Member-Secretary

The following members shown their inability to attend the meeting:-

1.	Prof.C.V. Ramakrishnan, Professor, Department of Applied Mechanics, Indian Institute of Technology, New Delhi-110016	Member
2.	Dr.Mrs.Renu Bhargava, Professor, Civil Engineering Department Indian Institute of Technology, Roorkee (UA)	Member
3.	Shri S.P. Mahi, 30/Type V, Railway Enclave San Martin Marg, Chankya Puri, New Delhi – 21	Member
4.	Shri Adesh Gupta, Chief Executive Officer, Liberty Group of Industries, KARNAL.	Member

The following members could not attend the meeting:-

1.	Dr. R.L. Sharma, Professor, Civil Engineering Department, National Institute of Technology, Hamirpur. (HP)	Member
2.	Dr. M.L. Kothari, Professor, Electrical Engineering Department, Indian Institute of Technology, Hauz Khas, New Delhi. 110 016	Member

3.	Sh. Ravi Jaidka, President, Indian Sugar & Gen. Engg. Corporation, Yamuna Nagar, Haryana	Member
4.	Er. Mukesh Gulati, Sr. Cluster Development Adviser, United Nations Industrial Development Organization, USO House, USO Road, 6 Special Institutional Area, New Delhi. 110 067	Member
5.	Dr. Ranjit Singh, Director, Netaji Subhash Institute of Technology, Azad Hind Fauj Marg, Sector-3, Dwarka, New Delhi	Member
6.	Dr. V K Arora, Professor, Civil Engineering Department & PTSW, NIT, Kurukshetra	Member
7.	Dr (Mrs.) Ratna Dahiya, Asstt. Professor, Electrical Engineering Department, & Chief Warden (Girls' Hostels) NIT, Kurukshetra	Member

Before the agenda items were taken up for discussion, the Registrar and Member-Secretary of the Senate welcomed the Director & Chairman of the Senate and members of the 9th meeting of the Senate. The Senate started deliberations as under:-

Item 9.1 **To confirm the minutes of the 8th meeting of the Senate held on 20.10.2006.**

The Senate confirmed the minutes of its 8th meeting held on 20.10.2006 as circulated to the members of the Senate and as enclosed as Appendix-1 to the Agenda Item 9.1.

Further, the Senate was of the view that the Scheme and Syllabi of M.Tech. Course in VLSI Design already stands approved by the Senate in its 8th meeting held on 20.10.2006 vide item no. 8.20 and only correction

regarding pattern/codes etc. are required to be made for which action may be taken separately by the concerned.

Item 9.2 **To note the Action Taken Report on the minutes of the 8th meeting of the Senate held on 20.10.2006.**

The Senate noted the actions taken on the minutes of the 8th meeting of the Senate held on 20.10.2006 as detailed in the Agenda Item 9.2. However, it was informed to the house that the Action Taken Report is ad-hoc as the minutes are yet to be ratified by the Board of Governors. The final Action Report will be placed before the Senate after the minutes are approved by the Board of Governors.

It was also apprised by the Member-Secretary of the Senate that the Finance Committee of the Institute in its 9th meeting held on 28.10.2006, had already approved and recommended to the Board for allowing payment of honorarium of Rs. 1000/- to each of the external member of various Board of Studies of each Department in the Institute with a ceiling of Rs. 40,000/- (App.) per year for all Departments.

Item 9.3 **To consider approval for students to be awarded degrees in the 4th Convocation scheduled to be held on 21st January, 2007.**

The Senate considered and approved the award of Degrees to the graduates of B.Tech. and M.Tech. in the 4th Convocation scheduled to be held on 21st January, 2007 as detailed in the agenda item 9.3.

Item 9.4 **To consider the approval for the students to be awarded Medals/Certificates in the 4th Convocation scheduled to be held on 21st January, 2007.**

The Senate considered and approved the award of various Medals and Certificates to the passed out B.Tech. students as detailed in the agenda item 9.4. The Senate was also apprised that Sh. Shyam Sunder Dhingra Medal, which is awarded to the Overall Topper of the graduating batch, has been awarded to Mr. Rachit Aggarwal, Roll No. 2K2001.

Further the Senate observed that the Institute awards Medals, Prizes and Certificates to the students and graduates of B.Tech. only. The Senate approved that the Medals & Prizes for M.Tech. and MBA Courses may also be instituted and an item to this effect may be placed before the Senate in its next meeting.

Item 9.5 **To note the changes in the format of Degrees to be awarded in the 4th Convocation of the Institute to be held on 21st January, 2007.**

The Senate noted the changes in the format of Degrees to be awarded in the 4th Convocation, of the Institute to be held on 21st January, 2007. The Senate suggested that the format of Degree Certificate for Ph.D. students should also be included with the above Degrees.

The Senate observed that the format of the above Degree Certificates may be got approved from the Hon'ble Chairman, Board of Governors in anticipation of approval of the Board.

Item 9.6 **To consider relaxation in requisite percentage for registration of Ph.D. Programme in the Department of Chemistry.**

The Senate considered the matter and after detailed explanation from the Chairman, Department of Chemistry, it was decided that a Committee may be constituted by the Director & Chairman of the Senate to look into the matter. This committee will report its findings to the Chairman, Senate.

Item 9.7 **To consider fee structure for the member of staff of NITK for M.Tech. (Part-time) Degree Course.**

The Senate decided that a Committee may be constituted by the Director & Chairman of the Senate to decide the Registration fee & Continuation fee for the members of staff of NITK for pursuing M.Tech Degree Courses as part-time candidates.

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

(R P S Lohchab)
Registrar & Member Secretary,

Approved

Sd/-
(M N Bandyopadhyay)
Director & Chairman, Senate

Item 10.4 To note the Action Taken Report on the minutes of the 8th meeting of the Senate held on 20.10.2006.

The Action Taken Report on the minutes of the 8th meeting of the Senate held on 20.10.2006 was reported to the Senate in its 9th meeting held on 18.1.2007. But the action on some of the items of 8th meeting of the Senate could not be reported to the Senate which are as under:-

Item No.	Agenda Item	Action Taken
8.19	To consider the Scheme and Syllabi of 1st & 2nd Semester M.Tech Nano-Technology	No further action is required.
8.20	To consider starting of an M.Tech course in VLSI Design in Electronics & Communication Engineering Department	The M.Tech course in VLSI Design commenced w.e.f. the session 2007-08 and 18 students for the sanctioned 18 seats were admitted in the first course.
8.21	To consider relaxation in the criteria for supervising number of Ph.D. Scholars in a Department	Separate item is placed in the present (10th) meeting regarding Ordinance & Regulations of studies for the Degree of Doctor of Philosophy (Ph.D.). The item may kindly be discussed and decided when the recommendations as given in the report are being discussed.

Item 10.5 To note the Action Taken Report on the minutes of the 9th meeting of the Senate held on 18.1.2007.

The Action Report on the minutes of the 8th meeting of the Senate held on 20.10.2006 is as under:-

Item No.	Agenda Item	Action Taken
9.1	To confirm the minutes of the 8th meeting of the Senate held on 20.10.2006.	No further action is required
9.2	To note the Action Taken Report on the minutes of the 8th meeting of the Senate held on 20.10.2006.	No further action is required. However, the Action Taken Report on some of the items has been placed before the Senate in its 10th meeting vide item No. 10.4
9.3	To consider approval for students to be awarded degrees in the 4th Convocation scheduled to be held on 21st January, 2007.	The 4th Convocation of the Institute was held on 21st January, 2007 in the Jubilee Hall. Shri Sitaram Yechury, Member Parliament graced the occasion as Chief Guest and delivered the Convocation Address. Er. C.B. Mathur, Hon'ble Chairman, Board of Governors of the Institute presided over the function. The degrees were conferred upon the students by Dr. M.N Bandyopadhyay, Director and Chairman, Senate of NIT, Kurukshetra. A total of 383 degrees (312 for B.Tech and 71 for M.Tech) were conferred, 257 in person and 126 in absentia.
9.4	To consider the approval for the students to be awarded Medals/Certificates in the 4th Convocation scheduled to be held on 21st January, 2007.	
9.5	To note the changes in the format of Degrees to be awarded in the 4th Convocation of the Institute to be held on 21st January, 2007.	The format of the Degree Certificates was got approved from the Hon'ble Chairman, BOG in anticipation of approval of the Board.

9.6	To consider relaxation in requisite percentage for registration of Ph.D. Programme in the Department of Chemistry.	A committee comprising of the following had been constituted by the Director & Chairman of the Senate to discuss and decide the matter: 1. Prof. R.K Bansal 2. Dr. K.S Kasana 3. Dr. S.P Jain 4. Chairman, Chemistry Department Report of the Committee is awaited
9.7	To consider fee structure for the members of staff of NITK for M.Tech. (Part-time) Degree Course.	A committee comprising of the following had been constituted by the Director & Chairman of the Senate to discuss and decide the matter: 1. Prof. R.K Bansal 2. Dr. Krishan Gopal 3. AR (Accounts) The Committee has submitted its report and the same is being placed before the Hon'ble Senate in the present (10th) meeting at Item No. 10.18

Item 10.6: To apprise the Senate of the Agenda and decisions taken in the 4th to 12th meetings of Standing Committee on Senate affairs (SCSA) and to consider the same

The Senate is aware that a Standing Committee on Senate Affairs (SCSA) has been constituted to take emergent and time bound decisions on certain issues that crop up from time to time. During the period under report, 9 such meetings were held on the following dates. The minutes alongwith the agenda of all such meetings are enclosed as Appendix 10.6 from page 15 to 65

Sr. No. of SCSA meeting	Date of meeting
4th	12.2.2007
5th	5.6.2007
6th	13.6.2007
7th	27.6.2007
8th	16.7.2007
9th	18.7.2007
10th	18.8.2007
11th	17.9.2007
12th	16.10.2007

The Senate may kindly consider and approve the decisions taken in the above mentioned meetings of Standing Committee on Senate Affairs.

Appendix 10.6

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

Minutes of 4th meeting of Standing Committee on Senate Affairs held on 12.2.2007 at 10.00 AM in the Board Room.

The following were present:-

1. Dr. M.N.Bandyopadhyay, Director — In Chair
2. Dr. Krishna Gopal, Dean(P&D)
3. Prof. R.K.Bansal, Dean(Academic)
4. Dr. S.P.Jain, Chairman, Elect Engg. Deptt.
5. Dr. V.K.Sehgal, Chairman, Civil Engg. Deptt.
6. Dr. K.S.Kasana, Chairman, Mech. Engg. Deptt.
7. Dr. D.V.Singh, Chairman, Maths. Deptt.
8. Dr. R.C.Bhattacharjee, Chairman, BA Deptt.
9. Dr. Baldev Setia, Professor Incharge, Acad.Affairs
10. Dr. Rajender Deswal, Chairman, Deptt. Of Humanities & Social Sciences.
11. Dr. Brahamjit Singh, Chairman, ECCE Deptt.
12. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
13. Dr. Mayank Dave, Chairman, Computer Engg. Deptt.
14. Sh. R.P.S. Lohchab, Registrar
15. Dr. Sudhir Saxena, President Sports

The following decisions were taken:-

1. **To discuss some modalities for E and F grade category of students.**

In the light of difficulties being faced by the students of B.Tech. 1st Semester as requested by them in their application dated 25.1.2007, it was decided to provide the F grade category of Students the same opportunities for improving their Sessional Marks and End Semester Marks as those are available to the students falling in E grade category.

Further, as a result of detailed discussions on this item, the following decisions were also taken:-

i) To include a specific column in the Registration Form for those students who need/are required to improve their sessional marks. This would be done by payment of additional nominal fees to this effect. The amount of fees would be decided by the Dean(Academic).

iii) A Committee to be constituted to review the B.Tech. Scheme & Ordinance including grading system.

2. **To consider and approve a course in Physical Fitness of UG students.**

The members raised objection to the use of words 'Department' in the letter written by the President Sports as there is no such Department. It was suggested that this nomenclature be not used in future. The modified proposal of the President Sports was accepted and it was decided to formalise the courses on Physical Education and include the grades obtained by students in their respective semester examinations.

It was also decided that the Scheme and Syllabi relating to Physical Fitness courses would be routed through the BOS of that Department to which the President Sports belongs. In the present case this will be routed through the BOS of the Department of Mechanical Engineering as Dr. Sudhir Saxena, President Sports belongs to the Department of Mechanical Engineering.

3. **Any Other Item:**

Under any other item the issue relating to the subject matter of Provisional Degree Certificate was discussed and it was decided to modify the same. The date being mentioned on the Provisional degree Certificate would eventually be the date on which the student has completed the requirements of B.Tech. Degree Course.

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

Dean(Academic) 13/2/07

B. Tech Ist Semester (Common to all Branches)
Physical Education & Sports (Practical) – 1
PES – 110

L	P	Total
0	1.5	1.5

Max. Marks - 100
Sessional - 40
Examination - 60
Exam. Duration – 3 hrs.
Credit - 1

Practice in

General Warming up, specific warming for particular game, coaching of concerned games (fundamentals, rules and regulations of the game), practice of the games.

Details of Sports and Games :

Athletics: 100 m, 400m, 1500m, 10000m race & 110m Hurdles race.
Broad Jump and High Jump.
Shot put & Javelin Throw.

Games: Football, Cricket, Volleyball, Kabaddi, Badminton, Table Tennis.

Participation of Teams in different games in the following tournaments.

1. Inter Class Tournaments.
2. All India Inter University
3. North Zone Inter Engg. (Deemed Universities).
4. All India Professional Colleges Tournament.

By Delivering Lecturer: -

1. Concept of Physical Education and its relationship with Engineering Education.
2. Factors influencing, health & physical fitness, sources of fitness.

19/10/07

Director of Sports
National Institute of Technology
KURUKSHETRA

B. Tech 2nd Semester (Common to all Branches)
Physical Education & Sports (Practical) – II
PES – 211

L	P	Total
0	1.5	1.5

Max. Marks - 100
Sessional - 40
Examination - 60
Exam. Duration – 3 hrs.
Credit - 1

Practice in

General Warming up, specific warming for particular game, coaching of concerned games (fundamentals, rules and regulations of the game), practice of the games

Details of Sports and Games:

Athletics: 200m, 800m, 5000m Race & 400m Hurdle Race, Relay Race.
Triple Jump, Pole Vault.
Hammer Throw, Discus Throw.

Games: Hockey, Korfball, Lawn Tennis, Yoga & Chess.

Participation of teams in different games in the following tournaments:

1. Inter Class Tournaments.
2. All India Inter University.
3. Inter Engg. Deemed University.
4. All India NITs
5. State/ District Tournament

14/11/07
Dr. Director Sports
National Instt. ...
KURUKSHETRA

NATIONAL INSTITUTE OF TECHNOLOGY
(DEEMED UNIVERSITY)
Kurukshetra -136119

Minutes of the 5th meeting of Standing Committee on Senate Affairs held on 5th June, 2007 at 11:00 AM in the Board Room of the Institute.

The following were present:

1. Dr. M. N. Bandyopadhyay, Director
2. Prof. R. K. Bansal, Dean (Academic)
3. Dr. S. K. Sharma, Dean (E, EM & C)
4. Dr. V. K. Sehgal, Chairman, Civil Engg. Deptt.
5. Dr. K. S. Kasana, Chairman, Mech. Engg. Deptt.
6. Dr. S. K. Chakravarti, Chairman, Physics Deptt.
7. Dr. D. V. Singh, Chairman, Mathematics Deptt.
8. Dr. R. C. Bhattacharjee, Chairman, BA Deptt.
9. Dr. K. S. Sandhu, Professor in Elect. Engg. Deptt. (in place of Chairman, EE Deptt.)
10. Dr. Baldev Setia, Professor Incharge (Acad. & Senate Affairs)
11. Dr. Brahmjit Singh, Chairman, Electronics & Comm. Engg. Deptt.
12. Dr. Rajendra Deshwal, Chairman, Hum. & S. S. Deptt.
13. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
14. Dr. Mayank Dave, Chairman, Computer Engg. Deptt.

The following decisions were taken:

1. ***To discuss the Ph.D. case of Mrs. Manjula Sharma, Asstt. Professor, Department of Humanities & Social Sciences.***

The case of Ph.D. Registration of Mrs. Manjula Sharma, Asstt. Professor, Department of Humanities & Social Sciences was discussed at length. All issues commencing from her first application on Dec. 21, 2004, minutes of BOS of Humanities & Social Sciences dated 8.4.2005, her academic qualifications, new situation arising out of the increase in age of superannuation to 65 years were discussed in details. The members were of the opinion that she be allowed to register herself for Ph.D. Degree at NIT, Kurukshetra.

Contd...2)

4. ***To consider the request of students regarding change in the factor 9 for conversion of CGPA to percentage of marks in B. Tech. Degree course.***

The Institute rules provided for the system of generating CGPA. In order to compute the percentage of marks, CGPA obtained by a student is to be multiplied by the factor 9.

The students graduating during the Session May/June, 2007 and those entering B.Tech. final year have requested that this factor 9 be converted to 10.

The matter was discussed and some method suggested. However anticipating some pitfalls, it was decided to transfer the task to the Committee (headed by Dr. Krishna Gopal, Dean (P&D) for reviewing the B.Tech. scheme.

3. ***Any other item:***

(i) Dr. Chakarvarti raised the issue of delay in evaluation of Ph.D. thesis.

It was decided that to evolve the mechanism in which the perspective examiner was required to give his/her willingness within 4 weeks for evaluating the thesis. In case the willingness to evaluate the thesis was not received within 4 weeks, the Chairman, Senate is empowered to replace the examiner from the then list of examiner approved by BOS.

(ii) Dr. K.S. Kasana, Chairman, Mechanical Engg. Deptt. suggested that the course of Mechtronics (Course No.MET - 413) be shifted to the **Departmental Electives** from the existing list of **Open Electives** in the 7th Semester of B.Tech students. This proposal was approved and implemented w.e.f. July 2007 session.

(iii) The members also discussed that 95 dialing facility be provided on the telephone of all the Chairmen of the teaching deptt. Director assured that after discussing the same with Prof. in-charge (telephone) it will be decided.

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

(Baldev Setia)
Professor Incharge
(Acad. & Senate Affairs)

B.TECH. (7th SEMESTER) MECHANICAL ENGINEERING

M-443 MECHATRONICS

L	T	P/D	Cr
4	1	-	4.5

Introduction:
Definitions, trends, control systems, microprocessor / micro controller based controllers, PC based controllers, applications: SPM, robot, CNC machine, FMS, CIM, Sensors. (3 hrs)

Signal Conditioning:
Introduction, the operational amplifier, protection, filtering, Wheatstone bridge, digital signals, multiplexers, data acquisition, digital signal processing, pulse modulation. (3 hrs)

Precision Mechanical Actuation:
Pneumatic actuation systems, electro-pneumatic actuation systems, hydraulic actuation systems, electro-hydraulic actuation systems, mechanical systems, types of motion, kinematics, inverse kinematics, timing belts, ball screw and nut, linear motion guides, linear bearings, harmonic transmission, bearings, motor / drive selection (7 hrs)

Electronic Devices and Circuits:
Semiconductor devices, diodes and LEDS, zener diodes and voltage regulator, inductive kick, bandwidth, frequency & & response of a measurement system, bipolar transistor circuits, amplifiers. (5 hrs)

Electromechanical Drives:
Relays and solenoids, stepper motors, DC brushed and brushless motors, DC servo motors, AC / DC motors for two servo motion drives, braking methods, pulse width modulated, Bipolar driver, Mosfet drives, SCR drives, variable frequency drives.

(6 hrs)

Digital Electronics:
Digital logic, number systems, logic gates, Boolean algebra, Karnaugh maps, sequential logic, Control, microcomputer structure, microcontrollers, digital interfacing, analog interfacing, DAC, ADC, applications. (6 hrs)

Input / Output Systems:
Interfacing, input / output ports, interface requirements, peripheral interface adapters, serial communication interface, direct memory access. (2 hrs)

Control System:
System transfer function, Laplace transformation and its applications, continuous and discrete processes, proportional control, integral control, differential control, PID control, digital controllers, control system performance, controller tuning, adaptive control, frequency response, PLC, PMC, introduction to fuzzy logic and neural networks. (8 hrs)

Books Recommended:

1. Understanding Electro-Mechanical Engineering: An Introduction to Mechatronics by Kamm, Prentice-Hall of India.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

Dated: 13.6.2007

Minutes of the SCSA meeting held on 13.6.2007 at 8.30 PM in the Board Room.

The following were present:-

1. Dr. M N Bandyopadhyay — In Chair
2. Dr. Krishna Gopal, Dean(P&D)
3. Prof. R.K.Bansal, Dean(Acad.)
4. Dr. S.K.Sharma, Dean(E,C&M)
5. Dr. K.S.Kasana, Chairman, MED
6. Dr. V.K.Sehgal, Chairman, CED
7. Dr. A.Swaroop, Chairman, EED
8. Dr. T.K. Garg, Prof. MED
9. Dr. R.C. Bhattacharjee, Chairman, MBA Deptt.
10. Dr. Kuldeep Kumar, Controller of Examinations
11. Dr. Rajender Deswal, Chairman, Deptt. Of Hum & Social Sciences
12. Dr. Mayank Dave, Chairman, Comp. Engg. Deptt.
13. Dr. Umesh Ghanekar, Chairman, ECE Deptt.
14. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
15. Dr. Baldev Setia, Prof. Incharge, Acad. Affairs

The meeting had been convened to discuss the cases of issuing of Degree Certificates to the following students whose Degree Certificates could not be prepared at the time of their respective convocations.

Sr.No.	Roll No.	Name	Branch	Session
Bachelor of Technology				
1.	2K177	Praveen Kumar Gunda	Mechanical	June, 2004
2.	96299	Hanafee Imran	Electrical	June, 2003
3.	98160	Ajay Jobar	Mechanical	June, 2003
Bachelor of Engineering				
4.	298540	Ved Parkash	Electrical	Dec., 2002

The matter alongwith all the associated problems was discussed at length. The Degree Certificate formats of KUK and IITs were also placed before the members. The Committee observed as under:-

1. Non issuance of Degree Certificate to above students was an inadvertent mistake.
2. The switch over from RECK to NITK was also partially responsible for the lapses.

3. In future the Controller of Examinations should certify in writing to the Senate that no candidate due to be awarded a Degree on a convocation is left out.
4. It was suggested that a system of checks may be incorporated in the working of Examination Cell and its coordination with the Academic Section so that such pitfalls do not recur. For this it was decided to constitute a committee also opting external members which would study the system and suggest means and modes for smooth working of the two sections.
5. All results prior to final declaration must be formally approved by the Chairman, Senate.

The Committee approved the Award of Degrees to the above mentioned students. The Committee further decided that the Degree Certificates may be given on the date of 18th March, 2006 i.e. the 3rd Convocation of the Institute. The matter may be placed before the Senate for ratification.

June 13, 2007
Professor Incharge, (Academic Affairs)

NATIONAL INSTITUTE OF TECHNOLOGY
(DEEMED UNIVERSITY)
Kurukshetra -136119

Minutes of the 7th meeting of Standing Committee on Senate Affairs held on 27th June, 2007 at 3.00 PM in the Board Room of the Institute.

The following were present:

1. Dr. M. N. Bandyopadhyay, Director
2. Prof. R. K. Bansal, Dean (Academic)
3. Dr. S. K. Sharma, Dean (E, EM & C)
4. Dr. V. K. Sehgal, Chairman, Civil Engg. Deptt.
5. Dr. K. S. Kasana, Chairman, Mech. Engg. Deptt.
6. Dr. S. K. Chakravarti, Chairman, Physics Deptt.
7. Dr. D. V. Singh, Chairman, Mathematics Deptt.
8. Dr. Baldev Setia, Professor Incharge (Acad. & Senate Affairs)
9. Dr. Umesh Ghanekar, Acting Chairman, Electronics & Comm. Engg. Deptt
10. Dr. Rajendra Deshwal, Chairman, Hum. & S. S. Deptt.
11. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
12. Dr. A.K.Singh, Chairman, Acting Computer Engg. Deptt.
13. Sh. R.P.S. Lohchab, Registrar

The following decisions were taken:

1. **To approve Scheme and Syllabi of M. Tech. Nanotechnology 3rd and 4th Semester.**

The Scheme & Syllabi of M.Tech in Nano Technology 3rd & 4th Semester duly approved by the Departmental Board of Studies was placed before the Committee. The SCSA approved the Scheme & Syllabi with the modification to be incorporated in the Course No. PhNT-305 (Seminar) as two hours teaching per week and two credit points instead of the suggested teaching 1.5 hours per week and 8 credit points.

It was felt that there was a need to streamline the Schemes of various M.Tech. Courses in the Institute. A proposal to constitute a committee in this regard may be included as an agenda item in the next meeting of the Senate.

2. **To approve Scheme and Syllabi of B.Tech. (Information Technology) 3rd Semester**

The Scheme & Syllabi of B.Tech in Information Technology 3rd Semester duly approved by the Departmental Board of Studies was placed before the Committee. The following modifications/suggestions to be made and incorporated in the Scheme:

1. Name of the Course No. **HUT-201** was corrected to be **Organizational Behaviour** instead of Industrial Sociology.

2. The Distribution of contact hours for tutorials and practicals were to be presented in separate columns of the table.

The Department was requested to present the comprehensive scheme and syllabi of B.Tech. Information Technology in the next meeting of the Senate.

3. **To approve B. Tech. (Computer Engineering.) III Semester course "Programming Methodology & File Structures" Course under Code COT-201.**

The modifications in the Course No. COT-201, duly approved by the Departmental Board of Studies were presented by the Acting Chairman of the Department, Dr. A.K. Singh were approved.

4. **Any other item with the permission of the Chair**

i) The SCSA was apprised of the decision of the BOG regarding the number of candidates to be registered in a Department. Going by the spirit of the decision of the BOG, an item is to be reviewed by the Senate till such a time the existing regulations will be in force.

ii) Dr. S.K.Chakarvarti, Chairman, Physics Department raised an issue regarding Ph.D. Registration. The SCSA approved that the Department may be allowed to register afresh candidate for Ph.D. once in existing thesis as submitted i.e. a vacancy may be deemed to be existing after thesis has been submitted.

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

(Baldev Setia)
Professor Incharge
(Acad. & Senate Affairs)

Approved in 7th meeting of SCSA on 22.6.2007

M.TECH NANOTECHNOLOGY PROGRAMME

THIRD SEMESTER MTECH NANOTECHNOLOGY

Course No.	Title	Schedule of Teaching				Credit Points
		Lecturer	Tutorial	Practical	Total	
PhNT-303	Generic Methodologies for Nanotechnology	4	--	--	4	4
PhNT-305	Nanoscale Magnetic Materials and Devices	4	--	--	4	4
MNT-307	Nanotribology	4	--	--	4	4
	*Elective	4	--	--	4	4
PhNTP-303	Minor Project	--	--	--	8	12
PhNTS-305	Seminar	--	--	--	2	2
	Total	16	--	--	26	30

***Electives:**

PhNT-309: Inorganic Semiconductor Nanostructures (E)
CoNT-311: Computer Technology (E)
PhNT-313: Industrial Applications of Nano- sized Materials Nanostructures (E)

Weightage:

For Theory Courses : During Semester Evaluation Weightage = 40%
End Semester Examination Weightage = 60%

- Minor Project:1 (The project may be done in the Department or in collaboration with Industry/ National Lab/ Universities/ IITs or similar organizations.)

M.TECH. 3rd SEMESTER NANOTECHNOLOGY

GENERIC METHODOLOGIES FOR NANOTECHNOLOGY:PhNT-303

L	T
4	0

CREDITS	:4
END SEMESTER EXAM MARKS	:60
SESSIONAL MARKS	:40
EXAMINATION DURATION (HOURS)	:3

CLASSIFICATION AND FABRICATION:

Introduction and classification, classification of nanostructures; Nano-scale architectures; Electronic properties of atoms and solids- Giant molecular solids, crystalline solids; Electronic conduction; Effects of nanometer length scale- changes to the system total energy and system structure, Effect on properties; Fabrication methods- Top down processes, Bottom-up processes, Methods for templating the growth of nano-materials; Ordering of Nano-systems; Preparation, safety and storage issues.

CHARACTERIZATION:

General classification of characterization methods-Analytical and imaging techniques, Microscopy techniques-general considerations, Image magnification and resolution; Spectroscopy techniques; Surface analysis and depth profiling.

TECHNIQUES FOR PROPERTY MEASUREMENT:

Mechanical, Electron transport, Magnetic and Thermal properties.

REFERENCE BOOKS:

1. **Nanoscale Science and Technology**
   Robert Kelsall, Ian Hamley, and Mark Geoghegan (Editors)
   John-Wiley
2. **Nanomaterials:Synthesis,Properties and Applications**
   A.S.Edelstein and R.C.Cammarata(edits),Institute of Physics
3. **Nanostructures and Nanomaterials-Synthesis, Properties and Applications**
   Cao,Imperial College Press
4. **Nanotechnology-Basic Science and Emerging Technologies**
   Mick Wilson et al, Overseas Press

M.TECH. 3rd SEMESTER NANOTECHNOLOGY

NANOSCALE MAGNETIC MATERIALS AND DEVICES:PhNT-305

L	T		
4	0	CREDITS	:4
		END SEMESTER EXAM MARKS	:60
		SESSIONAL MARKS	:40
		EXAMINATION DURATION (HOURS)	:3

MAGNETISM

Magnetostatics; Para-,dia and ferromagnetism; Magnetic anisotropy; Domains and domain walls; Nanomagnetic materials-Particulate nanomagnets; Geometrical Magnets; Magnetoresistance- Giant Magneto Resistance(GMR); Spin Valves; Tunneling Magnetoresistance.

PROCESSING AND PROPERTIES OF NANOMATERIALS

Introduction; Classification; The thermodynamics and Kinetics of Phase Transformations; Synthesis Methods-Rapid Solidification Processing from the Liquid State, De-vitrification, Inert Gas Condensation, Electrodeposition and Mechanical Methods.

FERROMAGNETIC AND CATALYTIC PROPERTIES

Fundamental Magnetic Properties; Nanocomposite Soft Magnetic Materials; Hard Magnetic Materials; Effects of Particle size and Surface Chemistry on Magnetic Properties;Catalytic Properties

APPLICATIONS

Ultraviolet Absorbers; Magnetic Applications; Coatings; Nanomagnetism in Technology

REFERENCE BOOKS:

1. **Nanoscale Science and Technology**
   Robert Kelsall, Ian Hamley, and Mark Geoghegan (Editors)
   John-Wiley
2. **Nanomaterials:Synthesis,Properties and Applications**
   A.S.Edelstein and R.C.Cammarata(edits),Institute of Physics
3. **Nanostructures and Nanomaterials-Synthesis, Properties and Applications**
   Cao,Imperial College Press
4. **Nanotechnology-Basic Science and Emerging Technologies**
   Mick Wilson et al, Overseas Press

M.TECH. 3rd SEMESTER NANOTECHNOLOGY

NANOTRIBOLOGY:MNT-307

L	T
4	0

CREDITS	:4
END SEMESTER EXAM MARKS	:60
SESSIONAL MARKS	:40
EXAMINATION DURATION (HOURS)	:3

UNIT 1:

Definition, brief history and industrial significance of tribology. Surface texture and its measurement, statistical parameters for surface texture. Friction-brief review of theories of friction; Wear and its types; Measurement of wear; Bearings and its types

UNIT 2:

Measurement tools used in nanotribology : SFA, STM, AFM. Microscale and nanoscale wear; Nanofabrication/nanomachining; Nanohydrodyanamics

UNIT 3:

Lubrication; Full film lubrication; Mixed film lubrication; Boundary lubrication; Nanolubrication ; Tribological issues in MEMS; Challenges for lubrication in high speed MEMS

REFERENCE BOOKS:

1. **Nanotribology and Nanomechanics:An Introduction**
   Bharat Bhushan, Springer.
2. **Nanotribology**
   Hsu and Ying, Springer
3. **Engineering Tribology**
   Prasanta Sahoo, PHI
4. **Engineering Tribology**
   Stachowiak and Batchelor, Elsevier

M.TECH. 3rd SEMESTER NANOTECHNOLOGY

INORGANIC SEMICONDUCTOR NANOSTRUCTURES:PhNT-309

L	T
4	0

CREDITS	:4
END SEMESTER EXAM MARKS	:60
SESSIONAL MARKS	:40
EXAMINATION DURATION (HOURS)	:3

SEMICONDUCTOR PHYSICS:

Types of semiconductors; Doping in semiconductors; Optical and carrier transport properties; Phonons and excitons; Physical processes in semiconductors; Nanostructures-modulation doping, Quantum Hall effect; Resonant tunneling; Charging effects; Ballistic carrier transport; Light emission processes in nanostructures; The phonon bottleneck in quantum dots.

QUANTUM CONFINEMENT IN SEMICONDUCTOR NANOSTRUCTURES:

Quantum confinement in one dimension-Quantum wells; Quantum confinement in two-dimensions- Quantum wires; Quantum confinement in three-dimensions-Quantum dots; Super Lattices, Band off-sets.

FABRICATION AND CHARACTERIZATION TECHNIQUES:

Requirements for an ideal semiconductor nanostructure; The epitaxial growth of quantum wells; Lithography and etching; Cleaved-edge overgrowth, growth on vicinal substrates; Strain- induced dots and wires; Quantum well width fluctuations, thermally annealed quantum wells; Semiconductor nano-crystals; Colloidal quantum dots; Self-assembly techniques; Optical and Electrical characterization.

APPLICATIONS OF SEMICONDUCTOR NANOSTRUCTURES:

Injection lasers; Single photon sources; Optical memories; Coulomb blockade devices.

REFERENCE BOOKS:

1. **Nanoscale Science and Technology**
   Robert Kelsall, Ian Hamley, and Mark Geoghegan (Editors)
   John-Wiley
2. **Nanomaterials:Synthesis,Properties and Applications**
   A.S.Edelstein and R.C.Cammarata(edits),Institute of Physics
3. **Nanostructures and Nanomaterials-Synthesis, Properties and Applications**
   Cao,Imperial College Press
4. **Handbook of Nanostructured Materials and Nanotechnology Electrical Properties Vol.3 and 1**
   Hari Singh Nalwa
5. **Electron and Photon Confinement in Semiconductors**
   Antonio Quattraponi et al. IoS Press

FOURTH SEMESTER MTECH NANOTECHNOLOGY

Course No.	Title	Schedule of Teaching				Credit Points
		Lecturer	Tutorial	Practical	Total	
PhNTD-404	Dissertation/Thesis	–	–	–	–	24

- Two Seminars (One at the time of initial stage of progress and another before submission of the Dissertation

The examination in the subject of Dissertation is to be conducted jointly by two examiners, one of which will be the dissertation supervisor, and the other an external examiner.

The result of the examination in Dissertation shall be one of the followings-Approved, Approved with Distinction, Rejected.

B.Tech (Information Technology)
3rd Semester
Effective From 2007-08

Code	Paper	L	T	P	Total	Credits
IT-201	Digital Electronics	3	1	-	4	3.5
HUT-211	Organizational Behaviour	2	1	-	3	2.5
IT-203	Object Oriented Programming Using C++	3	1	-	4	3.5
IT-205	Data Structures	4	1	-	5	4.5
IT-207	Web Site Design	3	1	-	4	3.5
IT-209	Program Design and File Structures	3	1	-	4	3.5
IT-211	Digital Electronics (P)	-	-	2	2	1
IT-213	Object Oriented Programming Using C++ (P)	-	-	2	2	1
IT-215	Data Structures (P)	-	-	3	3	1.5
IT-217	Web Site Design (P)	-	-	2	2	1
IT-219	Program Design and File Structures (P)	-	-	2	2	1
	TOTAL	18	6	11	35	26.5

Digital Electronics
IT-201

L	T
3	1

Theory: 60
Sessional: 40

1. Number Systems and Codes

Introduction to positional number system, signed magnitude numbers, floating point numbers, binary arithmetic: addition, subtraction, multiplication and division, Base conversion, conversion formulas with examples, one's and two's compliment arithmetic, Computer codes – BCD codes, gray codes, excess-3 codes, parity checks, Hamming and alphanumeric codes.

2. Digital Logic Families

Qualitative introduction to digital ICs, TTL, Schottky TTL, ECL, MOS Logic, CMOS Logic, Tri-state logic: Characteristics and properties.

3. Combinational Logic Design

Introduction, standard representations for logical functions, Karnaugh map representation, simplification of logical functions using K-map, minimization of logical functions specified in minterms/maxterms or Truth Table,. minimization of logical functions not specified in minterms/maxterms, Don't care conditions, design examples, Ex-or and Ex-nor simplification of K-maps, five and six-variable K-maps, QM method, MEV method.

1. Combinational Logic Design using MSI circuits

Introduction, multiplexers and their use in combinational logic design, demultiplexers/decoders and their use in combinational logic design, adders and their use as subtractors, digital comparators, parity generators/checkers, code converters, priority encoders, 7-segment decoder/driver.

2. Synchronous Sequential Circuits

Introduction, FSM model, memory elements and their excitation functions. Synthesis of synchronous sequential circuits, capabilities and limitation of FSM, state equivalence and minimization, simplification of incompletely specified machines.

3. Asynchronous Sequential Circuits

Fundamental mode circuits synthesis, state assignment, pulse mode circuits.

4. A to D and D to A Converters

Introduction, Study of different types of analog to digital and digital to analog converters, their resolution, conversion time, sensitivity accuracy and other parameters. Study of some commercially available ADC and DAC chips.

BOOKS

1. R.P. Jain: Modern Digital Electronics, TMH.
2. Z Kohavi: Switching and Finite Automata Theory, TMH.
3. M.M. Mano: Digital Logic Design, PHI.

(Common to all branches, 3rd and 4th semesters of B.Tech.)

ORGANISATIONAL BEHAVIOUR

L	T
2	1

HUT-211

Theory : 75 Marks
Sessionals : 50 Marks
Total : 125 Marks
Time : 3 Hrs.

UNIT-I INTRODUCTION

Concept of Organisational Behaviour, Nature of Organisational Behaviour, Organisational Behaviour and other similar fields of study – Psychology, Sociology, Anthropology, Political Science. Approaches to Organisational Behaviour. Challenges and opportunities for Organisational Behaviour

UNIT-II UNDERSTANDING AND MANAGING INDIVIDUAL BEHAVIOUR

Concept of Behaviour, Process of Behaviour, Foundations of Individual Behaviour. Values, Attitudes and Job Satisfaction: Importance of values, Types of values. Concept of Attitudes, Theories of Attitude Formation, Factors in Attitude Formation. Attitude Management. Measuring Job Satisfaction, the effect of Job Satisfaction on Employee Performance.

UNIT-III UNDERSTANDING PERSONALITY AND PERCEPTION

Personality

What is Personality? Personality Theories, Determinants of Personality, Personality Traits affecting Behaviour.

Perception

Concept of Perception, Perceptual Process, Factors influencing Perception.

Learning

Concept of Learning, Components of Learning Process, Factors affecting Learning.

UNIT-IV UNDERSTANDING AND MANAGING GROUP BEHAVIOUR

Group Dynamics

Concept of Group Dynamics, Concept of Group, Formal and Informal Groups, Group Behaviour.

Communication

Concept of Communication, The Communication Process, Barriers in Communication, Essentials of Effective Communication

Leadership

Meaning of Leadership, Leadership Theories-Charismatic Leadership Theory, Trait Theory, Behavioural Theory.

UNIT-V UNDERSTANDING AND MANAGING ORGANISATIONAL SYSTEM

Design of Organisation Structure

Concept of Organisation Structure, forms of Organisation Structure, Contingent Factors in Organisational Design.

Organisational Culture

What is Organisational Culture? What do Cultures Do? Creating and Sustaining Culture.

Work Stress

What is Stress? Course of Stress, Effects of Stress, Managing Stress.

Organisational Change

Nature of Organisational Change, Factors of Organisational Change, Planned Change, Process of Planned Change, Resistance to Change, Overcoming Resistance to Change.

UNIT-VI

Motivation

Concept of Motivation, Motivation and Behaviour, Theories of Motivation-Maslow's Need Hierarchy Theory, Herzberg's Motivation-Hygiene Theory, McGrejor's Theory X and Theory Y.

Note for the Paper Setter : The total number of questions to be set will be six, one question on each unit. The examinees shall attempt any four. All questions shall carry equal marks.

Suggested Books

1. Organisational Behaviour – Stephen P. Robbins (Pearson Education)
2. Organisational Behaviour – Jit S. Chandan (Vikas Publishing House Pvt. Ltd.)
3. Management Process and Organisational Behaviour – L.M. Prasad (Sultan Chand & Sons, New Delhi)

Object Oriented Programming using C++
IT-203

L	T
3	1

Theory: 60
Sessional: 40

1. Object Oriented Programming and Design

Review of Abstraction, Objects and other basics, Encapsulation, Information hiding, Method, Signature, Classes and Instances, Polymorphism, Inheritance, Exceptions and Exception Handling with reference to object modeling, Coupling and Cohesion in object oriented software. Object Oriented Design – Process, Exploration and Analysis. Detailed Study of object oriented design with reference to interactive graphics editor. Object Oriented Software Engineering.

2. C++ Programming Basics

Fundamentals: Variables and assignments, Input and Output, Data Types and Expressions, Flow of control, Subprograms: Top down design, Predefined functions, Programmer defined functions, Procedural abstractions, Local variables, Overloading function names, Operator overloading, Parameter passing, this pointer, Destructors, Copy constructors, Overloading the assignment operator, Virtual functions, Function Calling functions, Friend functions, Recursive function, Recursive member function.

3. C++ Object Oriented Concepts

Objects and Classes: Use of file for I/O, Formatting output with stream functions, Character I/O, Inheritance, Structures for diverse data, Structures as function arguments, Initializing structures, Defining classes and member functions, Public and private members, Constructors for initializations, Standard C++ classes, Derived classes, Flow of Control, Use of Boolean expressions, Multiway branches, Use and design of loops.

4. C++ Data Structures and Advanced Topics

Arrays – Programming with arrays, arrays of classes, arrays as function arguments, Strings, Multidimensional arrays, Arrays of strings, Pointers, Dynamic arrays, Classes and dynamic arrays, Base classes, access control, Templates – generic classes and functions, namespaces.

BOOKS

1. Herb Schildt: C++ - The Complete Reference, TMH, Delhi
2. Horstmann: Computing Concepts with C++ Essentials, John Wiley.
3. Mastering C++, K.R. Venugopal, TMH, New Delhi

Data Structures
IT-205

L	T		
4	1	Theory:	60
		Sessional:	40

Note: All implementations in C language.

1. Introduction:
Introduction: Internal representation, integers, floating point numbers, packed decimal, characters, data types and data object, fundamentals of pointers in C, pointer declaration, passing pointer to functions, pointers and 1-d arrays, dynamic memory allocation, operation on pointers, pointers and 2-d arrays; Files and related operations in C.

2. Searching and Sorting Techniques
Efficiency of algorithms in terms of time and storage requirements, O-notation, Searching techniques: Linear and Binary, Sorting techniques: Selection, Bubble, Insertion, Mergesort, Quicksort and Radix sort

3. Simple Data Structures
Arrays: axiomatic definition of array, representation of array in storage, address mapping function, access table method of storage of arrays, sparse arrays, manipulation transpose, addition multiplication of sparse matrices, examples for application of stacks, expression evaluation, mazing problem, sequential allocation for stacks and queues; multiple stacks and queues.

4. Linked Data Structures
Linked Lists; definition, allocation for stacks and queues. Examples of linked lists, polynomial addition, comparison of sequential and linked allocation of storage; inversion, concatenation & copying of the lists.
Doubly Linked List: Definition of circular and doubly linked list, header node, insertion and deletion, sparse matrix, representation using doubly linked lists. Examples for application of doubly linked lists; dynamic storage management; node structures, routines for allocation and deallocation, generalized lists and recursive algorithms for copying and comparison of lists.

5. Advanced Data Structures
Trees, Basic concepts and definitions of a tree and binary tree and associated terminology, examples of tree structures. Binary trees traversal, Binary tree representation of trees, transformation of trees into binary trees, some more operations on binary trees. Graphs: Representation of graphs and their traverseral.

BOOKS

1. E Horowitz and S. Sahni: Fundamentals of Data Structures, Galgotia, 1999
2. R.B. Patel: Expert Data Structures in C, Khanna Publishers, 2001.
3. R.L. Kruse: Data Structures & Program Design in C, PHI.
4. D.F. Knuth: The art of Computer Programming Vol 1, Narosa Publications, 1985.
5. Byron S. Gottfried : Theory and Problems of Programming with C Language, Schaum Series, TMH, 1998.

Web Site Design
IT-207

L	T		
3	1	Theory:	60
		Sessional:	40

1. Information Architecture
The Role of the Information Architect, Collaboration and Communication, Organizing Information, Organizational Challenges, Organizing Web Sites and Intranets, Creating Cohesive Organization Systems Designing Navigation Systems, Types of Navigation Systems, Integrated Navigation Elements, Remote Navigation Elements, Designing Elegant Navigation Systems, Searching Systems, Searching your Web Site, Designing the Search Interface, Indexing the Right Stuff, To Search or Not To Search, Grouping Content, Conceptual Design, High-Level Architecture Blueprints, Architectural Page Mockups, Design Sketches.

2. Dynamic HTML and Web Designing
HTML Basic Concepts, Good Web Design, Process of Web Publishing, Phases of Web Site development, Structure of HTML documents, HTML Elements – Core attributes, Language attributes, Core Events, Block Level Events, Text Level Events, Linking Basics, Linking in HTML, Images and Anchors, Anchor Attributes, Image Maps, Semantic Linking Meta Information, Image Preliminaries, Image Download Issues, Images as Buttons, Introduction to Layout: Backgrounds, Colors and Text, Fonts, Layout with Tables. Advanced Layout: Frames and Layers, HTML and other media types. Audio Support in Browsers, Video Support, Other binary Formats. Style Sheets, Positioning with Style sheets. Basic Interactivity and HTML: FORMS, Form Control, New and emerging Form Elements.

3. CGI using PERL
Introduction to CGI, Alternative Technologies, The Hypertext Transport Protocol, URLs, HTTP, Browser Requests, Server Responses, Proxies, Content Negotiation, The Common Gateway Interface, The CGI Environment, Environment Variables, CGI Output, Forms and CGI, Sending Data to the Server, Form Tags, Decoding Form Input, Architectural Guidelines, Coding Guidelines, Efficiency and Optimization.

4. Java Server Pages
Basics, Integrating Scripts in JSPs, JSP Objects and Components, configuring and troubleshooting, JSP: Request and response objects, Retrieving the contents of a an HTML form, Retrieving a Query String, Working with Beans, Cookies, Creating and Reading Cookies. Using Application Objects and Events.

5. XML
Relationship between HTML, SGML and XML, Basic XML, Valid Documents, Ways to use XML, XML for Data Files, Embedding XML into HTML documents, Converting XML to HTML for DISPLAY, Displaying XML using CSS and XSL, Rewriting HTML as XML, The future of XML.

BOOKS

1. Thomas A Powell, HTML The Complete Reference, Tata McGraw Hill Publications.
2. Scott Guelich, Shishir Gundavaram, Gunther Birznick; CGI Programming with Perl 2/e, O'Reilly
3. Doug Tidwell, James Snell, Pavel Kulchenko; Programming Web Services with SOAP, O' Reilly
4. Pardi, XML in Action, Web Technology, PHI.
5. Yong, XML Step by Step, PHI.
6. Aaron Weiss, Rebecca Taply, Kim Daniels, Steven Mulder, Jeff Kaneshki, Web Authoring Desk Reference, Techmedia Publications.

Program Design & File Structures
IT-209

L	T
3	1

Theory: 60
Sessional: 40

1. Introduction to File Systems
Characteristics and working of magnetic tapes, magnetic disks, optical disks; File organizations, file operations, file systems, file directories, device control, channel and buffer management, Sequential File Organization – Creating, retrieving and updating sequential files & their performance; merging – natural, balanced, polyphase, cascade and their performance; relative file organization – definition, addressing techniques, problem of collision and its solutions, performance; indexed sequential file organization – definition, application, implementation strategies; multi-key file organization – multi-key access, inverted file organization, multi-list file organization.

2. File Organizations & Indexes
cost model, comparison of 3 file organizations, overview & properties of indexes; Tree-structured Indexes- ISAM, B+ trees: format & operations, B+ trees in practice; Hash based Indexing- static hashing, extendible hashing, linear hashing, comparisons; Using B+ trees for sorting.

BOOKS

1. M.E. Loomis: Data Management and File Structures, 2nd Ed. PHI, 1997.
2. R Ramkrishnan, J. Geharke, "Data Base Management Systems", 2nd Ed, TMH, 2000.

Digital Electronics (P)
IT-211

L	T	P
-	-	2

Practical: 40
Sessional: 60

List of Practical

1. To study and verify the truth table of various logic gates (NOT, AND, OR, NAND, NOR, EX-OR, & EX-NOR).
2. To design and verify a half and full adder circuits.
3. To design a 4 bit adder/subtract using IC 7483.
4. To design and implement a 4:1 multiplexer.
5. To design and implement a 1:4 demultiplexer.
6. Verify the truth table of a 4-bit comparator using IC 7485.
7. To design and verify a 2:4 decoder.
8. To design and implement a 2:4 encoder.
9. To verify the operation of a D and JK flip-flop using ICs 7474 AND 7473.
10. To design and verify the operation of RS, T, D, and JK flip-flops using logic gates.
11. To verify the operation of a Mod-10 counter.
12. To design and implement the operation of a Mod-16 counter using JK flip-flops
13. To design and implement a Mod-10 counter using JK flip flops and logic gates.
14. To verify the operation of a 4 bit shift register using IC 7495.
15. To design and verify the operation of a 4-bit shift left register using D flip-flops.
16. To design and verify the operation of a 4-bit shift right register using D flip-flop.

Object Oriented Programming using C++ (P)
IT-213

L	T	P		
-	-	2	Practical:	40
			Sessional:	60

List of Practical

1. (a) Model a geometric point to find distance between two points.
   (b) Model complex numbers and their operations.

2. Describe a class called TOLL- BOOTH with the following data items
   unsigned int - to hold the number of cars passing through the booth,
   double - to hold the total amount collected.
   Include the following member functions:
   * a constructor that sets both the data fields to zero.
   *PAYINGCAR( ) that increases the numbers of cars by one and increase the total amount by 2.50.
   *NOPAYING( ) that increases the number of cars but keeps the total amount unchanged.
   *DISPLAY( ) that displays both the total number of cars passing and the total number of amount collected.

   Write main( ) to test the class thoroughly.

3. Create a class rational which represents a numerical value by two double values- NUMERATOR and DENOMIATOR . Include the following public member functions:
   * constructor with no arguments (default)
   * constructor with two arguments.
   * void reduce () that reduces the rational number by eliminating the highest common factor between the numerator and denominator.
   * overload + operator to add two rational numbers.
   * overload >> operator to enable input through cin.
   * overload << operator to enable output through cout.

   Write a main () to test all the functions in the class .

4. Consider the following class definition
   ```
   class father {
           protected : int age;

    public;
           father (int x){age =x;}
           virtual void iam()
           {cout <<"I AM THE FATHER, my age is :"<<age<<endl;}
    };
   ```

Derive the two classes son and daughter from the above class and for each, define iam() to write out similar but appropriate messages. You should also define suitable constructors for these classes.
Now, write a main () that creates objects of the three classes and then calls iam() for them. Declare pointer to father. Successively, assign addresses of objects of the two derived classes to this pointer and in each case, call iam() through the pointer to demonstrate polymorphism in action.

5. A thermostat is a device that keeps a system at a constants temperature. It behaves like a temperature gauge that is capable of getting the current temperature from the system. It is also a switch that can be turned "on" and "off". The thermostat monitors the temp. in the following manner :

if the current temp. falls below 95% of the required temp., it turns itself "on". On the other hand , if the current temp. exceeds 1.05 of the required temp. ,it turns itself "off" .In all other cases ,its on-off status remain un changed.

Implement classes for temp. gauge and switch(named switch) with suitable data and member functions. The temp. gauge class must have a member function get_temp() that will pretend to get the current temp. of the system by actually reading it from the keyboard.

Now, implement thermostat class in both the following ways:

a) Develop a class called thermostat that include objects of temp. gauge and switch as its member (aggregation).

b) Develop a class called thermostat that inherits the data functions of temp. gauge and switch(multiple inheritance).

Write main ( ) to test all the features of above-mentioned classes.

6. Write a program that creates a binary file by reading the data for the students from the terminal. The data of each student consist of roll no., name (a string of 30 or lesser no. of characters) and marks.

7. Using the file created in problem 6, write a program to display the roll no. and names of the students who have passed (has obtained 50 or more).

8. You are to create a file containing n records. Each record relates to a historical event and the year in which the event took place

Some examples are:
India Wins Freedom 1947
Amartya Sen Gets Nobel 1998
First World War Begins 1914.
The data should be read from terminal while creating the file.

9. A hospital wants to create a database regarding its indoor patients. The information to store include

(a) Name of the patient
(b) Date of admission
(c) Disease
(d) Date of discharge

Data Structures (P)
IT-215

L	T	P		
-	-	3	Practical:	40
			Sessional:	60

List of Practical

1. Define two strings as arrays. Read them using %s. Using pointers, concatenate them without using string.h.
2. Define a pointer to an integer; read a list of n numbers using dynamic memory allocation and find average of these numbers.
3. Create a file containing 26 alphabets(A to Z) in separate lines.
4. Copy a file to another. Source file name and destination file name are input from the user.
5. Write a program for binary search (successful and unsuccessful both).
6. Sort n numbers using quick/merge/selection sort. Also count the number of exchanges in each case.
7. Write a program for expression evaluation using stacks.
8. Write a program for infix to postfix conversion.
9. Create a singly linked list and reverse it in the same list.
10. Write a program for a doubly linked list giving following option, insertion, deletion, retrieval,
11. Write a program to implement queues using linked list with option; list of elements in queue, insertion, and deletion.
12. Write a program to implement stacks using linked list with options push and pop.
13. Write a program for multiplication of two polynomials using linked list.
14. Write a program to implement binary trees. Depending on the choice, inorder/ preorder/ postorder traversal is done.
15. Implement heap sort. Show the contents of heap after each adjustment of element i.e. n outputs should be printed if list has n elements.

Create a structure to store the date (year, month and date as its members). Create a base class to store the above information. The member function should include functions to enter information and display a list of all the patients in the databases. Create a derived class to store the age of the patients. List the information about all the pediatric patients (less than twelve years in age).

10. Define a class to store the time at a point. The data members should include hr., min., and sec. to store hours, minutes and seconds. The member functions should include functions for reading the time and displaying the same. Add a friend function to add two times. Write a program, using the above declaration, to read two times and add them.

11. Write a program to read two matrices and find their product. Use operator overloading so that the statement for multiplying the matrices may be written as $Z = X * Y$ where X, Y and Z are matrices.

12. Write a program to read a number and display its square, square root, cube and cube root. Use a virtual function to display any one of the above.

13. Make a class **Employee** with a name and salary. Make a class **Manager** inherit from **Employee**. Add an instance variable, named department, of type String. Supply a method to **toString** that prints the manager's name, department and salary. Make a class **Executive** inherit from **Manager**. Supply a method **toString** that prints the string **"Executive"** followed by the information stored in the **Manager** superclass object. Supply a test program that tests these classes and functions.

14. Write a superclass **Worker** and subclass **HourlyWorker** and **SalariedWorker**. Every worker has a name and a salary rate. Write a method **computePay(int hours)** that computes the weekly pay for every worker. An hourly worker gets paid the hourly wage for the actual number of hours worked, if **hours** is at most 40. If the hourly worker worked more than 40 hours, the excess is paid at time and a half. The salaried worker gets paid the hourly wage for 40 hours, no matter what the actual number of hours is. Write a static method that uses polymorphism to compute the pay of any **Worker.** Supply a test program that tests these classes and functions.

Web Site Design (P)
IT-217

L	T	P
-	-	2

Practical: 40
Sessional: 60

List of Practical

1. Chalk out the storyboard and design of Dairy Food Limited. As the name reflects your site provides dairy products and aims at opening an online store. Your storyboard should cover all the features that you plan to have on the site.
2. Create your own page with your favorite hobbies.
3. Create a Menu or a Table of content web page. Each menu item or section of the table of content should load a different web page. For example, if the user clicks on Menu one or section 1 then the link should take him to respective menu html. Or section and so on.
4. Create a web site for your College,
5. Create a frameset that is divided into three sections. The frameset should have three zones.
   - the topmost section of the frameset should take up about just 15% of the browser window. Name this frame title.
   - The middle section should be 70% of the browser window. Name this frame title.
   - The lower most sections should also be about 15% of the browser window. Name this section as menu. Create pages for each section. For the lowermost section, create page that loads the content into the middle section. The topmost section should contain a page describing the web page itself.
6. Create a web page, which displays the map of your Country Link, each city/state on the image using image map, such that the respective HTML page of the city/state is displayed when the user selects an area.
7. Add the tickertape applet to your page by customizing it for the following settings:
   - Increase the count by one.
   - Accordingly update the message count.
   - Change the text color to (237,192,171)
   - Experiment with changing the scrolling speed.
   - Customize the message text as per your page requirement.
8. Incorporate a guest book into the Dairy Food Webpage and use Java Script to build validations into the form.
9. Use Style sheet to modify the following:
   - Change background to modify the following.
   - Change font, type, face and color.
   - Align Text.
   - Remove underlines from hyperlinks.
10. Use any Web Server to set up your website.

Program Design and File Structures (P)
IT-219

L	T	P
-	-	2

Practical: 40
Sessional: 60

Note: Implement following programs in C language.

1. Modular program development of a simple text based calculator.
2. Modify above design to develop scientific calculator.
3. Computation of $^{n}C_{m}$ using Recursion.
4. Generate Fibonacci series using recursion.
5. Implement natural merge and polyphase merge.
6. Implement a GUI/Mouse driven simple calculator.

Programming Methodology and File Structures
COT-201

L	T	P		
3	1	-	Theory:	60
			Sessional:	40

1. Introduction to File Systems

Characteristics and working of magnetic tapes, magnetic disks, optical disks; File organizations, file operations, file systems, file directories, device control, channel and buffer management, Sequential File Organization – Creating, retrieving and updating sequential files & their performance; merging – natural, balanced, polyphase, cascade and their performance; relative file organization – definition, addressing techniques, problem of collision and its solutions, performance; indexed sequential file organization – definition, application, implementation strategies; multi-key file organization – multi-key access, inverted file organization, multi-list file organization.

2. File Organizations & Indexes

Cost model, comparison of 3 file organizations, overview & properties of indexes; Tree-structured Indexes- ISAM, B+ trees: format & operations, B+ trees in practice; Hash based Indexing- static hashing, extendible hashing, linear hashing, comparisons; Using B+ trees for sorting.

BOOKS

1. M.E. Loomis: Data Management and File Structures, 2nd Ed. PHI. 1997.
2. R Ramkrishnan, J. Gehsarke, "Data Base Management Systems", 2nd Ed, TMH, 2000.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

Minutes of 8th meeting of Standing Committee on Senate Affairs held on 16.7.2007 at 8.30 AM in the Board Room.

The following members were present:-

1. Dr. M.N.Bandyopadhyay, Director — In Chair
2. Dr. Krishna Gopal, Dean(P&D)
3. Prof. R.K.Bansal, Dean(Academic)
4. Dr. S.K. Sharma, Dean(E,C & M)
5. Dr. A. Swaroop, Chairman, Elect Engg. Deptt.
6. Dr. V.K.Sehgal, Chairman, Civil Engg. Deptt.
7. Dr. K.S.Kasana, Chairman, Mech. Engg. Deptt.
8. Dr. S.K. Chakarvarti, Chairman, Physics Deptt.
9. Dr. D.V.Singh, Chairman, Maths. Deptt.
10. Dr. R.C.Bhattacharjee, Chairman, Deptt. Of Business Administration
11. Dr. Rajender Deswal, Chairman, Deptt. of Hum. & Social Sciences
12. Dr. B.J. Singh, Chairman, ECCE Deptt.
13. Dr. Mayank Dave, Chairman, Computer Engg. Deptt.
14. Dr. Baldev Setia, Professor Incharge, Acad.Affairs
15. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
16. Sh. R.P.S. Lohchab, Registrar
17. Dr. N.K. Gupta, President, Clubs
18. Dr. Sudhir Saxena, President Sports
19. Prof. G.L.Pahuja, Professor Incharge, Literati
20. Prof. R.S. Bhatia, Special Invitee
21. Prof. J.S. Lather, Special Invitee

The following decisions were taken:-

1. **To decide the Academic Calendar for the year 2007-2008.**

   The Academic Calender for the Academic Year 2007-2008 was discussed. Certain modifications were suggested and incorporated. The revised Academic Calender is enclosed with the minutes.

2. **To apprise the members about the introduction of MCA Course in the Institute.**

   Prof. R.S.Bhatia and Prof. J.S. Lather, Special Invitees were requested to present the information regarding MCA Course. The members were apprised that the course is 'a self financing course' on the pattern of MBA Course

already in progress in the Institute. The due approval for introduction of the course had been obtained from the AICTE and the MHRD. The Scheme and Syllabus of the course including qualification at the entry level was placed before the members and discussed. In view of the qualifications proposed and accepted it was suggested that a course on Applied Mathematics be introduced as a bridge course. The scheme and syllabus for the first semester of the course was approved with some modifications as regards the credits assigned to a course. The remaining scheme and syllabus were to be presented in the next meeting of the Senate. The members were also apprised that the classes for MCA would commence from 20th August, 2007.

Any other item

1. Prof. R.C. Bhattacharjee, Chairman, Department of Business Administration apprised the members that the MBA students had proceeded on 8-weeks training commencing w.e.f. 24th May, 2007. In light of this it was proposed that the Registration of the MBA 3rd Semester students may be carried on 25th & 26th July, 2007 without any late fees.
2. In order to maintain parity in M.Tech. admissions certain frequently encountered situations were discussed and decisions taken.
3. As regards the sponsored candidates for M.Tech., it was decided that if sufficient number of sponsored candidates are not available, the seats may be filled up from the open category candidates. However the No. of GATE scholarships will remain the same.
4. It was also felt in the meeting that it would be better if the M.Tech. admissions are conducted by 30th of June of every calendar year based upon valid GATE score and B.Tech/B.E. 7th Sem. result.

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

24.07.07

Professor Incharge
Academic Affairs & Senate

SCHEME AND SYLLABI
MASTER OF COMPUTER APPLICATIONS
NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA
(2007-08)

SEMESTER – I

SUBJECT CODE	COURSE TITLE	LECTURE hrs	LAB hrs	CREDITS
MCA-101	Computer Programming	4	0	4
MCA-103	Computer Organization and Architecture	4	0	4
MCA-105	Discrete Mathematics	4	0	4
MCA-107	Microprocessors	4	0	4
MCA-109	File Structures	4	0	4
MCA-111	Computer Programming Lab	0	3	1.5
MCA-113	Microprocessors Lab	0	3	1.5
			Total Credits	23

MCA - 1 SEMESTER

MCA-101 COMPUTER PROGRAMMING

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

Programming and problem solving: Basics of Computer organisation, High level and low level languages, Steps involved in computer programming, Developing algorithms and flow charts,

C data types, C operators, Expressions, Order and Precedence of evaluation, Statements in C.

Control Statements, Functions, Arrays, Pre-processor Directives.

Pointers, Pointers and Arrays, String Handling, Functions and pointers, Dynamic Memory Allocation.

User defined data types – Structures and Unions, Bit Fields, Array of Structures, Structures with arrays.

Command line arguments, Input-output operations, File Handling.

Suggested References

1. The C Programming Language, Second Edition, Brian W. Kernighan and Dennis M. Ritchie, PHI, New Delhi.
2. C++ The Complete Reference, Herbert Schildt, Tata McGrawHill, 2005.
3. Programming with C, Gottfried & J.K. Chhabra, Schaum's Series, McGraw Hill.
4. E. Balagurusamy, Programming in ANSI C, 2004, McGrawHill, New Delhi

MCA - 1 SEMESTER

MCA 103 COMPUTER ORGANIZATION AND ARCHITECTURE

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

Introduction to number system, Boolean Algebra, Fundamentals of Digital Circuits– Combinational and Sequential, Multiplexers, Flip flops, Registers and Counters.

Arithmetic and Logic Unit, Instruction Sets, Types of operands and operations, Addressing modes, Register Organization, Simple ALU design, Instruction cycle and pipelining.

Memory Classification: Memory Organization, Associative, Cache and Virtual memory.

Peripheral Devices, Data Transfer Techniques- Programmed I/O, Interrupt Driven and DMA, I/O Processors, Asynchronous Data transfer.

Introduction to Advanced computer architecture, RISC v/s CISC, Multiprocessing and multiprocessors, Parallel Processors.

Suggested References

1. Computer System Architecture (Third Edition) Morris Mano – Prentice Hall
2. Computer architecture and Organization (third edition) John P.Hayes – TMH

MCA - 1 SEMESTER

MCA-105 DISCRETE MATHEMATICS

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

Sets and Propositions
Introduction, Combination of sets, Finite and Infinite sets, Uncountably Infinite Sets, Mathematical Induction, Principle of Inclusion and Exclusion, Multisets, Properties of Binary Relations, Equivalence Relations and Partitions, Partial Ordering Relations, Functions and Pigeonhole Principle, Propositions.

Algebraic System
Definitions and elementary properties of algebraic structures, Semigroups, monoids and submonoids, Groups and subgroups, Homomorphisms and Isomorphisms of Monoids and Groups, Definition and Examples of Rings and Subrings, Types of Rings, Commutative Ring, Ring with Unity, Ring with or without Zero divisions, Integral Domain, Division Ring, Relation of Isomorphism in the set of rings, Field, its characteristics and subfield.

Graphs and Planar Graphs
Introduction, Basic Terminology, Multigraphs and Weighted Graphs, Paths and Circuits, Shortest Paths in Weighted Graphs, Eulerian Paths and Circuits, Hamiltonian Paths and Circuits, Planar Graphs, Trees, Rooted Trees, Path Lengths in Rooted Trees, Binary Search Trees, Spanning Trees and Cut-sets, Minimum Spanning Trees.

Permutations, Combinations and Recurrence Relations
The Rules of Sum and Product, Permutations, Combinations, Generation of Permutations and Combinations, Recurrence Relations, Linear Recurrence Relations with Constant Coefficients, Homogeneous Solutions, Particular Solutions, Total Solutions, Solution by the Method of Generating Functions.

Suggested References

1. C.L. Liu; Elements of Discrete Mathematics
2. Kenneth Kalmanson: An Introduction to Discrete Mathematics and its Applications, Addison Wesley Publishing Co., 1986.
3. J.P. Tremblay: Discrete Mathematical Structures with Applications to Computer Science, McGraw Hill, N.Y., 1977.

MCA - 1 SEMESTER

MCA 107 MICROPROCESSOR

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

8085 Microprocessors
Microprocessors and Microcomputers, 8085 Microprocessor Architecture, Timing and Control unit, Machine cycles, Interrupts.

Programming 8085 Microprocessor: Addressing modes, instruction set, assembly language programming, programs for multibyte addition/subtraction, multiplication, division, block transfer. Stacks and subroutines, Interrupts, Counters and time delays. Details of interfacing devices 8255 and 8253, Interfacing with A/D and D/A converters,

8086 Microprocessors
Salient features of x86 architecture, Addressing modes and basic operations.

Suggested References

1. R. Gaonkar, "The 8085 Microprocessor" PHI
2. Liu and Gibson, Microcomputer Systems: 8086/8088 family: Architecture, Programming and Design, PHI.
3. D. V. Hall, "Microprocessors and Interfacing", 1997 TMH

MCA - 1 SEMESTER

MCA 109 FILE STRUCTURES

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

File Processing Operations: Physical and Logical files, Opening, reading & writing and closing files in C, seeking and special characters in files, Physical devices and logical files, file related header files in C.

Secondary Storage : Disks – Organization, tracks, sectors, blocks, capacity, non-data overhead, cost of a disk access, Magnetic tape, disk vs tape, CDROM – CDROM as a file structure, Physical Organization, strengths and weakness of CD-ROMS, Storage hierarchy.

Byte Journey and Buffer Management: File Manager, IO Buffer, IO Processing, Buffer strategies and bottlenecks.

File Structure concepts: A stream file, field structures, reading a stream of fields, record structures and that uses a length indicator, Mixed numbers and characters – use of a hex dump, reading the variable length records from the file.

Managing records in C files: Retrieving records by keys, seqoential search, direct access, choosing a record structure and record length, header records, file access and file Organization.

Organizing files for performance: Data compression, reclaiming space – record deletion and storage compaction, deleting fixed – length records for reclaiming space dynamically, deleting variable – length records, space fragmentation and replacement strategies.

Indexing: Index, a Simple index with an entry sequenced file, basic operations on an index, entry sequenced file, indexes that are too large to hold in memory, indexing to provide access by multiple keys, retrieval using combination of secondary keys, improving the secondary index structure – inverted lists

Index Sequential files : Access and prefix B+ trees – Simple index to the sequence set, the content of the index : separators instead of keys, the simple prefix B+ tree, simple prefix B+ tree maintenance, index set block size, internal set block size, the internal structural of index set blocks : a variable order B-tree, loading a simple prefix B+ tree.

Hashing: Collisions in hashing, a simple hashing algorithm, function and record distributions, memory requirements, collision resolution by progressive overflow, buckets, deletion, Extendable hashing: Working of extendable hashing, implantation, deletion, extendable hashing performance

Suggested References

1. File Structures – An Object Oriented Approach with C, Michael J Folk, Bill Zoellick and Greg Riccardi , Addision Wesley
2. M.E. Loomis: Data Management and File Structures, 2nd Ed. PHI. 1997.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

Dated:

Minutes of the 9th SCSA meeting held on 18th July, 2007 at 4.30 PM in the Board Room of the Institute:-

The following were present:-

1. Dr. M.N.Bandyopadhyay, Director — In Chair
2. Dr. Krishna Gopal, Dean(P&D)
3. Prof. R.K.Bansal, Dean(Academic)
4. Dr. S.K. Sharma, Dean(E,C & EM)
5. Dr. A. Swaroop, Chairman, Elect Engg. Deptt.
6. Dr. V.K.Sehgal, Chairman, Civil Engg. Deptt.
7. Dr. K.S.Kasana, Chairman, Mech. Engg. Deptt.
8. Dr. S.K. Chakarvarti, Chairman, Physics Deptt.
9. Dr. D.V.Singh, Chairman, Maths. Deptt.
10. Dr. R.C.Bhattacharjee, Chairman, Deptt. Of Business Administration
11. Dr. Rajender Deswal, Chairman, Deptt. of Hum. & Social Sciences
12. Dr. B.J. Singh, Chairman, ECCE Deptt.
13. Dr. Mayank Dave, Chairman, Computer Engg. Deptt.
14. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
15. Dr. Baldev Setia, Professor Incharge, Acad.Affairs

1. **The meeting had been convened to consider the cases of two M.Tech. candidates (from sponsored category candidates) in the specialization of Transportation Engineering.**

The applications of two candidates from the State PWD were considered and discussed. The candidates wanted to be admitted in Transportation Engg. Dr. V.K.Sehgal, Chairman, CED also raised the issue of paucity of faculty in the relevant specialization. In light of all this, it was decided to admit the candidates in M.Tech. Transportation Engineering subject to the condition that they would produce 'No Objection Certificate' from their

employers alongwith 'the kind of leave due' to them for atleast one semester. Further it was also decided that they would commence their classes alongwith M.Tech. 3rd Semester Transportation Engg. students already in progress.

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

13.09.07

(Baldev Setia)
Professor Incharge,
Academic Affairs & Senate

NATIONAL INSTITUTE OF TECHNOLOGY
Kurukshetra -136119

Dated:

Minutes of the 10th SCSA meeting held on 18th August, 2007 at 4.30 PM in the Board Room of the Institute:-

The following were present:

1.	Dr. M. N. Bandyopadhyay, Director	In Chair
2.	Prof. R. K. Bansal, Dean (Academic)	
3.	Dr. S.P. Jain, Dean (P&D)	
4.	Dr. S. K. Sharma, Dean (E, C & EM)	
5.	Dr. A. Swaroop, Chairman, Elect Engg. Deptt.	
6.	Dr. V. K. Sehgal, Chairman, Civil Engg. Deptt.	
7.	Dr. K. S. Kasana, Chairman, Mech. Engg. Deptt.	
8.	Dr. S. K. Chakravarti, Chairman, Physics Deptt.	
9.	Dr. D. V. Singh, Chairman, Mathematics Deptt.	
10.	Dr. R. C. Bhattacharjee, Chairman, Deptt. of Business Administration	
11.	Dr. Rajender Deswal, Chairman, Deptt. of Hum. & Social Sciences	
12.	Dr. B.J. Singh, Chairman, Electronics & Comm. Engg. Deptt.	
13.	Dr. Mayank Dave, Chairman, Computer Engg. Deptt.	
14.	Dr. Dinesh Kumar, Chairman, Chemistry Deptt.	
15.	Dr. R.S. Bhatia, Chairman, MCA Deptt.	
16.	Dr. Baldev Setia, Professor Incharge, Acad. Affairs	
17.	Sh. R.P.S. Lochab, Registrar	
18.	Dr. J.K. Chhabra, Asst. Professor, Computer Engg. Deptt.	

1. The meeting had been convened in the light of a letter written by Dr. J.K.Chhabra, Asstt. Professor, Computer Engg. Deptt to the Director regarding teaching of course No. EC-692. Dr. J.K. Chhabra and Dr. S.K. Chakarvarti expressed their opinions and logics which had led to the present situation regarding teaching of course no. EC-692. Basically the problem had arisen because of non compliance of academic procedures at various stages. Therefore, as a one time measure in order to resolve the problem, M.Tech. Nano-Technology students will be offered EC-692 course and this course will be taught by the Computer Engg. Deptt for this semester only. From next year onwards, the code of the Course No. CoNT-311/EC-692 will be changed to PhNT-311/PHI-692 respectively as the Computer Engg. Department will not be able to teach the above courses to M.Tech Instrumentation and Nano-Technology.

2. **Any Other Item:**

1. Dr. A.Swaroop, Chairman, Elect. Engg. Deptt. raised the issue of fellowship to Ph.D. Scholars. It was decided to expedite the matter as early as possible. Academic Section was also directed to make effort regarding payment of contingency grant to part-time Ph.D. Scholars.
2. Dr. Mayank Dave placed before the SCSA the course of COT-480 'SECURITY AND CRYPTOGRAPHY' which was being taught to the students and the same was approved by the SCSA.
3. Dr. V.K. Sehgal suggested in view of the increasing of number of M.Tech. Schemes, a Committee should be formed which would rationalize the scheme for all the M.Tech. Courses.
4. The issue of 2nd counseling for M.Tech. admissions on 24th August, 2007 also came up for discussion. It was decided to modify the Institute website notification on M.Tech. 2nd counseling to include 'fresh applications' as well.

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

12.09.07
Professor In-charge,
Academic Affairs & Senate

Security and Cryptography
COT-479

L	T		
3	1	Theory:	50
		Seasionals:	50

1. Traditional Cryptography
Cryptoanalysis, substitution and transposition ciphers, Cryptographic principles, secret-key algorithms: DES, DES chaining, Breaking DES, IDEA, Differential and Linear cryptoanalysis Public-key algorithms: RSA, Knapsack

2. Authentication protocols
KDC protocol, shared secret key, Diffie-Hellman key exchange, Needham-Schroeder protocol, using Kerberos, interlock protocol, digital signatures – secret key and public key signatures, DSS, message digest, MD5 and secure hash algorithms

3. Computer Security Mechanisms
Role of different security mechanisms, passwords – technology and administration, principles of database system security, epidemic of viruses: types of viruses, study of different virus codes, means of spread, prevention from virus, life cycle of a virus, immunization, Trojan horse and bombs with examples, writing antivirus/trojan codes.

4. Network Security
Basics, security functions, preventing loss and damage, securing local area network – authorization, security plan and policy, securing enterprise network – setting priorities, security plans, securing network components, hardware security, levels of access control and authorization.

BOOKS

1. Richard H. Baker, Network Security, McGraw Hill International Ed.1996
2. B. Schneier, Applied Cryptography, John Wiley New York, 1996.
3. C. Kaufman et. al, Network Security, Prentice Hall International, 1998.

NATIONAL INSTITUTE OF TECHNOLOGY
(DEEMED UNIVERSITY)
KURUKSHETRA-136 119

No. Acad./2007/SCSA 11th mtg./ Dated: 18.9.2007

Minutes of the 11th SCSA meeting held on 17.9.2007 at 4.30 PM in the Board Room of the Institute

The following members were present during the meeting:

1. Dr. M.N Bandyopadhyay, Director
2. Prof. R.K Bansal, Dean (Academic)
3. Dr. S.K Sharma, Dean (E, C & EM)
4. Dr. S.P Jain, Dean (P&D)
5. Dr. T.K Garg, Professor, Mech. Engg. Deptt.
6. Dr. A Swarup, Chairman, Electrical Engg. Deptt.
7. Dr. V.K Sehgal, Chairman, Civil Engg. Deptt.
8. Dr. K.S Kasana, Chairman, Mech. Engg. Deptt.
9. Dr. S.K Chakarvarti, Chairman, Physics Deptt.
10. Dr. D.V Singh, Chairman, Maths. Deptt.
11. Dr. R.C Bhattacharjee, Chairman, Deptt. of Business Administration
12. Dr. Rajender Deswal, Chairman, Deptt. of Hum. & Social Sciences
13. Dr. B.J Singh, Chairman, ECCE Deptt.
14. Dr. Mayank Dave, Chairman, Computer Engg. Deptt.
15. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
16. Mr. RPS Lobchab, Registrar
17. Dr. Arun Goel, Deputy Professor I/C Academic Affairs
18. Dr. Baldev Setia, Professor I/C Academic Affairs

1. To consider providing an additional chance to B.Tech students for impro of sessionals.

   The agenda had cropped up because of an application not having been examined by the Academic Office and the Dean (Academic) having accorded permission to the same for appearing in the Ist mid semester examination. The matter was discussed and it was decided to ratify the decision taken by the Dean as one time measure. It was also decided that henceforth the Director may be empowered to allow such and similar cases on merit of the case and after due recommendations of the Chairman of the Department.

2. Any other item with the permission of the Chair.

   The following points of interest were raised by certain members and the decisions

as under were recorded:

(i) Details and possibilities of Fullbright Scholarship may be obtained/explored by the Academic Section

(ii) AICTE should be approached for allowing project funding for NIT, Kurukshetra

(iii) Attendance record of students may be obtained from respective teachers on regular intervals (3 times in a semester) and the notification regarding advice/warning/status of attendance be issued by Academic Section.

27.09.07

(Baldev Setia)
Professor Incharge, Acad. Affairs & Senate

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

Dated: 5.11.2007

Minutes of the 12th SCSA meeting held on 16th October, 2007 at 5.00 PM in the Board Room of the Institute:-

The following were present:-

1. Dr. M.N.Bandyopadhyay, Director — In Chair
2. Mr. R.P.S Lohchab, Registrar — Member-Secretary, Senate
3. Dr. S.P Jain, Dean(P&D)
4. Prof. R.K.Barisal, Dean(Academic)
5. Dr. S.K. Sharma, Dean(E,C & EM)
6. Dr. T.K Garg, Professor, Mech. Engg. Deptt.
7. Dr. A. Swarup, Chairman, Elect Engg. Deptt.
8. Dr. V.K.Sehgal, Chairman, Civil Engg. Deptt.
9. Dr. K.S.Kasana, Chairman, Mech. Engg. Deptt.
10. Dr. S.K. Chakarvarti, Chairman, Physics Deptt.
11. Dr. D.V.Singh, Chairman, Maths. Deptt.
12. Dr. K.B Singh, Acting Chairman, Deptt. of Hum. & Social Sciences
13. Dr. B.J. Singh, Chairman, ECCE Deptt.
14. Dr.A.K Singh, Acting Chairman, Computer Engg. Deptt.
15. Dr. Dinesh Kumar, Chairman, Chemistry Deptt.
16. Dr. Baldev Setia, Professor Incharge, Acad.Affairs & Senate

1. To consider appointment of Dr. V.P Wani as Ph.D Co-Supervisor.

The issue of eligibility of Ph.D Thesis Supervisor/Co-Supervisor was discussed in detail in the light of the existing Ph.D Ordinance & Regulations. Finally, it was decided to take the issue of eligibility as Ph.D Supervisor for the consideration of the Hon'ble Senate.

05.11.07

(Baldev Setia)
Professor Incharge (Acad. Affairs & Senate)

Item 10.7 To note the admission status of various UG/PG Courses for the Academic Session 2007-2008 in the Institute.

From the session 2007-08 onwards the Institute has seven B. Tech. degree courses and 17 Post-graduate courses besides the degree leading to Doctor of Philosophy (Ph.D.) The admission/registration of students for the session 2007-08 is as follows:

A. Under Graduate (B.Tech.)

Sr.No.	Name of Course	Admissions
1.	Civil Engineering	91
2.	Computer Engineering	66
3.	Electrical Engineering	90
4.	Electronics & Communication Engg.	97
5.	Industrial Engg. & Management	56
6.	Information Technology	60
7.	Mechanical Engineering	91
	Total	**551**

Numbers include DASA & MEA category students also.

The Admission status of all PG Courses is given below:-

B. Post Graduate (M.Tech./MBA/MCA)

Sr. No.	Department	Name of Course	Admissions
1.	**Civil Engg.**	Soil Mechanics & Foundation Engg.	02
		Structural Engg.	10
		Transportation Engg.	02
2.	**Electrical Engg.**	Control System	13
		Power System	14
		Power Electronics & Drives	14
3.	**Electronics Engg.**	Electronics & Communication Engg.	18
		VLSI	18
4.	**Mechanical Engg.**	Mechanical Engg.	14
		CAD/CAM	14
		Robotics & Automation	16
5.	**Physics**	Instrumentation	16
		Nano-Technology	17
6.	**Business Admn.**	Master Business Administration	60
7.	**Computer Applications**	Master of Computer Applications	60
	Total		**288**

C. Ph. D (Registration as on 15.11.2007)

Sr. No.	Name of Departments	No. Registrations
1.	Chemistry	13
2.	Civil Engg.	17
3.	Computer Engineering	09
4.	Electrical Engg.	28
5.	Electronics & Comm. Engg.	08
6.	Humanities & Social Science	08
7.	Mathematics	13
8.	Mechanical Engg.	57
9.	Physics	13
	Total	**166**

Full-time = 14
Part-time = 152

This is for the kind information and record of the Senate.

Item 10.8 To consider the report submitted by the Committee constituted by the Senate regarding consolidation of the information to be enshrined in the Ordinance of Studies for the Degree of Doctor of Philosophy (Ph.D.) of the Institute (Ref. Items 5.17, 7.7 and 8.3).

The item was originally placed for discussion in the 5th meeting of the Senate vide item No. 5.17. After deliberations, a committee of the following was constituted to look into the finer points of the items and propose the appropriate recommendations:

1. Dr. S.P. Jain	Chairman
2. Dr. K.S. Kasana	Member
3. Dr. S.K. Chakarvarti	Member

A number of meetings were held to discuss the issue. During the meetings Dr. Baldev Setia, Professor In-charge (Academic Affairs & Senate) was included as a special invitee.

The report submitted by the committee (separate annexure) was placed before the Senate in its 8th meeting held 20.11.2006 vide item no. 8.3. But the Senate deferred the item for consideration in its next meeting. The item is now being placed before the Senate.

The report will engulf in its domain all cases relating to Ph.D. registration etc so far. Reference 12th SCSA meting held on 16.10.2007, the eligibility/qualifications of Ph.D. Supervisor/Co-supervisor will also be dealt with in the same report.

The Senate may kindly consider, discuss and approve the recommendations.

Item 10.9 Regarding decisions taken in the Board of Studies of Department of Civil Engg.

I To consider the reframing of course numbers of M.Tech. (Civil) Environmental Engineering.

The Board of Studies of the Department of Civil Engineering in its meeting held on 11.11.2006 reframed the existing course numbers of M.Tech. (Civil) in the specialization of Environmental Engineering in continuity with the existing course numbers of other M.Tech. specializations of Civil Engineering. Copy of the Scheme with the revised course numbers is enclosed as Appendix 10.9 from page 71 to 72.

II To consider rearranging of certain M.Tech. Courses and Course numbers.

In the same meeting of BOS, certain courses and course numbers were rearranged keeping in view the faculty strength, current requirements of the courses etc. The affected changes are as follows:

(i) CET-668 Ground Improvement Engineering of M.Tech. (Soil) is to be included as Elective in the Scheme of M.Tech. (Transportation) in place of the existing Course CET-721 with the same title.

(ii) CET-643 Design of Bridges offered to M.Tech. (Structures) to be included as elective in M.Tech. (Transportation) replacing CET-715 Bridge Engineering.

(iii) CET-741 Environmental Impact Assessment offered to M.Tech. (Environmental) to be included as elective in all M.Tech. disciplines.

(iv) CET-644 Soil-Structure Interaction offered to M.Tech. (Structures) to be included as elective in M.Tech. (Soil) also.

(v) CET-663 Foundation Engg. offered to M.Tech. (Soil) to be included as Elective in M.Tech. (Structural Engg.)

(vi) CET-692 Pavement Analysis and Design of M. Tech. (Transportation) is to be included as Elective in the Scheme of M.Tech. (Structures) and M.Tech. (Soil) in place of the existing Course CET-682 Pavement Design offered by M.Tech. (Soil.)

III To consider modifications in the syllabi of existing B.Tech. Courses in Civil Engineering.

In the meeting of BOS of Civil Engg. held on 23.04.2007, certain courses were modified/reorganized in the Scheme of B.Tech. (Civil Engg.). The modifications as approved in the BOS are proposed for the consideration of the Senate as Appendix 10.9 from page 73 to 79.

The Senate may kindly consider and approve the above items.

SCHEME OF M. TECH. (CIVIL) ENVIRONMENTAL ENGINEERING

Sr. No.	Course No.	Subject	Credits	Teaching Schedule				Examination Schedule				Duration of Exam (Hrs.)
		SEMESTER-I		L	T	P/D	Total	Theory	Sessional	Pract/ Viva	Total	
1	CET 731	Environmental Chemistry and Microbiology	-	4	1	-	5	100	50	-	150	3
2	CET 733	Water and Wastewater Treatment Processes	-	4	1	-	5	100	50	-	150	3
3	CET 735	Advance Water Supply and Wastewater Management	-	4	1	-	5	100	50	-	150	3
4		Elective-I	-	4	1	-	5	100	50	-	150	3
5	CET 737	Special Lab. Assignment-I	-	-	-	3	3	-	50	25	75	3
6	CET 739	Seminar	-	-	1	-	1	-	50	-	50	-
				16	5	3	24	400	300	25	725	-
		SEMESTER-II										
1	CET 732	Design of Water Treatment Processes	-	4	1	-	5	100	50	-	150	3
2	CET 734	Air Pollution and Control	-	4	1	-	5	100	50	-	150	3
3	CET 736	Solid Waste Management	-	4	1	-	5	100	50	-	150	3
4		Elective-II	-	4	1	-	5	100	50	-	150	3
5		Elective-III	-	4	1	-	5	100	50	-	150	3
				20	5	-	25	500	250	-	750	-
		SEMESTER-III										
1	CET 741	Environmental Impact Assessment	-	4	1	-	5	100	50	-	150	3
2	CET 743	Industrial Waste Management	-	4	1	-	5	100	50	-	150	3
3	CET 745	Design of Wastewater Treatment Processes	-	4	1	-	5	100	50	-	150	3
4		Elective-IV	-	4	1	-	5	100	50	-	150	3
5	CET 747	Special Lab. Assignment-II	-	-	-	3	3	-	50	25	75	3
6	CET 749	Seminar-II	-	-	1	-	1	-	50	-	50	-
			-	16	5	3	24	400	300	25	725	-
		SEMESTER-IV										
1		Dissertation	-	-	-	-	-	-	-	-	-	-
		Grand Total	-	-	-	-	-	1300	850	50	2200	
		* Electives will be selected from the list of electives given on the next page.										

LIST OF ELECTIVES

1.	CET 738	Geographic Information System (GIS) in Environmental Engineering
2.	CET 740	Environmental Planning and Management
3.	CET 742	Surface Water Quality Modeling and Control
4.	CET 744	Water Quality Management
5.	CET 746	Hazardous Waste Management
6.	CET 748	Life Cycle Analysis and Design for Environment
7.	CET 750	Advance Wastewater Treatment
8.	CET 751	Bioremediation: Principles and Application
9.	CET 752	Air Quality Modeling
10.	CET 753	Environmental Risk Assessment
11.	CET 754	Advanced Computational Methods and Optimization
12.	CET 755	Groundwater Flow and Pollution Modeling

Annexure - I

Changes in B.Tech. (Civil Engineering) Scheme (proposed & approved by BOS)

S.No.	Subject	Existing	Proposed & approved
1.	Computer Applications	B.Tech. 6th Semester CET-318 L T P -- -- 3 Course credits-1.5	B.Tech. 6th Semester CET-318 Com. Applications L T P Course credits- 1.0 -- -- 2 **CET-320 Seminar** -- -- 1 Course credits- 0.5
2.	Department Electives - I	B.Tech. 7th Semester CET-413, 415,417	B.Tech. 7th Semester CET-413, 415, 417 **Additional Courses** **CET-439** Rural water supply & sanitation **CET-441** River mechanics & flood control
3.	Project - I	B.Tech. 7th Semester CET-427, 429, 431	B.Tech. 7th Semester CET-427, 429, 431 **Additional Courses** **CET-435** Water resources Engg. **CET-437** Structural Engg.
4.	Department Electives - II	B.Tech. 8th Semester CET-410, 412	B.Tech. 8th Semester CET-410, 412 **Additional Courses** **CET-442** Geosynthetics Engg. **CET-444** Transport planning **CET-446** Introduction to finite element method **CET-448** Advanced Engg. Geology
5.	Project - II	B.Tech. 8th Semester CET-426, 428	B.Tech. 8th Semester CET-426, 428 **Additional Courses** **CET-436** Geotechnical Engg. **CET-438** Environmental Engg. **CET-440** Transportation Engg.

B. Tech. 7th Semester (Civil) (Departmental Elective-I)
CET-439 RURAL WATER SUPPLY AND SANITATION

L	T	P/D	Total	Course Credits-3.5
3	1	-	4	

Rural Water Supply: Importance of safe water supply, per capita water requirement, basic considerations for development and implementation of rural water supply programmes, national drinking water mission, Various sources of water supply: lakes, ponds, springs, rivers, wells, infiltration galleries, national rural drinking water quality monitoring and surveillance programme, Types of wells: open wells, drilled wells, driven wells, sanitary aspects in construction and development of wells, selection of pumps, necessity of water treatment, Water treatment units: plain sedimentation, filtration, chlorination, specific treatment units for removal of iron, fluoride, and arsenic, operation and maintenance of rural water supply schemes.

Rural Sanitation and Health: Importance of safe excreta disposal, conservancy system of sanitation, various types of privies: pit privy, bore hole privy, water seal latrines, water carriage methods of excreta disposal, Septic tank: design, construction and operation, various methods of septic tank effluent disposal, low cost sewage treatment methods: oxidation ponds, constructed wet lands, Biogas plants: Design, construction and operation, Vector Borne Diseases: Fly as disease carrier, fly control measures: protection of foods, prevention of breeding, destruction of adults flies, mosquito borne diseases, mosquito as a disease carrier, principles of malaria control, mosquito control: sanitary measures, control against aquatic and adult stages, physical, chemical, naturalistic and biological control methods.

B. Tech. 7th Semester (Civil) (Departmental Elective-I)
CET-441 RIVER MECHANICS & FLOOD CONTROL

L	T	P/D	Total	Course Credits-3.5
3	1	-	4	

1. **Introduction:**
Indian rivers, flood, flood problems, river morphology, behaviour of river flow, role of sediments in rivers, changes in regimes, river gauging, causes of flood and losses, alleviation of flooding.

2. **Hydrologic Statistics:**
Probabilistic treatment of hydrologic data, frequency & probability functions, statistical parameters, fitting a probability distribution, probability distribution fort hydraulic variables.

3. **Flood Mitigation by River Protection:**
Basis of river engineering, flow types, resistance flow , energy slope, backwater effect, three dimensional flow, circular and helicoidal flow, river improvement works, river survey, protection by embankment, discharge capacity, design of dyke, stability analysis of dykes, bank protection, bank recession, types of bank protection works, channel improvement, cutoffs diversion, bypass channel, cutoff channel, floord ways, flood plain zoning, spreading grounds.

4. **Flood Mitigation by Reservoirs:**
Design factors, storage capacity determinations, sequent peak algorithom method, live stoorage, ripple mass curve flood routing, flood storage, dead storage, reservoir classification, reservoir sedimentation, distribution of sediments in reservoirs, measurement of sediment yields, sediment load measurement, Mood's method, life of reservoir, reservoir operation based on annual storage and regulation, single and multi purpose reservoirs, gate operation schedule, maximum and minimum flow operation, multi purpose reservoir operation, reservoir economics-cost benefit ratios, optimisation of benefits.

5. **Flood Forecasting & Warning:**
Basic data, communication network, forecasting techniques and procedures, forecast of rainfall, runoff from rainfall, forecasting stages, peak travel time, forecast reporting flood warning, engineering methods for flood fighting

6. **Engineering Economics of Flood Control:**
Estimation of flood damages, estimation of benefits of flood control, cost benefit analysis of flood control project.

Books:

1 Flood Control & Drainage Engg. by S.N.Ghosh.
2 Hydrology & Flood Control Engg. by S.K.Garg.
3 Hydrology & Water Resources Engg. by K.C.Patra.

B. Tech. 8th Semester (Civil) (Departmental Elective-II)
CET-442 GEOSYNTHETICS ENGINEERING

L	T	P	Total	Course credits-4.0
3	2	-	5	

1. **Basic Description of Geosynthetics:**
Historical Development, The Nomenclature, Function, Use Around The World, Applications, Development in India.
2. **Raw Materials – Their Durability And Ageing:**
Raw Materials, Durability, Degrading Agencies, Polymers, Biological Resistance, Chemical Resistance, Weathering Resistance.
3. **Manufacturing Methods:**
Fibres, Yarn, Nonwoven Geotextiles, Woven geotextiles, D.S.F. Fabrics.
4. **Geogrids – Testing And Evaluation:**
Factors Influencing Testing, Sampling, Physical Properties, Mechanical Properties under Uniaxial loading, Creep Testing.
5. **Erosion Control With Geogrids:**
Wind Erosion, Rain Water Erosion, Erosion Control Measures, Placement of Geogrid.
6. **Bearing Capacity Improvement With Geogrids:**
Advantages, Mechanism, Modes of Failure, Friction Coefficient, Experimental Studies.
7. **Application of Geosynthetics in Water Resources Projects:**
Case Studies: Dharoidam, Hiran II Dam, Medn Creek Irrigation Scheme, Lining of Kakrapar Canal.

Books Recommended:

1. Designing with Geosynthetics, (Prentice-Hall)
Robert M. Koerner
2. Engineering With Geosynthetics, (Tata McGraw-Hill)
G.V. Rao & G.V.S. Raju

B. Tech. 8th Semester (Civil) (Departmental Elective-II)
CET-444 TRANSPORT PLANNING

L	T	P/D	Total
3	2	-	5

Course credits-4.0

1. **TRANSPORT PLANNING PROCESS**
Status of transportation in India. Objectives and scope of transport planning.Urban, regional and national transport planning. Transport planning process, various stages. Land use and traffic.

2. **TRANSPORTATION SURVEY**
Definition of study area. Zoning. Types of surveys. O-D surveys. Inventories of existing transport facilities, land use and economic activities.

3. **TRIP GENERATION**
Trip purpose. Factors affecting trip generation. Trip generation estimation by multiple linear regression analysis, brief review of category analysis, advantages and limitations of these methods.

4. **TRIP DISTRIBUTION**
Methods of trip distribution. Basic concepts of uniform factor method, average factor method and opportunity model. Trip distribution by gravity model.

5. **TRAFFIC ASSIGNMENT**
Principles of assignment. Assignment techniques. All or nothing assignment. Brief review of multipath assignment, capacity restraint assignment and diversion curves.

6. **MODAL SPLIT**
General considerations for modal split. Factors affecting modal split. Brief introduction to various methods of modal split.

7. **EVALUATION**
Need for evaluation. Several plans to be formulated. Testing. Considerations in evaluation. Economic evaluation, basic principles, brief introduction to various methods of economic evaluation, comparison.

8. **MASS RAPID TRANSIT SYSTEMS**
Problems of Urban Transport, Introduction to MRTS. Requirements of MRTS. Types of MRTS. MRTS in India

Books:

(i) Traffic Engg. And Transport Planning *by* L.R.Kadiyali, Khanna Publishers, Delhi.
(ii) Highway Engg *by* S.K.Khanna & C.E.G. Justo, Nem Chand Bros., Roorkee.
(iii) Introduction to Transport Planning *by* Bruton, M.J., Hutchinson Technical Education, London.

B. Tech. 8th Semester (Civil) (Departmental Elective-II)
CET-446 INTRODUCTION TO FINITE ELEMENT METHOD

L	T	P/D	Total
3	2	-	5

Course credits-4.0

1. **Introduction:**
Field conditions, boundary conditions, functional approximation, finite differences method, development of finite element method.

2. **Element Properties:**
Displacement models, relation between the nodal degrees of freedom and generalized coordinates, convergence requirements, natural co-ordinate systems, shape functions, element strains and stresses, development of element stiffness, matrix and equivalent nodal loads, static condensation.

3. **Isoparametric Elements:**
Isoparametric, super-parametric and sub-parametric elements, computation of stiffness matrix of isoparametric elements, convergence criteria for isoparametric elements, numerical integration technique using Gauss Quadrature.

4. **One Dimensional Element:**
Truss element, analysis of plane truss problem, Hermitian beam element, beam on elastic foundation, solution of beam problem.

5. **Plane Stress and Plane Strain Analysis:**
Triangular elements, rectangular elements, isoparametric elements, patch test, axisymmetric solid element.

6. **Plane Bending Analysis:**
Displacement functions, plate bending elements, reduced integration, stress smoothing technique.

7. **Conduction Heat Transfer:**
Formulation of finite element method for heat conduction, various weighted residual techniques, one dimensional heat conduction, two dimensional conduction heat transfer.

8. **Direct Stiffness Method of Analysis and Solution Technique:**
Assemblage of elements, direct stiffness method, boundary conditions and reactions, Gauss elimination and matrix decompsition.

9. **Finite Element Analysis Software:**
Pre-and Post-processors finite element analysis software, error estimates and adaptive meshing.

Books:

a. Krishnamurthy, C.S.,'Finite Element Analysis-Theory and Programming', TMH Pub.N.Delhi.

b. Cook, R.D.,Malkus,D.S. and Plesha,M.E.,'Concept and Applications of Finite Element Analysis', John Wiley & Sons, New York.

c. Desai, C.S. and Abel,J.F.,'Introduction to the Finite Element Method', Affiliated East-West Press Pvt.Ltd.N.Delhi.

d. Manicka Selvam,V.K.,'Finite Element Primer', Dhanpat Rai Pub.,N.Delhi.

B.Tech 8th Semester (Civil)
ADVANCED ENGINNERING GEOLOGY
Course No. CET-448 (Departmental Elective-II)

L	T	P
3	2	–

Course credits-4.0

Geomorphology and Geology around us, Environmental Geology.

Engineering properties of rock moss and mineral composition.

Crustal deformation and it's relations to engineering behavior of rock masses.

Site Investigations and writing of geological report.

Engineering Geology in Dams and Tunneling.

Dynamic Earth & Geological Hazards, Mass Movement and Mass Wasting.

BOOKS:

1. Introduction of Physical Geology by A. Holmes.
2. Principles of Engineering Geology by KVGK Gokhale.
3. foundation of Engineering Geology by Tony Waltham

Item 10.10 Regarding decisions taken in the Board of Studies of Department of Mechanical Engg.

I To consider re-naming of the three specializations of M.Tech.

The Board of Studies of the Department of Mechanical Engg. in its meeting held on 17.10.2007, approved that the three specializations leading to the Degree of Master of Technology be renamed as follows:

(i) Master of Technology (Mechanical Engineering) CAD/CAM.

(ii) Master of Technology (Mechanical Engineering) Thermal Engineering.

(iii) Master of Technology (Mechanical Engineering) Machine Design.

II To consider change of course no. of the subject of Probability and Statistics (IEM-213) B.Tech. 3rd Semester.

In the same meeting of the BOS, it was also decided to change the Course no. of the subject of Probability and Statistics from the existing IEM-213 to MAT-201 (Mathematics-III) as the course was being taught by the Mathematics Department. The Chairman Mathematics Department had also made an observation in this regard.

The Senate may kindly consider and approve the above item.

Item 10.11: Regarding Department and Course of Master of Computer Applications

I. To apprise the Senate of the introduction of new Course in Master of Computer Applications

The AICTE and the MHRD vide their letters F.No. 765-62-203(E)/ET/95 dated July 12, 2007 and F. No. 22-03/2007-TS-III (Vol. II) dated July 12, 2007 have interalia accorded approval for the introduction of Master of Computer Applications course in the Institute with effect from the year 2007-2008 with an intake of 60 students. (Appendix 10.11 (a) page 84-85)

The approval of Standing Committee on Senate Affairs (SCSA) in anticipation of the approval of the Senate had also been obtained in the 8th meeting of SCSA held on 16.7.2007.

Since this course is self-financing, eligibility criteria for admission, fee structure, creation of Department of Computer Applications and constitution of the Board of Studies of the MCA had already been got approved from the Hon'ble Chairman, Board of Governors. (Appendix 10.11 (b) page 86)

An admission notice for admission to this course was sent to the Press on All India basis. Though it was quite late yet the Institute received an overwhelming response from all over the country. The entrance test for this course was conducted on 12.8.2007 at NIT, Kurukshetra on the pattern of NIMCET. The admissions were made on the basis of performance of the candidates in the Entrance Test. All 60 seats as approved by the AICTE/MHRD have been filled up.

The Senate may kindly note.

II. To note the constitution of Board of Studies of the Department of Computer Applications

The Hon'ble Chairman, Board of Governors of NIT, Kurukshetra has on the recommendations of the Chairman, Senate constituted a separate Board of Studies for the Department of Computer Applications in anticipation of the approval of the Board. Accordingly, a separate PG Board of Studies for the MCA Programme has been established by the Director as under:-

Internal Members:-

1. Prof. R.S Bhatia — Chairman
   Assistant Professor in Electrical Engg.
   NIT, Kurukshetra.

2. Prof. J.S Lather — Member
   Lecturer in Electrical Engg.
   NIT, Kurukshetra.

3. Dr. Mayank Dave — Member
   Chairman, Computer Engg. Deptt.
   NIT, Kurukshetra.

External Members

1. Prof. Atal Chaudhary, — Member
   Professor & Dean
   Deptt. of Science & Engg.
   Jadavpur University,
   Kolkatta.

2. Dr. Gautam Bose — Member
   Director General NIC, A Block,
   CGO Complex, Lodhi Road
   New Delhi.

The Senate may kindly note

III. To consider the Scheme and Syllabi of Master of Computer Applications 2nd Semester.

In the 8th meeting of SCSA held on 16.07.2007, the Committee considered and approved the Scheme and Syllabi of MCA 1st Semester. As the classes for the MCA were to commence from 20th August, 2007, the Scheme and Syllabi for 1st semester was approved by the committee in anticipation of the approval of the Senate, and the same has already been placed before the consideration of the Senate at Item No. 10.6

The Board of Studies of the Department of Computer Applications in its meeting held on 10.10.2007 approved the Scheme and Syllabi of 2nd Semester of Three Year Degree course of Master of Computer Applications. Copy of the Scheme and Syllabi is enclosed as Appendix 10.11 (c) from page 87 to 92.

The Senate may kindly consider, discuss and approve the Scheme and Syllabi.

No. F. 22-3 / 2007 – TS – III (Vol-II)
Government of India
Ministry of Human Resource Development
Department of Higher Education
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N.I.T. KURUKSHETRA 16/9/07

New Delhi, the 12th July, 2007

To

The Director,
National Institute of Technology,
Kurukshetra – 136 019
(Haryana)

Subject: **Approval for introduction of Two Post Graduate Courses during academic session 2007 – 2008.**

Sir,

I am directed refer to your letter No. Acad/7001/5585 dated 11/07/2007 on the subject mentioned above and to accord the approval for introduction of following Post Graduate Courses:-

Sl. No.	Name of the Course	Intake
1.	M. Tech (VLSI Design)	18
2.	MCA	60

It is requested that a confirmation regarding availability of infrastructure and other facilities for starting these courses may be intimated to this Ministry.

This issues with the approval of Joint Secretary (Technical).

Yours faithfully,

(AVNS SASTRY)
Desk Officer
TEL: 230 70 177
Fax: 233 84 345
Email: technicalsection3@yahoo.co.in

अखिल भारतीय तकनीकी शिक्षा परिषद्
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
(भारत सरकार का एक सांविधिक निकाय) (A STATUTORY BODY OF THE GOVT. OF INDIA)

F. No. 765-62-203(E)/ET/75

Date: 9/07/2007

To,
The Commissioner & Secretary,
Technical Education,
Govt. of Haryana,
Secretariat, Chandigarh - 160 001

Sub: Extension of approval / Increase / variation in intake / introduction of additional courses for the NATIONAL INSTITUTE OF TECH, KURUKESHETRA, HARYANA for the academic year 2007-08.

Sir,
As per the Regulations notified by the Council vide F.No. 37-3/Legal/2004 dated 14th September 2006 and norms, standards, procedures and conditions prescribed by the Council from time to time and based on the recommendations of Appraisal Committee / Expert Committee, I am directed to convey the extension of approval of the Council to NATIONAL INSTITUTE OF TECH, KURUKESHETRA, HARYANA, for conduct of the following courses with the intake indicated below:

Name of the Course(s)	Existing Intake	Revised Intake	Period of approval
CIVIL ENGG	60	60	2007-08
COMPUTER ENGG	60	60	
ELECTRICAL ENGG	75	75	
ELECTRONICS & COMM. ENGG.	90	90	
INDUSTRIAL ENGG & MGT	60	60	
INFORMATION TECH	60	60	
M.TECH. COMPUTER ENGG	25	25	
M.TECH. CONTROL SYSTEMS	25	25	
M.TECH. CONTROL SYSTEMS	15	15	
M.TECH. ELECTRONICS & COMM ENGG	25	25	
M.TECH. ENVIRONMENTAL ENGG	18	18	
M.TECH. INSTRUMENTATION	25	25	
M.TECH. MECHANICAL ENGG	25	25	
M.TECH. MECHANICAL ENGG	15	15	
M.TECH. NANO TECH	18	18	
M.TECH. POWER SYSTEM	25	25	
M.TECH. POWER SYSTEM	15	15	
M.TECH. ROBOTICS & AUTOMATION	18	18	
M.TECH. SOIL MECHANICS & FOUNDATION	25	25	
M.TECH. SOIL MECHANICS & FOUNDATION	15	15	
M.TECH. STRUCTURAL ENGG	25	25	
M.TECH. STRUCTURAL ENGG	15	15	
M.TECH. WATER RESOURCES ENGG	25	25	
M.TECH. WATER RESOURCES ENGG	15	15	
MBA	60	60	
MECHANICAL ENGG	60	60	
M.TECH - VLSI DESIGN	00	18*	
MCA (FT)	00	60*	
TOTAL	834	1002	

The above approval is subject to rectification of the following observations / deficiencies / specific conditions by 31st August 2007.

Faculty :

1 Faculty in cadre ratio as per AICTE norms to be appointed

You may avail the opportunity of reconsideration of your proposal after rectification of the above mentioned deficiencies along with the requisite fee & relevant documents as per the provisions in the Approval Process Handbook, 2006.

Contd.. 2/-

इंदिरा गांधी खेल परिसर, इन्द्रप्रस्थ एस्टेट, नई दिल्ली - 110002
Indira Gandhi Sports Complex, I. P. Estate, New Delhi-110 002
दूरभाष / Phone : 23392506, 63-65-68, 71, 73-75 फैक्स / Fax : 011-23392554
वेबसाइट / Website : www.aicte-ernet.in

Appendix 10.11 (b) Re-typed copy of the FAX received

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

No. Acad. /5520 **DATED: 10.7.2007**

Sub: Introduction of Mater in Computer Application full time course in NIT, Kurukshetra with effect from the academic session 2007-08

All India Council for Technical Education, New Delhi has sent a status of approval for the introduction of M.Tech. VLSI Design with an intake of 18 students and MCA full time course in NIT, Kurukshetra with an intake of 60 students from the session 2007-08. The statement indicating the introduction of MCA full time course is enclosed.

The Senate in its 8th meeting held on 20.10.2006 vide item No. 8.20 has already approved the introduction of an M.Tech. course in VLSI Design in Electronics & Communication Engg. Deptt. The recommendations of the Senate have been approved by the Board in its 12th meeting held on 25.4.2007 vide item No. 12.6. The M.Tech. Course in VLSI Design will be run under the project in the Electronics & Communication Engg. Deptt. being funded by the Ministry of Information Technology, Govt. of India, New Delhi on 100% basis.

A separate MCA Department shall be established in the Institute. Necessary assistance will be provided by the Computer Engg. Deptt. and Centre for Computer Networking where infrastructure for running the said course is available. The course will be run on self-financing basis like the MBA course already being run in the Institute. There will be no financial liability on the part of the Institute.

For introduction the said course, the Institute has to adopt the following process to start the said PG course.

1. Approval of the Ministry of Human Resource Development
2. Approval of the Senate, NIT, Kurukshetra
3. Approval of the Board of Governors, NIT, Kurukshetra

The Institute has to take up the matter with the MHRD for granting formal approval for the introduction of the said course. After receipt of approval of MHRD, the matter will be placed before the Standing Committee on Senate Affairs giving details therein regarding courses of studies, fee structure and composition of Board of Studies in MCA Department for their concurrence, in anticipation of approval of the Senate as the Senate is not likely to meet in the near future. Since the courses are to be started from the academic session 2007-08 which is commencing very shortly, the matter will be placed before the Board of Governors thereafter.

The matter is placed before the Chairman, Board of Governors to kindly accord his approval for the same so that further necessary action may be taken accordingly.

Encl: Copy of approval of AICTE
for NIT, Kurukshetra

Sd/-
(M.N. Bandyopadhyay)
Director

Sd/-
Sh. C.B. Mathur
Hon'ble Chairman, Board of Governors
NIT, Kurukshetra
B-35, Shyam Nagar,
Jaipur

MCA - II SEMESTER

SCHEME AND SYLLABI
MASTER OF COMPUTER APPLICATIONS
NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA
(2007-08)

SEMESTER – II

SUBJECT CODE	COURSE TITLE	LECTURE hrs	LAB hrs	CREDITS
MCA 102	Data Structures and Algorithms	4	0	4
MCA 104	Object Oriented Programming	4	0	4
MCA 106	Programming Languages	4	0	4
MCA 108	Operating Systems	4	0	4
MCA 110	Numerical Analysis and Optimization Techniques	4	0	4
MCA 112	Data Structures and Algorithms Lab	0	3	1.5
MCA 114	Object Oriented Programming Lab	0	3	1.5
MCA 116	Computational Techniques Lab	0	3	1.5
			Total Credits	24.5

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MCA - II SEMESTER

MCA-102 Data Structures and Algorithms

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

Review of data types: Scalar types – Primitive types, Enumerated types, Subranges Structures types – Character strings, arrays, records, sets, files. Data abstraction. Complexity of algorithms: Time and space complexity of algorithms using "big oh" notation.
Recursion: Recursive algorithms, Analysis of recursive algorithms.

Linear data structures: Stacks, queues, lists. Stack and queue implementation using array, linked list. Linked list implementation using pointers.

Non linear Structures: Graphs, trees, sets. Graph and tree implementation using array linked list. Set implementation using bit string, linked list.

Searching: Sequential Search – Searching arrays and linked lists. Binary Search – Searching arrays and binary search trees. Hashing – Introduction to simple hash functions, resolution of collisions.

Sorting : n^2 Sorts – Bubble sort, Insertion Sort, selection sort. nlogn sorts – quick sort, heap sort, merge sort. External sort – merge files.

Suggested References

1. Sahni S., Data Structures, Algorithms, and Applications in C++, Mc Graw Hill, Singapore, 1998.
2. Cormen T.H., Leiserson C.E, and Rivest R.L., Introduction to Algorithms, Prentice Hall India, New Delhi, 1990.

MCA - II SEMESTER

MCA-104 Object Oriented Programming

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

Introduction: Introduction to OOP, Basic Concepts of OOP, Applications of OOP. Introduction to C++, function Prototypes, Inline functions, Reference Parameters, Dynamic memory allocation, default arguments, Scope resolution operator, Linkage specifications

Classes, Constructors, Friend Class: Introduction, Comparing class with Structure, Class Scope, Accessing Members of a class, Constructor, Destructor, Const objects, Const member functions, Friend class, Friend function, This pointer, Data abstraction and Information hiding, container classes and Iterators.

Overloading & Inheritance: Operator Overloading, Fundamentals, Restrictions, Overloading stream, Insertion and stream extraction operators, Overloading unary & binary operators, Converting between types, Overloading ++ and --, Inheritance, Introduction, Protected members, Casting base _class pointers to derived _class pointers, Overloading Base class members in a Derived class, Public, Protocols and Private inheritance, Direct base classes and Indirect Base Classes, Using Constructors and Destructors in Derived classes, Implicit Derived class object to base class object conversion.

Virtual functions, Streams, Files: Introduction, Type fields and switch statements, Virtual functions, Abstract base classes and concrete classes, Polymorphism, Dynamic binding, Virtual destructors. C++ Stream I/O: Streams, Stream Input, Stream Output, Unformatted I/O, Stream manipulators, Stream format states, Stream error, States.

Files: File Operations –File pointers, error handling during file Operations
Templates & Exception Handling: Templates, Function templates, Class templates, Overloading template functions, Class template and non type parameters –Templates with Multiple parameters. Exception Handling: When exception handling, Basic of C++ exception, Catching an exception, re throwing an exception, exception specifications. Namespace: Introduction to Namespace

Suggested References

1. Deitel H.M. & Deitel P.J., "How to Program C++", PHI, 2003
2. AL Stevenes, "C++ Programming", Wiley Dreamtech, 2003.
3. Herbert Scheldt, "C++, The Complete Reference", 2003.
4. E. Balagurusamy, "Object Oriented Programming with C++", 2nd Edition., 2001.

MCA - II SEMESTER

MCA-106 Programming Languages

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

High level languages, Programming Paradigms, Language implementation, Syntactic structure – Language representation, Abstract syntax tree, Lexical syntax, Context Free grammars (CFG), Normal forms of CFG.

Structured programming, its need and design issues, block structures, types, variables, binding, types of binding, type checking, strong typing, type conversion, named constant, principle data types, character string, user defined data types, pointer and reference.

Fundamentals of subprogram, referencing, environment – local and non local parameter passing, subprogram name as parameter, overloaded subprogram, generic subprograms, co routine, CALL-RETURN structure, recursion, implementing non-local referencing environment, scope-static and dynamic, implementation of scopes.

Introduction, subprogram level concurrency, and synchronization, through semaphores, monitors and message passing, Introduction to Exception handling.

Fundamentals of functional programming, features and implementation, Types – values and operations, product of types, Lists and operations on Lists, Functions from a domain to a range, Function application and lexical scope. Binding of values and functions.

Fundamentals of logical programming, basic elements of Prolog, deficiencies and application of Prolog.

Suggested References

1. T.W. Pratt, Programming Languages: Design & Implementation, PHI, 3rd Ed.
2. Ravi Sethi, "Programming Languages – Concepts and Constructs", Addison Wesley, 1989.

MCA - II SEMESTER

MCA-108 Operating Systems

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

Types of Operating Systems (OS), historical evolution of operating systems, Real time systems, Distributed systems. OS concepts – Processes, Files, System calls, Shell, Interrupt mechanisms.

File Systems: Functions of the system, File access and allocation methods, Directory Systems: Structured Organization, directory and file protection mechanisms, implementation issues; hierarchy of file and device management.

CPU Scheduling: Levels of Scheduling, Comparative study of scheduling algorithms, multiple processor scheduling.

Memory management, memory allocation, paging, virtual memory, page replacement algorithms, Paging, Segmentation combination of Paging and Segmentation, Virtual memory concepts, Demand Paging, Page replacement Algorithms

Device and Input-Output management.

Deadlocks, prevention and avoidance, concurrent processes, Semaphores.

Device and Input-Output management.

Study of UNIX operating system.

Suggested References

1. Peterson, J.L. & Silberschatz, A.: Operating System Concepts, Addison, Wesley-Reading.
2. Silberschatz Galvin – "Operating system concepts" – John Wiley & Sons – 2004

MCA - II SEMESTER

MCA 110 Numerical Analysis and Optimization Techniques

L	T	P	Total
4	0	0	4

Credits-4
Duration of Exam- Three hours
During Semester Evaluation Weightage- 40%
End Semester Examination Weightage- 60%

Errors in numerical calculations, sources of errors, significant digits, numerical solution of polynomial and transcendental equations, bisection method, regula-falsi method, Newton-Raphson method, fixed point method of iteration , rates of convergence of these methods, solution of system of algebraic equations, exact methods, Crout's triangularization method, iterative methods, gauss - seidel and relaxation method, polynomial interpolation, Lagrange interpolation polynomial, divided differences, Newton's divided difference interpolation polynomial, finite differences, operators $\Delta, \nabla, e, \delta$, Gregory, Newton forward and backward difference interpolation polynomials, central differences , stirlings interpolation formulae.
Numerical differentiation, differentiation formulae in the case of equally spaced points, numerical integration, trapezoidal and Simpson's rules, compounded rules, errors of interpolation and integration formulae numerical solution of ordinary differential equations, single stepmethods, Taylor series method, Euler's method, modified Euler's method, Picard's iteration method, Runge - Kutta methods (2^{nd}, 3^{rd} and 4^{th} order formulae- derivations not required), multistep methods, Milne's predictor and corrector formulae

Optimization methods, mathematical formulation of linear programming problem, simplex method, artificial variables, Charnes M method, two phase technique, duality in linear programming, dual simplex method, Transportation assignment and routing problems

Suggested References

1. Sastry S. S., Numerical Analysis, Prentice-Hall India.
2. S. S. Rao, Optimization Techniques, New Age Int., New Delhi
3. Froberg, Introduction to Numerical Analysis, Second Edition, Addition Wesley
4. Gnawin W.W., Introduction to Linear Programming, McGraw Hill

Item 10.12 To ratify the action taken by the Chairman, Senate in approving the revised Scheme of 1st to 4th Semester and detailed Syllabi of 2nd to 4th Semester of MBA Course.

The Board of Studies of the Department of Business Administration in its meeting held on 30.12.2006 amended the Scheme of 1st to 4th Semester and revised the Syllabi of 2nd to 4th Semester of MBA Course. Copy of the Scheme and Syllabi are enclosed as Appendix 10.12 from page 94 to 141. As the classes for the MBA were to start w.e.f. 01.01.2007, the Scheme of 1st to 4th Semester and revised Syllabi of 2nd to 4th Semester were approved by the Director & Chairman of the Senate in anticipation of approval of the Senate.

The Senate may kindly consider and ratify the action taken by the Director and Chairman, Senate.

DEPARTMENT OF BUSINESS ADMINISTRATION
NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

MBA PROGRAM

CURICULUM 2006-2008

SEMESTER-I

Course No.	Course Title	L	T	P	M	Credit
MBA-101	Principle & Practices of Management	3	1	0	100	3.5
MBA-102	Organization Behaviour	3	1	0	100	3.5
MBA-103	Managerial Economics	3	1	0	100	3.5
MBA-104	Management Accounting	3	1	0	100	3.5
MBA-105	Marketing Management	3	1	0	100	3.5
MBA-106	Business Communication	3	1	0	100	3.5
MBA-107	Business Statistics	2	1	0	100	2.5
MBA-108	Computing skills	1	2	0	100	2.0

Credits 25.5

SEMESTER-II

Course No.	Course Title	L	T	P	M	Credit
MBA-201	Financial Management	3	1	0	100	3.5
MBA-202	Human Resource Management	3	1	0	100	3.5
MBA-203	Production & Operations Management	3	1	0	100	3.5
MBA-204	Management Information System	3	1	0	100	3.5
MBA-205	Quality Management	3	1	0	100	3.5
MBA-206	Business Environment	3	1	0	100	3.5
MBA-207	Business Ethics	2	1	0	100	2.5
MBA-208	Business Application Software	0	0	4	100	2.0
MBA-308	SUMMER TRAINING (8 weeks)	-	-	-	200	6.0

Credits 31.5

SEMESTER-III

Course No.	Course Title	L	T	P	M	Credit
MBA-301	International Business	3	1	0	100	3.5
MBA-302	Business Law & Corporate Taxation	3	1	0	100	3.5
MBA-303	Entrepreneurship & Project Management	3	1	0	100	3.5
311/321/331/341	Maj. Specialization HRM (Any 3 electives)	3	1	0	100	3.5(each)
312/322/332/342	Maj. Specialization Financial Mgt. (Any 3 electives)	3	1	0	100	3.5(each)
313/323/333/343	Maj. Specialization Marketing Mgt. (Any 3 electives)	3	1	0	100	3.5(each)
314/324/334/344	Maj. Specialization IT Mgt. (Any 3 electives)	3	1	0	100	3.5(each)
	Minor Specialization (Any 2 electives out of a Maj. Specialization other than one's own Maj. Spln.)	3	1	0	100	3.5(each)

Credits 28

SEMESTER-IV

Course No.	Course Title	L	T	P	M	Credit
MBA-401	Strategic Management	3	1	0	100	3.5
MBA-402	E-Commerce	3	1	0	100	3.5
MBA-403	Project	-	-	-	200	6.0
411/421/431/441	Maj. Specialization HRM (Any 3 electives)	3	1	0	100	3.5(each)
412/422/432/442	Maj. Specialization Financial Mgt. (Any 3 electives)	3	1	0	100	3.5(each)
413/423/433/443/453	Maj. Specialization Marketing Mgt. (Any 3 electives)	3	1	0	100	3.5(each)
414/424/434/444	Maj. Specialization IT Mgt. (Any 3 electives)	3	1	0	100	3.5(each)
	Minor Specialization (Any 2 electives out of a Maj. Specialization as chosen in 3rd Semester)	3	1	0	100	3.5(each)

Credits 30.5

Note: In 1st and 2nd Semester, candidates are required to take Core courses only. In 3rd and 4th Semesters apart from the Core subjects, each candidate is required to opt for a Major Specialization (3 electives) out of the 4 viz. Human Resources Management (Code-1), Financial Management (Code-2), Marketing Management (Code-3) and Information Technology Management (Code-4); and a Minor Specialization (2 electives) from either of the remaining 3 Major Specializations. An elective course will be run if it is opted by at least 8 students.

As regards sessionals, the candidates will be awarded sessional marks out of 40 (20 marks being for 2 class tests and remaining 20 marks for group discussions, activities) etc.

NsBA-201 FINANCIAL MANAGEMENT (3.5 Credits, 3-1-0)

INTRODUCTION OF FINANCIAL MANAGEMENT:
Meaning, Scope, and goals of Financial Management; Financial functions; Investment Decisions: nature, importance, evaluation criteria and risk analysis.

FINANCING DECISIONS:
Cost of Capital; Leverage; operating, financial and combined leverages, EBIT-EPS analysis; Capital structure: Theories and determinants of capital structure, Financial indifference point.

DIVIDEND DECISIONS:
Models and determinants of dividend decisions.

WORKING CAPITAL MANAGEMENT:
Theory and determinants: Forecasting and financing of working capital, Management of cash, marketable securities and receivables, Credit rating and factoring in India.

RELEVANT ISSUES:
Corporate Restructuring: Acquisitions, change in ownership, Lease financing and Venture capital financing in India.

References:
1. Khan, M .Y .: Financial Management, Tata McGraw Hill, Delhi.
2. Hampton: Financial Decision Making, Prentice Hall of India, New Delhi.
3. Van, Horne: Financial Management and Policy, Prentice Hall of India, New Delhi.
4. Pandey, I..M. : Financial Management.

MBA-202 HUMAN RESOURCE MANAGEMENT (3.5 Credits, 3-1-0)

INTRODUCTION
Concept, Scope and Importance of Personnel Functions and Management of Human Resources, Personnel Policies, Man power planning, Job Analysis, Job Description and Job Specification, Personnel Organization.

RECRUITMENT AND SELECTION
Identification of sources of Manpower supply, Recruitment and Selection, Selection Tests and Interviews, Introduction and Placement.

TRAINING AND DEVELOPMENT
Identifying Training Needs, Methods of Training and Development, Evaluation of Training Programmes, Performance Appraisal, Obstacles in Systematic Performance Appraisal, Effective Performance Appraisal, Promotion, Transfer, Separation.

WAGES AND SALARY
Policies and Administration of Wages and Salary, Job Evaluation, Incentive Schemes – Profit Sharing, Bonus, Other Employee Benefits.

EMPLOYEE DISCIPLINE
Discipline Maintenance and Employee Counseling, Labour Participation in Management, Collective Bargaining, Employees safety and health, Trade Union, Grievance handling, Employee empowerment, Managing cross-cultural workforce

References:

1. Dessler, Garry, ' Human Resource Management' , Pearson Education
2. Pattanayak, B , 'Human Resource Management'
3. Chhabbra, T. N. 'Human Resource Management'
4. Mamoria C. B ,Gankar S. V, 'Personnel Management', Himalaya Publications.
5. Aswathappa, 'Human Resource and Personnel Management'
6. Rao ,V .S .P. 'Human Resource Management'
7. Armstrong 'Human Resource Management'

MBA-203 PRODUCTION AND OPERATIONS MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION TO PRODUCTION AND OPERATIONS MANAGEMENT:
Objectives of Production/Operations Management, Nature and types of production/ Operation, Production Capacity – Planning and control, Plant location, Layout forecasting work design and measurement, Maintenance and Material Handling methods.

INVENTORY CONTROL:
Deterministic and Probabilistic models.

NETWORKING TECHNIQUES :
Production Scheduling – Johnson's Rule Sequencing, Queuing Theory, PERT – CPM.

OPERATIONS RESEARCH :
L P formulation – Graphical solution, Basic feasible solution, Simplex(Big – M method), Two phase method duality, Sensitivity analysis, Transportation problem, Assignment problem, Crew – Assignment, Traveling – Salesman problem (T.S.P.)
Game theory.

References :

1. Panneerselvam, R. : Operations Research, PHI, New Delhi.
2. Kapoor, V. K. : Operations Research, Sultan Chand & Sons , New Delhi.
3. Taha, Hamdy A. : Operations Research, Prentice Hall, New Delhi.
4. Chary, S. N. : Production and Operations Management, Tata McGraw Hill, New Delhi
5. Buffa, Sarin, : Modern Production / Operations management
6. Sharma, J.K. : Operations Research, Macmillan, New Delhi.

MBA 204 MANAGEMENT INFORMATION SYSTEM (3.5 Credits, 3-1-0)

INFORMATION SYSTEM CONCEPTS:
Definition, and Importance of Information, Types of Information: Strategic and tactical Information, Operational Information, Economic Quality, and Dimensions of Information: Economic Dimension, Business Dimension, Technical Dimensions.

INFORMATION SYSTEM FOR STRATEGIC ADVANTAGE:
Strategic role of information system, breaking business barriers, reengineering business process, improving business qualities.

SYSTEM DEVELOPMENT:
Modern Information system SDLC, Structured Methodologies, Designing Computer based methods, procedures, control, Designing structured programs.

INFORMATION SYSTEM:
Computer Based Information System (CBIS), MIS as a part of CBIS, IT & MIS, MIS characteristics, MIS Function, MIS along with TPS, OAS and DSS: Overview, components and classification, steps in constructing a DSS, role in business, group decision support system. The organization as a system and Role of CBIS in an Organization, MIS Models, Functional application of MIS (viz. Marketing IS, Manufacturing IS, Accounting IS, Financial IS, Personal IS, Production IS), Management Dimension of MIS, MIS support to Each Level of Management (viz. Top Level Management, Middle Level Management, First- Line Or Supervisory).

IMPLEMENTATION AND CONTROL
Control- Testing Security, coding techniques, detecting error, Validation, Cost- Benefit Analysis: Assessing the value and risk of the information system.

SYSTEM AUDIT
Software engineering qualities- design, production, service, software specification, software metrics, software quality assurance.

TEXT BOOKS
1. Brien, James A.O, Management Information System, Tata McGraw Hill, N. Delhi.
2. More references to be added later.

MBA-205 QUALITY MANAGEMENT (3.5 Credits, 3-1-0)

INTRODUCTION TO TQM
What is TQM? Under standing concepts of quality, scope of TQM,
TQM: the guiding principle, customer orientation, productivity improvement through quality.

QUALITY PHILOSOPHIE
Deming Juran, Philip, Genichi, Taguchi, TQM Model

BASIC STATISTICAL TOOLS
Introduction, elements of risk, total process risk, step-by-step problem solving process, pareto analysis, concentration diagrams, activity sampling, data handling and displaying P-FMEA.

PROBLEMS SOLVING AND CONTINUOUS IMPROVEMENT
Introduction, implementation of six sigma, Kaizen kanban and JIT, 5-S, quality circles and zero defects

RELEVANT ISSUES:
Cost of quality, bench-marking, reengineering and TQM, HRM and TQM, ISO-9000 series, quality awards.

References:

1. Shailendra Nigam, Total Quality Management an integrated approach, Excel Books.
2. Bester field, Dale, H. Michel, Carol Bester field, Bester-field, Total Quality Management, Pearson Education.
3. Bharat Wakhlu, Total Quality Excellence Through Organization Wide transformation, Wheeler Publishing.
4. Samuel Kho, TQM Integrated Approach, Kogan Page Limited, London.
5. Evans James R. and Dean, James W: Total Quality Management, Organization and Strategy, Thomson Asian Pvt. Ltd.

MBA-206 BUSINESS ENVIRNOMENT (3.5 Credits, 3-1-0)

OVERVIEW OF BUSINESS ENVIRONMENT:
Nature, components and determinants of business environment, dynamics of business environment, Key indicators; Risk in business environment, Assessing business environment – country risk and political risk. Environmental analysis and forecasting.

CURRENT SCENARIO OF BUSINESS ENVIRONMENT IN INDIA:
Economic Reforms liberalization, Privatization, globalization, industrial Policy and industrialization trends, Public enterprise reforms and Disinvestment programmes, Monetary & fiscal policy.

LIBERALIZATION, PRIVATIZATION, GLOBALIZATION:
Globalization trend, Impact of liberalization and privatization on Indian Economy. FDI policy, India's share in world economy. Economic planning in India.

GLOBAL TRADE:
Nature & operations of multilateral economic institutions – World Bank, WTO & IMF and their impact on Indian business environment. Factors of global competitiveness.

EMERGING ISSUES:
Social responsibility of business, patents and trade marks, consumerism, corporate governance.

References:

1. Frances Cherunilam, Business Environment, Himalaya Publishing House.
2. Raj Aggarwal, Business Environment, Excel Books.
3. Suresh Bedi, Business Environment, Excel Books
4. International Business Environment & Business, Bhalla, V.K & S.Shivaramu
5. K. Aswathapa, Business Environment

MBA-207 BUSINESS ETHICS (2.5 Credits, 2-1-0)

ETHICS AND MORALITY

Meaning and Nature of Business Ethics-Moral Development and Moral Reasons – Individual and Corporate Moral Standards – Ethical Principles – Need and Importance of Ethics – Arguments for and against Business Ethics – Scope of Ethics – Works of Kant, Nozick & Rawl.

ETHICS AND THE MARKET SYSTEM

Free Market vs Mixed Economy – Ethical Dimensions in the Works of Locke, Adam Smith, Marx, Keynes- Morality of Market System – Ethics and Market Competition – Ethics and Market Practices – Price Fixation, Supply Mechanics, Price Discrimination, Market Conception – Ethics and Multi-nations – Ethical Distribution – Development of Socially relevant products – Ethics in Advertisement and Sales Promotion – Consumer Protection.

ETHICS AND THE BUSINESS ENVIRONMENT

Ethics and the Physical Business Environment – Pollution, Natural Resources Depletion – Green Environment – Rights of Future Generations – Remedies – Social Cost Benefit Analysis. Ethics and the Social Environment – Contractual obligations to Internal and External Customer. Ethics and Government – Corporate Governance – Corporate Social Responsibility – Social Audit.

ETHICS AND THE WORK PLACE

Ethical Dimensions in Employee Management – Job Discrimination – Health and Disability Issues – Occupational Health and Safety – Sexual Harassment – Employment of Women – Equal Pay for Equal Work – Job Posting and Glass Ceilings – Employment at Will – Ethics and Organizational Politics – Employee Rights to Privacy – Empowerment.

ETHICS & INDIAN ETHOS

Indian Management Thought – Indian Values and Principles – Ethical Actions – Freedom of Conscience – Concept of Work as Worship – Indian Culture and Quality of Family and Work Life – Balancing Home and Work –Self regulation and Self development.

References:

1. Manuel G. Velasquez, "Business Ethics", Concepts and Cases, 2005.
2. John, R Boatright, "Ethics and the conduct of Business" – Pearson Education, Indian Edition 2003.
3. Biswanath Ghosh, 'Ethics in Management and Indian Ethos' – Vikas Publishing 2005.
4. Bajaj and Agarwal, 'Business Ethics' An Indian perspective Biztantra, 2004.
5. Sathish Modh, Ethical Management' Macmillan India Ltd. 2005.
6. Chakraborty, S K 'Managerial Effectiveness and Quality of Work Life', Tata McGraw Hill, 2005

MBA 208 BUSINESS APPLICATION SOFTWARE (2.0 Credits, 0-0-4)

BUSINESS APPLICATION SOFTWARE:
MS Office Components – Accounting Packages – Tally, Ex, SAPM, Metastock etc., Marketing packages – TSP etc., Production Management Packages ORSTAT and an introduction to latest packages.

DATABASE MANAGEMENT PACKAGES:
Dbase, FoxPro, FoxBASE, Visual Fox Pro, Visual Fox base, Ingress, Sybase, Oracle, Power builder, Developer 2000, Designer 2000.

In-house Development of a package.

REFERENCES:

1. Winston, Practical Management Science: Spreadsheet Modeling and applications, Thomson learning, 2001
2. Carver, Doing Data analysis with SPSS 10.0, Thomson Learning, 2001
3. Namrata Agarwal, Financial Accounting using Tally 6.3, Dreamtech Press, New Delhi, 2002.
4. Lucas, Information Technology for Management, Tata- McGraw-Hill, New Delhi, 2001.
5. Alexis leon, Introduction to computers with MS Office 2000, Tata- McGraw-Hill, New Delhi, 2001.
6. Norman Gaither and Greg Frazier, Production and operations management, South-Western College Publishing, An International Thomson publishing company, 1999.
7. V. K. Jain, Database management systems, Dreamtech Press, New Delhi, 2002.
8. Vikas Gupta, Comdex computer course kit, Dreamtech Press, New Delhi, 2001.
9. Vikas Gupta, Comdex computer programming course kit, Dreamtech Press, New Delhi, 2002.
10. Dreamtech Software team, cracking the code: peer-to-peer application development, Dreamtech Press, New Delhi, 2001.
11. Stephanie Cottrell, Bryant, Teach yourself HTML 4 with XML, DHTML and JavaScript, Dreamtech Press, New Delhi, 2001.
12. David Crowder and Rhonda Crowder, Web Design with HTML/ Flash/ JavaScript, E-Commerce, IDG Books India (P) Ltd., New Delhi, 2001.

MBA-301 INTERNATIONAL BUSINESS (3.5 Credits, 3-1-0)

INTRODUCTION TO INTERNATIONAL BUSINESS
Defining International Business, Types of International Business, the external environment, the economic & political environment, cultural environment.

BALANCE OF PAYMENT AND ADJUSTMENT MECHANISM
Balance of payment structure, balance of trade, BOP effects on MNCs of home & host countries, Automatic adjustment in BOP.

THEORIES OF INTERNATIONAL BUSINESS
Basic trade theories- absolute advantage theory, comparative cost theory, Hecksher- Ohlin theory, Gains from trade.

EXPORT PROMOTION
Free trade zones, export promotion strategies, ECGC, EPCs, Institutional framework in India.

BARRIERS TO TRADE AND EXCHANGE RATE
Tariff and non-tariff barriers, Forex market mechanisms, exchange rate determination, risks in foreign exchange market, currency risk, forward contract, swap, FIIs.

INTERNATIONAL ECONOMIC INSTITUTIONS
Euro currency market, Multilateral economic institutions- IMF, World Bank, WTO, UNCTAD.

ECONOMIC INTEGRATION & MNCs
Regional economic integration and trading agreements (SAARC, NAFTA, BIMSTEC, ASEAN), Basic nature and determinants of Foreign Direct Investment, Multinational corporations- emergence, role in international business.

References:

1. Francis Cherunilam, International Business, Himalaya Publishing House.
2. Raj Aggarwal, International Business, Excel Books.
3. Suresh Bedi, International Business Environment, Excel Books.
4. Salvatore D, International Economics,
5. Bhalla, V.K & S. Shivaramu, International Business Environment,
6. International Business, Charles W. Hill, Tata McGraw Hill

MBA-303 ENTREPRENEURSHIP AND PROJECT MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION TO ENTREPRENEURSHIP:
Significance of Entrepreneur in Economic Development; Economic, social and psychological need for entrepreneurship; Characteristics, qualities, and pre-requisites of entrepreneur; The function of the entrepreneur in economic development of a Country; Methods and procedures to start and expand one's own business; Life cycle of new business and relationship with large enterprises; Achievement motivation; Environmental Factors affecting success of a new business; Reasons for the failure and visible problems for business.

PROJECT FEASIBILITY STUDY:
Preparation of Feasibility Reports: Selection of factory location, Demand Analysis, Market potential measurement, Capital saving and project costing, Working capital requirements, profit and tax planning; Economic, Technical, Financial and Managerial Feasibility of Project.

GOVT. SUPPORT TO NEW ENTERPRISE:
Incentives; source of Finance, Role of Govt. and Promotional agencies in entrepreneurship development.

ENTREPRENEURSHIP DEVELOPMENT PROGRAMMES:
Entrepreneurship Development Programmes; Role of various institutions in developing entrepreneurship in India (A brief description only).

References:
1. Clifton, Davis S and Fyffe, David E.: " Project Feasibility Analysis", 1977 John Wiley, New York.
2. Desai, A.N. : "Entrepreneur and Environment". 1990, Ashish, New Delhi. Desai, Basant :"Management of small scale industry".
3. Kumar, S.A.: "Entrepreneurship in Small Industry". 1990, Discovery, New Delhi.

MBA-302 BUSINESS LAW AND CORPORATE TAXATION
(3.5 Credits, 3-1-0)

Contract Act

Company Act

Sales of goods Act

Negotiable Instrument act

Patent, trademark, Copy Right

Cyber Law

MRTP Act

Transfer of Property Act/Stamp Act

Income tax, Wealth Tax

Central sales tax & Local Sales tax

Excises Duties

Corporate Taxation

Tax Holidays, Relieves, Rebates, Problem of Double Taxation

Tax Incentives for export Business, Tax Implications of foreign Collaboration

References:

1. N D Kapoor – Commercial Law.
2. Vinod K Singhania – Direct Taxes.
3. Bagwati Prasad – Law & Practice of Income Tax.

MBA-401 STRATEGIC MANAGEMENT (3.5 Credits, 3-1-0)

INTRODUCTION
Strategic management – concept as a field of study- views of different schools of thought on strategy – Strategic Management Process – Mission and Objectives – Linking Strategic Management with Ethics and Social Responsibility.

EXTERNAL ANALYSIS AND COMPETITIVE ANLYSIS
Environmental factors – Global Environment for MNCs – Industry Analysis: Porter's Five Forces Model – Assessment of Organization's Resources and Capabilities – Internal Resources and Capabilities – Core Competencies – Value Chain Analysis – SWOT Analysis.

STRATEGIC OPTIONS
Alternative Grand Strategies: Stability, Growth, Retrenchment, Combination – Outsourcing Strategies – Mergers Acquisitions – Strategic Alliance – Strategy and Competitive Advantage.

STRATEGIC ANALYSIS AND CHOICE
Process of Strategic Choice – Different tools and Techniques in Strategy Formulation- Role of Board of Directors : Corporate Governance.

STRATEGY IMPLEMENTATION AND EVALUATION
Important Issues in Implementation – Resource Allocation ,Leadership Implementation – Structural Consideration : Structure and Strategy, Organizational Design. Functional Strategies: Marketing, Human Resource, Production, R&D, Technology, Finance/Accounts. Strategy Evaluation Framework – Criteria for Strategy Evaluation – Measuring and Monitoring Performance : The Balanced Scorecard and other approaches.

CONTEMPORARY ISSUES IN STRATEGIC MANAGEMENT
Managing Technology and Innovation – Entrepreneurial Ventures and Small Business Strategic issues for Non-Profit Organizations.

References:

1. Azhar Kazmi , 'Business Policy and Strategic Management', Tata McGraw Hill
2. Wheelen / Rangarajan, 'Concepts in Strategic Management And Business Policy'.
3. Jauch & Glueck, 'Business Policy and Strategic Management'
4. John A. Pearce II and R.B Robinson, 'Strategic Management- Strategy Formulation and implementation'
5. Porter M., 'Competitive Advantage: Creating & Sustaining Superior Performance'
6. Gupta, Gollakota & Srinivasan., 'Business policy and Strategic Management- Concepts and application'

MBA-402 E-COMMERCE – TECHNOLOGY AND MANAGEMENT
(3.5 Credits, 3-1-0)

E-COMMERCE TECHNOLOGY:
Principles – Potential – Data Warehousing – Temporal Coherency –Networking Infrastructure – Software Tools – IP, TCP HTTP, HTML – Cryptography – Consumer Interface Technologies – OALP & Data mining – Case studies.

E-COMMERCE:
Effect on job, growth, trade, international co-operation – Tax problems – Application of E-commerce in different sectors – service, industry, domestic etc., multidisciplinary approach to E-commerce – Software's – case studies.

E-COMMERCE MANAGEMENT:
Net Centrism – Navigation – Digital Design – Web Metrics – Business models – Hyper Markets – Intelligent Agents – Auctions – Design, Protocol – Case Studies.

CHANNEL CONFLICT MANAGEMENT:
Security and Encryption – Abuse and Netiquette – Internet Governance – Economics of E Commerce – Equilibrium price – Electronic Marketing – Taxing – E business – Road map for success – case studies.

E-COMMERCE LEGAL ISSUES:
Software Intellectual property law – Contract law for E-commerce, Warranties and New Products – Cyber law issues – Privacy and Transborder flows, Fraud – Security of Information and Risks – Electronic Highway Robbery – Consumer Protection – Case Studies.

REFERENCES

1. Kalakota & Winston, Frontiers of Electronic Commerce, Addison Wesley, 2001.
2. Ephraim Turbon, Jae Lee, David King, H. Michael Chung, Electronic Commerce, A Managerial Perspective, Pearson Education Asia, 2001.
3. Nabil R.Adam, Oktay Dogramaci, Aryya Gangopadhyay and Yelena Yesha, Electronic Commerce, Amazon, 1999.
4. Nabil R.Adam and Oktay Dogramaci , Electronic Commerce: Technical Business and Legal Issues, Prentice Hall USA, 1998.
5. Doernberg, Richard L and Hinnekens Luc, Electronic Commerce and International Taxation, Peachpit Press, USA, 1996.
6. Greenstein Firsman, Electronic Commerce, Tata McGraw Hill, 1999.
7. Charles Trepper, E-Commerce strategies, Microsoft, Eastern Economy Edition, 1999.

ELECTIVES

MBA-311 DYNAMICS OF INDUSTRIAL RELATIONS (3.5 Credits, 3-1-0)

INTRODUCTION TO INDUSTRIAL RELATION

Industrial Relation Concept and Perspective – Importance – Industrial Relation and emerging Socio-economic scenario – Evolution of Industrial Relation - Industrial Relation and State - Legal framework of Industrial Relation.

TRADE UNION

Concepts – Role of Trade Unions – Problems of Trade Union – Trade Union and Employees – Trade Union and Management – Trade Union movement in India.

INDUSTRIAL CONFLICT

Conflict and Disputes – concept – classification of Industrial Dispute – Causes of Industrial Conflict – Impact of Industrial Disputes – Strikes and Lockouts.

GRIEVANCES AND SETTLEMENT

Grievances – concept – Grievances Handling Procedure, Settlement Machinery – Conciliation-Arbitration - Adjudication, Workers Participation in Management - Participative Management and Co-ownership – Collective Bargaining Workers Education and Training, Employee Empowerment, Industrial Relation and Technological Change, ILO and Industrial Relation

References:

1. Mamoria C.B. and Satish Mamoria, 'Dynamics of Industrial Relation', Himalaya Publishing House, New Delhi.
2. Dwivedi. R. S, 'Human Relation And Organizational Behaviour', Macmillan India Ltd, New Delhi.
3. Srivastava, 'Industrial Relations and Labour Laws', Vikas
4. Nirmal Singh and S. K. Bhatia, "Industrial Relations and Collective Bargaining".
5. Kochan, T. A. & Katz Henry, 'Collective Bargaining and Industrial Relations.
6. Sinha, 'Industrial Relation, Trade Union and Labour Legislation', Pearson Education.

MBA-321 ORGANISATIONAL DEVELOPMENT (3-5 Credits, 3-1-0)

ORGANISATION AND ITS ENVIRONMENT
Meaning of Organization – Need for existence – Organizational effectiveness- - Creation of value - measuring organizational effectiveness

ORGANISATIONAL DESIGN
Organizational Design – Determinants – Components – Types – Basic challenges of design – Differentiation, Integration, Centralization, Decentralization, Standardization, Mutual adjustment-Mechanistic and Organic Structures – Technological and Environmental Impacts on Design – Importance of Design – Success and Failures of Design.

ORGANISATIONAL CULTURE
Understanding Culture – Strong and Weak Cultures – Types of Cultures – Importance of Cultures- Creating and Sustaining Culture – Culture and Strategy.

ORGANISATIONAL CHANGE
Meaning - Forces for Change – Resistance to Change – Types and Forms of Change – Evolutionary and Revolutionary Change - change process – Major Techniques in Planned Change

ORGANISATIONAL DEVELOPMENT
Concept - Steps in OD – General OD Competencies – OD skills – OD Interventions – Interpersonal, Team, Inter-Group and System, Evaluation of OD – Ethics of OD Professional – Future of OD, Internal and External Consultant – Contemporary Organization Development Interventions – Learning Organization, Organization Restructuring.

References:

1. French, W. H. and Bell, C. H. , 'Organization Development', Prentice Hall of India.
2. Robbins, 'Organizational Theory', 'Structure Design and Application', Prentice Hall of India.
3. Gareth R. Jones, 'Organizational Theory Design And Change', Pearson Education.
4. Clark, Jon, 'Managing Innovation and Change' University of Southampton.
5. Adrian Thorn Hill, Phil Lewis, Mike Mill more and Mark Saunders, 'Managing Change: A Human Resource Strategy Approach' Wiley.

MBA-331 MANAGEMENT TRAINING AND DEVELOPMENT
(3.5 Credits, 3-1-0)

INTRODUCTION
Training concept, need, principles - Training and Development – Training Process – an overview. Role, Responsibilities and Challenges to Training Manager.

NEED ASSESSMENT
Organization and Management of Training Function – Training need assessment and action research. Instructional Objectives and Lesson Planning – Learning – Learning process.

METHODS /TECHNIQUES
Training Climate and Pedagogy - Different Training methods and Techniques, Training Aids.

EVALUATION
Training Communication, Evaluation of Training Programmes – Methods of Evaluation of Training Programmes – Traditional and modern methods.

MANAGEMENT DEVELOPMENT
Introduction to Management Development – Objectives, Importance, Process, Methods/ Techniques – Evaluation of Management Development Programmes.
Training and Development in India.

References:

1. Lynton, R, Pareek, U, 'Training for Development' Vistaar, New Delhi.
2. Bennet, Rogered, 'Improving Training Effectiveness', Aldershot
3. Buckley, R. & Caple, Jim, 'The Theory & Practice of Training', Kogan Page
4. Pepper, Allan D, 'Managing The Training And Development Function', Aldershot, Gower.

MBA-341 STRATEGIC HUMAN RESOURCE MANAGEMENT AND DEVELOPMENT (3.5 Credits, 3-1-0)

HUMAN RESOURCE DEVELOPMENT

Meaning – strategic framework for HRM and HRD – importance – challenges to Organizations – HRD functions –Roles of HRD Professionals – HRD needs assessment – HRD practices – Measurement of HRD performance – Links to HR, Strategy and Business Goals – HRD implementation and Evaluation – Recent Trends, Bench Marking and HRD Audit.

CROSS CULTURAL HRM

Domestic Vs International HRM – Cultural Dynamics – Cultural Assessment – Cross Cultural Education and Training Programs – Leadership and Strategic HR Issues in International Assignments – Current Challenges in Outsourcing, Cross border M and A – Repatriation etc. Building Multicultural Organizations – International Compensation.

CAREER AND COMPETENCY DEVELOPMENT

Career Concepts – Roles – Career stages – Career Planning an d Process – Career development Models – Career Motivation and Enrichment – Managing Career plateaus – Designing Effective Career Development Systems – Competencies and Career Management – Mapping Models.

EMPLOYEE COACHING AND COUNSELING

Need for Coaching – Role of HR in coaching – Coaching and Performance – Skills for effective Coaching, Need for counseling – Role of HR in Counseling – Components of Counseling Programs – Counseling Effectiveness – Employee Health and Welfare Programs, Work Stress – Sources – Consequences - Stress Management Techniques – Eastern and Western Practices, Self Management and Emotional Intelligence.

References:

1. Jeffery A Mello, 'Strategic Human Resource Management', Thomson, Singapore, Southwestern.
2. Tapomoy Deb, 'Strategic Approach to Human Resource Management', Atlantic
3. Randy L.Desimone, Jon M. Werner – David M. Harris, 'Human Resource Development', Thomson Southwestern, Singapore.
4. John P Wilson, 'Human Resource Development', Kogan Page
5. Dayal Ishwar, 'Successful Application of HRD', New Concepts, New Delhi
6. Dayal Ishwar, 'Designing HRD System'

MBA-411 MANAGERIAL BEHAVIOUR AND EFFECTIVENESS
(3.5 Credits, 3-1-0)

DEFINING THE MANAGERIAL JOB
Descriptive Dimensions of Managerial Jobs – Methods – Models – Time Dimensions in Managerial Jobs Effective and Ineffective Job Behaviour – Functional and Level Differences in Managerial Job Behaviour.

DESIGNING THE MANAGERIAL JOB
Identifying Managerial Talent – Selection and Recruitment – Managerial Skills Development – Pay and Rewards – Managerial Motivation – Effective Management
Criteria – Performance Appraisal Measures – Balanced Scorecard – Feedback – Career Management – Current Practice.

THE CONCEPT OF MANAGERIAL EFFECTIVENESS
Definition – The Person, Process, Product Approaches – Bridging The Gap – Measuring Managerial Effectiveness – Current Industrial and Government Practices in the Management of Managerial Effectiveness – The Effective Manager as an Optimizer.

ENVIRONMENT ISSUES IN MANAGERIAL EFFECTIVENESS
Organizational Processes – Organizational Climate – Leader – Group Influences – Job Challenge – Competition – Managerial Styles.

DEVELOPING THE WINNING EDGE
Organizational and Managerial Efforts – Self Development – Negotiation Skills – Development of Competitive Spirit – Knowledge Management – Fostering Creativity.

References:

1. Peter Drucker, 'Management', Harper Row, 2000.
2. Milkovich and Newwan,'Compensation', McGraw-Hill International, 2000.
3. Blanchard and Thacker,'Effective Training Systems, Strategies and Practices', Pearson 2005.
4. Dubin,"Leadership", 'Research Findings, Practices & Skill', Biztantra, 2005.
5. Mathis Jackson,'Human Resource Management', Thomson Southwestern, 2005.

MBA-421 LEGAL FRAMEWORK FOR HUMAN RESOURCE MANAGEMENT (3.5 Credits, 3-1-0)

Emergence and objectives of labour laws and social security.
Laws relating to wages, working conditions, labour welfare, industrial relations and social security contained in the following acts are to be studied.

The Factories Act, 1948
The Trade Union Act, 1926
The Payment Of Wages Act, 1936
The Minimum Wages Act, 1948
The Industrial Dispute Act, 1947
The Workmen Compensation Act, 1923
The Payment Of Gratuity Act, 1972
The Payment Of Bonus Act, 1965
The Employee's Provident Fund And Misc. Act, 1952
The Employee's State Insurance Act, 1948
The Industrial Employment (Standing Orders) Act, 1946
The Maternity Benefit Act, 1961
The Apprentice Act, 1961

References:

1. Kapoor N.D. ' Elements of Industrial Laws' Sultan Chand
2. Srivastava S.C. 'Industrial Relations and Labour Laws' Vikas

MBA-431 INTERPERSONAL AND GROUP PROCESSES (3.5 Credits, 3-1-0)

INTRODUCTION
Group as a medium of learning; Developing and Change in Group, Influence processes in groups and between group members.

GROUP
Group – Concept ,Classification , Difference between Group and Team , Group Development , Group Structure ,Group Norms , Group Cohesiveness , Group Decision-Making Techniques for improving Group Decision-Making
Team – Concept , Types , Team Effectiveness , Team Building
Power And Politics – Power Tactics , Power In Groups

INTERPERSONAL DYNAMICS
Interpersonal Behaviour – Nature , Interpersonal Communication , Interpersonal Awareness and Feedback Process , Interpersonal Trust , Fundamental Interpersonal Relations Orientation (FIRO-B) .
Career Roles and Identity , Competition and Cooperation.

References:

1. Mainiero, L. A. & Tromley C. L. , 'Developing Managerial Skills in OB' New Delhi , Prentice Hall of India .
2. Bennis , W. G. , 'Essay in Interpersonal Dynamics' ,U.S.A , Dorsey Press.
3. Kolb , D. , 'Organizational Behaviour: Practical Reading For Management', Prentice Hall.
4. Moore, M. D. "Inside Organizations: Understanding the Human Dimensions"

MBA-441 COMPENSATION MANAGEMENT (3.5 Credits, 3-1-0)

INTRODUCTION
Defining Compensation, concepts of reward management, competitive imperatives: productivity, quality, service, speed, and learning, planning for improved competitiveness.

DETERMINING COMPENSATION
Determination of inter and intra-industry compensation differentials, internal and external equity in compensation systems.

COMPENSATION OF PERSONNELS
Compensation packages - Compensation of chief executives, senior managers, R&D Staff and different components of compensation packages

COMPENSATION PRACTICES
Compensation Practices of Multinational Corporations, Strategic compensation systems, Statuary provisions governing different components of reward systems.

EMERGING ISSUES
Working of different institutions related to reward system like wage boards, pay commissions, problems of daily wages and unemployment.

References:

1. Armstrong, Michel and Murlis, Helen, 'Reward management: A Handbook of Salary Administration', Kegan Paul, London.
2. Bergess, Lenard R., 'Wage and Salary Administration', Charles E-Merril, London.
3. Capeman, George, 'Employees Share Ownership', Kogan Page, New York.
4. Henderson, Richard I., 'Compensation Management: Rewarding Performance', Prentice Hall Inc.
5. Micton , Rock : Handbook of Wages and Salary Administration
6. Milkovich and Newman ,'Compensation', McGraw-Hill International, 2000.

MBA-312 FINANCIAL INSTITUTIONS AND MARKETS (3.5 Credits, 3-1-0)

INDIAN FINANCIAL SYSTEM – AN OVERVIEW:
Introduction: nature and role of Financial System; Financial System and Financial markets; Financial system and economic development.

FINANCIAL MARKETS:
Money and capital markets; Money market - meaning, constituents and functions; Money market instruments – call money, treasury bills, certificates of deposits, commercial bills, trade bills etc.; Recent trends in Indian money market; Capital market : primary and secondary markets; Depository system; Government securities market; Recent development in Indian capital market; Role of SEBI – an overview.

RESERVE BANK OF INDIA:
Organization, management and functions; Credit creation and credit control; Monetary policy.

COMMERCIAL BANKS:
Meaning, functions, management and investment policies, E-banking and E-trading ; Present structure and recent developments in commercial banking.

DEVELOPMENT BANKS:
Concept, objectives and functions of development banks; Operational and promotional activities of development Banks; IFCI, ICICI, IDBI, IRBI, SIDBI, state development banks and state financial corporations.

NON-BANKING FINANCIAL INSTITUTIONS:
Meaning & Functions.

MUTUAL FUNDS:
Concept, performance appraisal and regulation of mutual funds (with special reference of SEBI guidelines); Designing and marketing of mutual funds schemes; Latest mutual fund schemes in India – an overview.

References :

1. Khan, M .Y.: Indian Financial System, Tata McGraw Hill, Delhi.
2. Bhole, L M : Financial Markets and Institutions, Tata McGraw Hill, Delhi
3.Avdhani: Investment and Securities Markets in India, Himalaya Publications, Delhi.

6.3A-322 MERCHANT BANKING AND FINANCIAL SERVICES
(3.5 Credits, 3-1-0)

MERCHANT BANKING:
Introduction – An Over view of Indian Financial System – Merchant Banking in India – Recent Developments and Challenges ahead – Institutional Structure – Functions of Merchant Banking – Legal and Regulatory Frameworks – Relevant Provisions of Companies Act- SERA – SEBI Guidelines – FEMA, etc. – Relation with Stock Exchanges, OTCEI and NSE.

ISSUE MANAGEMENT:
Role of Merchant Banker in Appraisal of Projects, Designing Capital Structure and Instruments – Issue Pricing – Pricing – Preparation of Prospectus, selection of Bankers, Advertising Consultants, etc. – Role of Registrations – underwriting Arrangements. Dealing with Bankers to the Issue, Underwriters, Registrars, and Brokers – Offer for Sale – Book – Building – Green Shoe Option – E-IPO Private Placement – Bought out Deals – Placement with FIs, MGs, FIIs, etc. off – shore Issues – Issue Marketing – Advertising Strategies – NRI Marketing – Post Issue Activities.

OTHER FEE BASED MANAGEMENT:
Mergers and Acquisitions – Portfolio Management Services – Credit Syndication – Credit Rating – Mutual Funds – Business Valuation.

FUNDS BASED FINANCIAL SERVICES:
Leasing and Hire Purchasing – Basics of Leasing and Hire Purchasing – Financial Evaluation – Tax Implication.

OTHER FUND BASED FINANCIAL SERVICES:
Consumer Credit – Credit Cards – Real Estate Financing – Bills Discounting – Recent Developments in Factoring – Venture Capital.

References :
1. Khan, M. Y.: 'Financial Services' – Tata McGraw-Hill, 3rd Edition, 2005
2. Bhalla, V K – 'Management of Financial Services' – Anmol, New Delhi.
3. Machiraju, 'Indian Financial System' – Vikas Publishing House 2nd Edition, 2002.
4. Varshney P.N. & Mittal D.K. 'Indian Financial System', Sultan Chand & Sons, New Delhi.

MBA-332 SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT
(3.5 Credits, 3-1-0)

INVESTMENT SETTING:
Investment setting – Securities – Sources of investment information – Security market indications – Security Contract regulation Act. Investor Protection.

CAPITAL MARKETS:
Over view of capital market, Institutional Structure in capital market, reforms and state of capital market. New issue market and problems, Securities and Exchange Board of India (SEBI), Debt Market.

FUNDAMENTAL ANALYSIS:
Economic Analysis – Economic forecasting and stock Investment Decisions – Forecasting techniques. Industry Analysis – Industry classification. Economy and Industry Analysis. Industry life cycle – Company Analysis Measuring Earnings – Forecasting Earnings – Applied Valuation Techniques – Graham and Dodds investor ratios.

TECHNICAL ANALYSIS:
Fundamental Analysis Vs Technical Analysis – Charting Methods – Market Indicators. Trend – Trend Reversals – Patterns – Moving Average – Exponential moving Average – Oscillator – ROC Momentum - - MACD – RSI – Stoastics.

PORTFOLIO MANAGEMENT:
Portfolio Theory – Portfolio Construction – Diagnostics Management – Performance Evaluation – Portfolio revision – Mutual Funds.

References :
1. Punithavathy Pandian, 'Security Analysis & Portfolio Management' –Vikas Publishing House Pvt. Ltd., 2001.
2. V.K. Bhalla, 'Investment Management', S.Chand & Company Ltd., Seventh Edition, 2000.
3. V.A. Avadhani – Securities Analysis and Portfolio Management, Himalaya Publishing House, 1997.
4. Donald E. Fischer & Ronald J. Jordan, 'Security Analysis & Portfolio Management', Prentice Hall of India Private Ltd., New Delhi 2000.

M.BA-342 INSURANCE AND RISK MANAGEMENT
(3.5 Credits, 3-1-0)

RISK MANAGEMENT :
Meaning of risk.
Types of risk - Market risk, Credit risk, Value risk, Portfolio risk.
Diversification of risk.
Steps in risk management.

INSURANCE MANAGEMENT :
Insurance –classification, need, advantages.
Fundamental principles of life insurance.
Life Insurance Products.
Premium and Bonuses.
Underwriting and Insurance Documentation.
Policy condition and Policy servicing.
Claims.
Group insurance, rural and social Insurance.
Legislative and regulatory matters.
Role of Insurance agents.
Insurance and risk management.
Information Technology in Insurance.

NON –LIFE INSURANCE :
Meaning, advantages, types – Fire, Marine, Accident insurance.

References:
1. George, E. Rejda : Principles of Risk Management and Insurance.
2. Dinsdale, W. A. : Elements of Insurance, Pitman.
3. Bakerwelford, A.W. and W.W. Otter Barry :Law Relating to Fire-Insurance, Butterworth & Co. Ltd., London
4. Jadhav, Narendra : Challenges to Indian Banking , Macmillan, New Delhi.
5. Tripathy, nalini Prava : Insurance Theory and Practice.

MBA-412 INTERNATIONAL FINANCIAL MANAGEMENT
(3.5 Credits, 3-1-0)

FOREIGN EXCHANGE MARKET AND RISK MANAGEMENT:
Environment of International Financial Management, Balance of Payments, Means of International Payments, Foreign Exchange Market, Currency Futures and Options Markets, Foreign Risk Management ,Exchange Risk, Political Risk ,Interest Rate Risk, Measuring and Managing Foreign Exchange Exposure, Practical Problems .

FINANCING OF INTERNATIONAL OPERATIONS:
Determination of Exchange Rate, Exchange Market and Arbitrage. Exchange rate Control, Financing of Exports and International Investments. International Monetary Systems, European Monetary System, International Monetary and Financial Institutions.

FINANCIAL MANAGEMENT OF MNCS:
Multinational Financial Management : Capital Budgeting decisions for Multinational Corporation ,Financing Decisions –Cost of Capital and Financial Structure, Working Capital Management and Control, International Transfer Pricing, Cases and Problems.

References:
1. Shapiro: Multinational Financial Management, Prentice Hall of India, New Delhi,Publishing Co. Ltd., New Delhi.
2. Buckley, A. : Multinational Finance, Prentice Hall of India, New Delhi.
3. Apte, P. G. : International Financial Management, Tata McGraw Hill.

MBA-422 WORKING CAPITAL MANAGEMENT
(3.5 Credits, 3-1-0)

NATURE AND FINANCING OF WORKING CAPITAL :
Nature of Working Capital, Trade-off between Profitability and Risk, Determinants of Working Capital, Forecasting Working Capital requirements, Sources of financing Working Capital, Factoring as a source of finance, Approaches to determine Financing Mix, Working Capital Leverage, Cases and Practical Problems.

CURRENT ASSETS MANAGEMENT :
Cash Management, Inventory Management, Receivables Management, Cases and Practical.

ANALYSIS OF WORKING CAPITAL :
Operating Cycle, Ratio Analysis, Funds –flow Analysis and Cash – flow
Statement as tools of Working Capital Management, Recent changes and new developments, Practical Problems.

References :
1. Bhalla, V.K. : Working Capital Management ,Text and Cases .
2. Hampton, J. J. and C. L. Wagner : Working Capital Management .
3. Scherer, F. C. : Modern Working Capital

MBA-432 DERIVATIVES MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION :
Derivatives –Definition -Types – Forward Contracts – Futures Contracts – Options - Swaps – Differences between Cash and Future Markets – Types of Traders – OTC and Exchange Traded Securities – Types of Settlement – Uses and Advantages of Derivatives – Risk in Derivatives – Cases.

FUTURES CONTRACT :
Specifications of Futures Contract – Margin Requirements – Marking to Market – Hedging using Futures – Types of Futures Contracts – Securities, Stock Index Futures, Currencies and Commodities – Delivery Options – Relationship between Futures Prices, Forward Prices and Future Spot Prices.

OPTIONS :
Definition – Exchange Traded Options, OTC Options – Specifications of Options – Call and Put Options – American and European Options – Intrinsic Value and Time Value of Options – Option payoff options on Securities, Stock Indices, Currencies and Futures –Options pricing models – Differences between future and Options contracts.

SWAPS :
Definition of SWAP – Interest Rate SWAP – Currency SWAP –Role of Financial Intermediary – Warehousing – Valuation of Interest rate SWAPs and Currency SWAPS Bonds and FRNs –Credit Risk.

DERIVATIVES IN INDIA :
Evolution of Derivatives Market in India – Regulations –Framework – Exchange Trading in Derivatives – Commodity Futures – Contract Terminology and Specifications for Stock futures and Index futures in NSE- Contract Terminology and Specifications for Interest Rate Derivatives.

References :
1. John. C. Hull : Options, Futures and other Derivative Securities, PHI, New Delhi.
2. Keith, Redhead : Financial Derivatives, PHI, New Delhi.
3. Bhaskar, p. : Derivatives Simplified.

MBA-442 INTERNATIONAL TRADE FINANCE
(3.5 Credits, 3-1-0)

INTERNATIONAL TRADE:
International Trade – Meaning and Benefits – Basis of International Trade – Foreign Trade and Economic Growth – Balance of Trade – Balance of Payment – Current Trends in India – Barriers to International Trade - WTO – Indian EXIM Policy.

EXPORT AND IMPORT FINANCE:
Special need for Finance in International trade – INCO Terms(FOB, CIF etc.) – Payment Terms – Letters of Credit – Pre Shipment and Post Shipment Finance – Forfeiting –Deferred Payment Terms – EXIM Bank – ECGC and its schemes – Import Licensing –Financing methods for import of Capital goods.

FOREX MANAGEMENT :
Foreign Exchange Markets - Spot Prices and Forward Prices – factors influencing Exchange rates –The effects of Exchange rates in Foreign Trade –Tools for hedging against Exchange rate variations – Forward, Futures and Currency options – FEMA –Determination of Foreign Exchange rate and Forecasting.

DOCUMENTATION IN ITERNATIONAL TRADE :
Export Trade Documents : Financial Documents – Bill of Exchange – Types- Commercial Documents –Performa, Commercial, Consular, Customs, Legalized Invoice, Certification of Origin Certificate Value, Packing List, Weight Certificate, Certificate of Analysis and Quality, Certificate of Inspection, Health Certificate. Transport Document- Bill of Landing, Airway Bill, Postal Receipt, Multimodal Transport Document. Risk Covering Document –Insurance Policy, Insurance Cover Note. Official Document –Export Declaration Forms, GR Form, PP form COD Form, Softer Form, Export Certification, Certification of Origin, GSPS-UPCDC Norms.

EXPORT PROMOTION SCHEMES :
Government Organizations Promoting Exports- Export Incentives- Duty Exemption, IT Concession, Marketing Assistance, EPCG etc. Export Promotion – EPZ, SEZ and Export House.

References:

1. Apte, P. G. : International Financial Management, TMH, New Delhi.
2. Lamony : International Marketing, Sultan Chand, Delhi.
3. Wali, B.M. : Export Management.

MBA-313 ADVERTISING AND SALES PROMOTION MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION TO ADVERTISEMENT
Advertising: Concepts, types and importance, role of advertising in the marketing process, legal, ethical and social aspects of advertising.

MODEL'S IN ADVERTISEMENT
Process of communication- Wilbur Schramm's Model, two-step flow of communication, theory of Cognitive Dissonance and Clues for Advertising Strategist.

PLANNING AND OBJECTIVE
Stimulation of Primary and Selective demand, Advertising planning and objective setting, Dagmar approach, determination of target audience.

ADVERTISEMENT PROGRAMME
Building of Advertising programme- message, headlines, copy, logo, illustration, appeal, layout, campaign planning, media planning.

BUDGETING AND EVALUATION
Budgeting, evaluation- rationale of testing opinion and aptitude tests, measurement of advertising effectiveness

INTRODUCTION TO SALES PROMOTION
Defining Sales promotion, Sales promotion tools, sales support system, consumer-oriented sales, channel oriented sales, planning, budgeting, implementing and controlling

EFFECTIVENESS OF SALES PROMOTION
Evaluation and measurement of sales promotion effectiveness, sales manager, sales promotion manager, market development manager-role, advertisement ethics, economics and social relevance, public relation activities.

EMERGING ISSUES
Advertising Organization- selection, compensation and appraisal of an agency, electronic media buying, advertising and consumer behaviour, role of creativity in advertising.

References:

1. Belch, George E and Belch, Michael, Irwin, Introduction to advertising and promotion,
2. Sandage and Fryberger, Advertising, AITBS.
3. Rajeev, Myers Johan G. and Aaker David A., Advertising Management, Prentice Hall of India.
4. O' Guinn, Advertising & Integrated Brand Production, Vikas Publishing House.
5. Arens and Bovee, Irwin, Contemporary Advertising.

MBA-323 SALES AND DISTRIBUTION MANAGEMENT
(3.5 Credits, 3-1-0)

MEANING AND FUNCTIONS
Nature, scope and objectives of sales management, theories of selling, functions of sales manager, selling operations

SALES FORCE MANAGEMENT
Personal selling, salesmanship, sales forecasting, determination of size of sales force, sales organization: recruitment and conducting sales training programmes,

SALES PROMOTION
Designing and administering compensation plan, motivating and supervising sales personnel, sales meetings and contests, direct marketing, sales display and sales promotion.

SALES VOLUME AND TERRITORY MANAGEMENT
Designing territories and allocating sales efforts, sales quota, sales evaluation programme, sales budgeting and control, International Sales management.

DISTRIBUTION MANAGEMENT
Distribution Channel Management- an introduction, Designing customer-oriented marketing channels, logistics management warehousing, transportation, inventory, communication, managing channel member behaviour.

References:

1. Dr. S.L. Gupta, Sales and distribution management, Excel Books
2. Anderson, R.& Hair, Professional Sales Management, Tata McGraw Hill
3. Dalrymple, D.J, John-Wiley, Sales Management: Concepts and cases,
4. Selling Today, Manning & Reece, Pearson Education Asia
5. Calvin, Sales Management, Tata McGraw Hill

MBA-333 PRODUCT AND BRAND MANAGEMENT
(3.5 Credits, 3-1-0)

MANAGING PRODUCT
Product planning and Management: Product Concepts and levels, product line and product mix decisions, product life cycle and marketing strategy implications. New Product Development Process: Developing product strategy, financial analysis of product management

MANAGING BRAND
Branding Strategies: Importance of branding, branding terminology, basic branding concepts-brand awareness, brand personality, brand image, brand identity, brand loyalty, brand equity, product versus corporate branding

MAJOR BRANDING DECISIONS
Major branding decisions: selecting a brand name, brand extension decision, family versus individual brand names, multiple branding, private versus national branding, handling brand name changes

BRANDING STRATEGIES
Brand positioning and re-launch: brand building and communication. Branding in specific sectors. Brand equity: sources & benefits, designing marketing programme to built brand equity, measurement of brand equity.

STRATEGY TO IMPLEMENTATION
Brand visioning, organization culture and brand, brand objective formulation, brand sphere auditing, implementing and recoursing brands, brand valuation.

References:

1. Lehmann, Donald R. and Winer, Russel S, Product Management, Tata McGraw Hill.
2. Keller, Kevin Lane, Strategic Brand Management, Prentice Hall.
3. Harsh V Verma, Brand Management, Excel Books
4. Cowley, Don, Understanding Brands, Kogan Page, London.
5. Czemiawskd, Richard D. & Michael W. Maloney, Creating Brand loyalty, Amacom, NY.

MBA-343 CONSUMER BEHAVIOUR
(3.5 Credits, 3-1-0)

INTRODUCTION
Introduction to Consumer behaviour, consumer behaviour and marketing strategy, consumer involvement and decision-making

CONSUMER AS AN INDIVIDUAL
Information Search Process, Evaluative Criteria and decision rules, consumer motivation, information processing and consumer perception, Consumer attitudes and attitude change, influence of personality and self-concept on buying behaviour, psychographics and life-style.

CONSUMERS IN THEIR SOCIAL AND CULTURAL SETTINGS
Influence of culture, subculture and social-class, reference group influence, diffusion of innovation and opinion leadership, Family decision-making.

CONSUMER DECISION PROCESS AND POST-PURCHASE BEHAVIOUR
Personal influence and opinion leadership-diffusion of innovations, consumer decision-making process, models of consumer decision process, post purchase behaviour- consumer expectation and satisfaction, managing dissonance, consumer loyalty.

ADDITIONAL DIMENSIONS
Consumerism-consumer protection-difficulties and challenges in predicting consumer behaviour, online consumer behaviour, organizational and industrial buyer behaviour.

Refevences:

1. Assael, H, Consumer Behaviour and marketing action, Asian Books Pvt. Ltd.
2. Engle, J.F, Consumer Behaviour, Dryden Press
3. Hawkins, D.I,Consumer Behaviour: Implications for marketing strategy.
4. Schiffman, LG and Kanuk, L.L, Consumer Behaviour, Prentice Hall of India
5. Consumer Behaviour: Buying; Having, Pearson Education

MBA-413 RETAIL MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION TO RETAIL
Retailing definition, structure, different formats, marketing concepts in retailing- consumer purchase behaviour, cultural and social group influence.

RETAIL LOCATION
An introduction to the retailing system, Retailing Mix- Social forces, economic forces, technological forces, competitive forces

KEY MARKETING FACTORS IN RETAILING
Retail store location- traffic flow and analysis, population and its mobility, exteriors and layout, creativity display, Merchandise Planning- stocks turns, credit management, retail pricing, return on per sq. feet of space

RETAIL PROMOTIONS
Staying ahead of competition, supply chain management, warehousing, franchising, direct marketing/direct selling

MAJOR RETAILING DECISIONS
Exclusive shops, destination stores, chain stores, discount stores and other current & emerging formats- issues & options, Retail equity, technology in retailing, retailing through the Internet.

References:

1. Berry & Evans, Retail Management: A strategic management, Bermen, PHI/Pearson Education.
2. Levy Michael & Weitz Barten W, Retailing Management, Tata McGraw Hill,
3. Newman, Andrew J. & Cullen, Peter, Retailing Environment & operations, Vikas Publishing House
4. Gilber, David, Retail Marketing Management, Pearson Education
5. Morgenstein, Melvin and Harriat Strong in Modern Retailing, , Prentice Hall.

MBA-423 INTERNATIONAL MARKETING
(3.5 Credits, 3-1-0)

INTRODUCTION TO INTERNATIONAL MARKETING
International Marketing- definitions, nature, scope and benefits, reasons and motivations underlying international trade and international business, basic modes for entry, process of international marketing, domestic marketing versus international marketing

INTERNATIONAL MARKETING ENVIRONMENT
International Marketing Environment, WTO framework and international marketing, factors influencing international market selection and segmentation, selection strategies, international marketing planning and control

INTERNATIONAL MARKETING MIX
International marketing Mix, international product policy and planning, international product mix, branding, labeling, packaging and organization of product warranties and services. International pricing policies strategies, the process of price setting, pricing decisions, information for pricing decisions.

INTERNATIONAL ADVERTISEMENT
International Advertising: international advertising strategy, elements of advertising strategy, media strategy.

GLOBAL DISTRIBUTION MANAGEMENT
International distribution management, international distribution channels, international distribution policy, selecting distribution channels.

References:

1. Sak Onkvisit and John Shaw, International Marketing (Analysis and strategy), Prentice Hall of India
2. Vern Terpestra and Ravi Sarathy, International Marketing, Thomson
3. R.L. Varshney and B. Bhattacharya, International Marketing, Sultan Chand Publications

MBA-433 MARKETING OF SERVICES
(3.5 Credits, 3-1-0)

INTRODUCTION TO SERVICES MARKETING
Services economy-evaluation and growth of service sector, nature and scope of services, characteristics, classification, service market potential, expanded marketing mix for services, service quality, introduction to gaps model.

FOCUS ON CUSTOMERS
Assessing service-marketing opportunities, customer expectations and perceptions of services, customer behaviour specific to usage of services, service markets segmentation, market targeting and selection.

SERVICE DESIGN
Levels of service product, service life cycle, new service development, service blueprint-physical evidence and service scope, competitive differentiation of services, pricing of services- methods and specific issues.

SERVICE DELIVERY
People in service, service process-direct distribution, channel functions, channels selection, impact of information technology, designing communications mix for promoting services, building service customer relationships and service recovery, role of internal marketing in service delivery.

MARKETING SERVICES FOR DIFFERENT SERVICES
Formulating service marketing strategies for health, hospitality, tourism, logistics, financial, information technology, educational, entertainment and public utility services.

References:

1. Christopher H.Lovelock, Jochen Wirtz, "Services Marketing", Pearson Education.
2. Halen Woodruffe, "Services marketing", Macmillan Publishing Co.
3. Nimit Chowdhary and Monika Chaudhary, "Text book of marketing of Services", the Indian Experience, MacMillian Publishing Co.
4. Shanker, Ravi: Service Marketing, Excel
5. Zeithaml, V.A. and Bitner, M.J: Service Marketing, McGraw Hill.

MBA-443 SUPPLY CHAIN MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION
Introduction to Logistics & Supply Chain Management, Definition, Objectives, Significance, Decision Phase, Supply chain characteristics & Relationships

DRIVERS OF SCM
Drivers of SCM Performance, global supply chain management, forecasting-types, static method forecasting, adaptive method, procuring raw material and purchase process, errors

COMPONENTS OF SCM
Inventory Management- defining, costs of keeping inventory, EOQ-Approach, ABC Analysis, Risk & Uncertainty Models, Lead time

LOCATION
Warehousing-role and concept of warehousing, types of warehousing, planning warehouse operations, site selection, layout, material handling, management of receipts and issues.

TRANSPORTATION
Importance and modes of transportation, selection of transportation modes, documents and carrier liabilities, transportation management, multimodal transportation

COMMUNICATION
Role of information, information processing at each step, role of IT in SCM, importance of communication at each level.

PACKAGING
Defining package & packaging, importance to customer service, utilization, importance in SCM

ADDITIONAL DIMENSIONS
JIT philosophy, Quick response logistics, distribution control and performance evaluation.

References:

1. Bowersox, Physical Distribution Management, Tata McGraw Hill.
2. Stern, Louis W. Adel, I.E.L, Ansary, Anne T Coughlan, Marketing Channels, Prentice Hall.
3. Khanna, K.K., Physical Distribution Management, Himalaya Publishing House
4. Lambert, D. Strategic Logistics Management, Tata McGraw Hill.

MBA-453 CUSTOMER RELATIONSHIP MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION
Definition ,CRM as a business strategy, Elements of CRM, CRM Processes and systems, Entrance, applications and success of CRM ,Strategy and Organization of CRM

CUSTOMER-SUPPLIER RELATIONSHIPS
Description of customer-supplier relationships, The dynamic in relationships ,CRM as an integral business strategy, The nature of the CRM strategy, The context of the CRM strategy, The results of a successful CRM strategy

THE RELATIONSHIP-ORIENTED ORGANISATION
Mission, Culture, Structure, People, Communication and information, Systems, CRM Marketing Aspects

CUSTOMER KNOWLEDGE AND COMMUNICATION
The value of customer knowledge ,The utilization of data as an asset , From data to customer knowledge , Privacy ,Communications and multichannels, The individualized customer proposition , Customization , Individualization of the product offering

THE RELATIONSHIP POLICY
Improvement of the size and quality of the customer database ,Relationship policy per segment, Relationship policy by relationship phase Translating the relationship policy into contact moments, Loyalty programmes

ANALYTICAL CRM
Customer identification, Customer profiling, Retention and cross-sell analyses,
Call centre management, CRM Systems, The future of CRM

References:

1. Dyche, The CRM Handbook, Pearson Education
2. V.Venkata Ramana, G.Somayajulu, Customer Relationship Management: A key to Corporate Success
3. Seth, Atul Parvatir, G.Shainesh, Customer Relationship Marketing: Emerging Concepts, Tools and Application
4. Payne, Christopher, Moira, H Peck, Relationship for Competitive Advantage

MBA-314 BUSINESS INTELLIGENCE
(3.5 Credits, 3-1-0)

BUSINESS INTELLIGENCE:
Introduction and Terms, BI Data Sourcing / Movement, BI Implementation and Warehouse concept.

FUNDAMENTAL OF DATA WAREHOUSING:
Introduction, Basic Data Warehousing, Data Warehousing Project Management, Data Warehouse Operation Technologies, Data Modeling, Data Warehousing Performance, Metadata and Metaphor, Aggregation, OLAP Technology.

BUSINESS INTELLIGENCE SOLUTION ARCHITECTURE:
Application area, Access enablers, DW modeling and Construction, BI using OLAP and Visual Warehouse.

DATA MINING:
Introduction to KDD and Data Mining, Data Mining Processes, Data mining Applications, Data Mining Algorithms – Association Rules, Clustering Technique, Decision Tree.

WEB MINING:
Introduction, Web content mining, web structure mining, Web usage Mining, Document mining, Application of web mining.

BUSINESS INTELLIGENCE AND MINING:
Technique and methodology to enhance BI using intelligent miner, Internet Commerce using Web usage mining.

REFERENCES

1. Essential Guide to Data Warehousing, Lou Agosta,
2. Data Mining Techniques. Arun K Pujari, Hyderabad University Press, 2001
3. Data warehousing, Data mining, and OLAP, Alex Berson, Stephen Smith, Tata McGraw Hill, N.Delhi.
4. Capacity Planning for BI Application: Approaches and Methodologies, Seungrahn Hahn, M.H. Ann Jackson.
5. Getting Started with Data Warehouse and Business Intelligence, Maria Sueli Almeida, Missao Ishikawa, Joerg Reinschmidt, Torsten Roeber
6. Intelligent miner for data: Enhance Your Business Intelligence. Joerg Reinschmidt, Helena Gottschalk, Hosung Kim, Damiaan Zwietering.

MBA-324 DECISION SUPPORT SYSTEM
(3.5 Credits, 3-1-0)

INTRODUCTION

Decision Concept - Steps-Decision Support System-Components- Characteristics-Classification and Applications.

MODEL MANAGEMENT

Models - Modeling Process - Types of Models - Optimization – Simulation - Heuristic-Descriptive – Predictive - Model Base - Modeling Languages - Model Directory - Model Base Management System - Model Execution, Integration and Command Processing - Model Packages.

DATA MANAGEMENT SYSTEM

Data Base-Sources of data-Data Directory-Data Structure and Data Base Languages-Query Facility - Data Management System - DBMS as DSS Development Tool.

DIALOG MANAGEMENT

User Interface-Graphics – Multimedia - Visual Interactive Modeling - Natural Language Processing-Speech Recognition and Understanding - Issues in User Interface.

DEVELOPMENT OF DECISION SUPPORT SYSTEM

Development Process-Software and Hardware and Data Acquisition - Model Acquisition-Dialog Development-Integration - Testing and Validation-Training and Implementation.

REFERENCES

1. Efraim Turban and Jay E. Aronson, Decision Support Systems and Intelligent Systems, Prentice Hall International, 1998.
2. Janakiraman V.S. and Sarukesi. K, Decision Support Systems, Prentice Hall of India,1999.
3. Lotfi. Decision Support System and Management, McGraw-Hill Inc., International Edition, New Delhi, 1996.
4. Maraks, Decision Support System, Prentice Hall International Paperback Edition, Delhi, 1998.

MBA-334 DATABASE MANAGEMENT SYSTEM
(3.5 Credits, 3-1-0)

INTRODUCTION

Database systems – Definition – Components – Advantages – Objectives – Evolution.

MODELS

DBMS Architecture – Associations – Relationships – Mappings between Abstractions – Generalization – Classifications – Conceptual Data modeling – File Organization – Data Structure – Data models: HDBMS, NDBMS, RDBMS, OODBMS.

DATABASE DESIGN

Relational Data Model – Relational Algebra – ER Diagrams – Data Dictionary – Normalization – Boyce Codd Normal Forms – Integrity – Relational Database Languages – Database Administration – File Structures and Indexing.

OBJECT MODELLING

Object oriented concepts – Structure – Models and Databases – Object life cycle modeling – Objects, Classes, Patterns – Object interaction modeling – Object Oriented Design – UML.

OPERATIONS AND MANAGEMENT

Client / Server and Databases – Data Warehousing – Query Processing – Concurrency Management – Heterogeneous and Homogenous Systems – Distributed Databases – Controls – Atomicity, Recovery – Security, Back-up and Recovery.

REFERENCES

1. Gary W.Hansen and James V.Hansen, "Database Management and Design" Prentice Hall, 1996.
2. Jeffrey A. Hoffer, Mary B. Prescott, Fred R. McFadden, "Modern Database Management", Prentice Hall, 6th edition, 2002, 7th edition.
3. Bipin C.Desai, 'An Introduction to Database Systems', Galfothia publication, 1996.
4. Ronald J.Norman, 'Object Oriented Systems Analysis and Design', Prentice Hall 1996.
5. Elmasri – Navathe, 'Fundamentals of Database Systems', Addison – Wesley, 4th Edition.
6. Carlo Batini, Stefano Ceri and Sham Kant B.Navathe, 'Conceptual Database Design' – 'An Entity Relationship Approach', Benjamin Cummings publishing, 1992.
7. James Rumbaugh, Michael Blaha, William Lorensen, Frederick Eddy and William Premerlani, 'Object Oriented Modeling and Design', Prentice Hall, 1991.

MBA-344 ENTERPRISE RESOURCE PLANNING FOR MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION

ERP Concepts – Enterprise System – Evolution of ERP – Tangible and Intangible Benefits – Emerging Trends in ERP adoption – ERP Implementation Stages – case Study.

PRE – IMPLEMENTATION STAGE

Need Analysis – Competitive Environment Analysis – Gap Analysis – Cost Elements – Feasibility Analysis – ERP Modules – ERP Industries verticals – ERP Architecture –ERP Software – SAP - Baan – IFS – Oracle – people Soft Comparison of ERP Software – ERP Package Evaluation Criteria – Package Life Cycle – Request for Information – Functional Requirement Specification – Request for Proposal – Vendor Selection – ERP Consultants – Case Studies.

IMPLEMENTATION

Business Process Reengineering Concepts – Reengineering and Process Improvement – BPR Steps – AS-IS and TO – BE Analysis – Modeling Business Process – Successful BPR – Reengineering – Organizational Readiness – Implementation Approaches.

PROJECT MANAGEMENT

Project Management – Project Team – Steering Committee – Project Manager – Functional Team – IS Team – Security Specialists. Project Deliverables – Change Management – System integration – Systems Integration standards – Middleware Development – Forward and Reverse Engineering – ERP Infrastructure Planning – System Architecture

POST IMPLEMENTATION

Organizational Transformational Model of ES Success – Cross Functional, Organizational and Industrial Impacts. Measuring Business Benefits – Balanced Score card Method – ABCD Checklist Framework – Capability Maturity Framework – case study.

REFERENCES

1. Mahadeo Jaiswal and Ganesh Vanapalli, Text Book of Enterprise Resource Planning, Macmillan India Ltd., Chennai 2005.
2. Alexis Leon, Enterprise Resource Planning Demystified, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2004.
3. Vinod Kumar Garg and N.K. Venkitakrishnan, Enterprise Resource Planning – Concepts and Practice, Prentice Hall of India, New Delhi, 1998.

MBA-414 SECURITY MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION TO SECURITY:
Need for security and control, risks to information system data and resources, definitions of information security, computer crimes and virus, internal control.

TYPES OF SECURITY:
Physical security, threats to security, physical access, fire, and theft protection; environmental hazards; logical security: threats to security, access control- identification, authentication, authorization, password control and management access control software.

DATA SECURITY:
Threats to security, access controls, back-up and recovery strategies, data input/output control data encryption; tele-communication security: physical security, logical access security, dial-in access security, network management control, authentication protocols, internet/intranet/extranet security.

COMPUTER CONFIGURATION AND OPERATION SECURITY:
Hardware / software security, start up/shut down procedures, journals, back-up/ recovery strategies; personal security: threats security, protection from people, protection of employees.

SECURITY PLANNING:
Risk and Security policy, Security management, Business continuity planning, Security audit.

REFERENCES:

1. Danda, Protect Yourself Online, Prentice Hall of India, N.Delhi.
2. Ron Weber , EDP Auditing, Tata McGraw Hill, N.Delhi.
3. Cobb Stephen, PC and LAN Security,
4. Michel E Kabay, Enterprise Security-Protecting Information Assets
5. Enterprise Disaster Recovery Planning by Misra
6. Computer Security for Dummies
7. Internet Security by Derek Atkins et al.

MBA-424 STRATEGIC MANAGEMENT OF INFORMATION TECHNOLOGY
(3.5 Credits, 3-1-0)

INTRODUCTION

Managing in Information Age. Evolution of IT Management – Types of Information Systems – Internet Based Business Systems – Value Chain Reconstruction for E-Business – IT Management Challenges Key issues in information systems, – Critical success Factors for IT Managers, management and the role of the CIO, analytical framework for strategic IT initiatives.

HARDWARE SOFTWARE AND COMMUNICATION

Computing Hierarchy – Input – Output Technologies – Hardware Issues – System Architecture – Operating Systems – Network Operating Systems – Grid Computing – Mobile Computing – Ubiquitous Computing – Application Programming – Managing Application Development – Data Resources – Managing Data Resources – Problem of Change and Recovery.

COMMUNICATION TECHNOLOGY

Communication Technology – WWW – Intranets – Extranets – Voice Networks Data Communication Networks – Last Mile – Wireless System – Web Hosting – Application Service Providers.

IT APPLICATIONS

Sustaining competitive advantage by use of IT, creativity, learning organizations and role of IT in business transformation, information partnerships, understanding information, managing information as a resource, Application areas of IT: Enterprise Resource Planning – Enterprise System – Expert System – Decision Support System – Neural Networks – Executive Information System – Customer Relationship Management System – Supply Chain Management Systems – Knowledge Management – Data Warehousing – Data Mining – Vertual Reality – E-Business and Alternatives. E-Business Expectations and Customer Satisfaction.

IT MANAGEMENT

National information infrastructure and it policy at the national level, Planning for strategic IT resource, Managing the IT function, IT Strategy Statements – Planning Models for IT Managers Legislation and Industry Trends. Independent Operations – Headquarters Driver – Intellectual Synergy – outsourcing the IT function- Integrated Global IT – IT investment – Estimating Returns – IT Value Equation – Pricing Frame work – Hardware and Software Buying – Factors of IT Management – Implementation Control – Security – Quality – Ethical Issues – Chief Information Officer.

REFERENCES:

1. Galliers, R.D. Strategic Information Management: Challenges and Strategies in managing Information Systems, Oxford, butterworth- Heinemann.
2. Garroll W. Frenzel Johne. Frenzel, Management of Information Technology, Thomson Course Technology, Boston, 2004.
3. Henry C. Lucas. Jr, Information Technology – Strategic Decision Making for Managers, John Wiley & Sons (Asia) Pvt. Ltd., Singapore, 2005.
4. Efraim Turban, R. Kelly Rainer Jr, Richard E. Potter, Introduction to Information Technology. John Wiley & Sons, (Asia) Pvt. Ltd. Singapore, 2004.

MBA-434 NETWORKING MANAGEMENT
(3.5 Credits, 3-1-0)

INTRODUCTION TO INTERNET:
Evolution of internet, TCP/IP, Addressing in Internet – IP and Domains, Internet Service Providers, Type of Connectivity such as dial – up, Leased, VSAT etc., Internet server and clients module in various Operating systems.

E – MAIL AND LIST SERVER:
E – mail Netwoks, overviews of e – mail protocols (SMTP, POP – 3, IMAP – 4), format of an e – mail message, description of e – mail headers, e – mail contents and encoding, e – mail routing, list servers.

FILE TRANSFER PROTOCOL AND TELNET:
Introduction to FTP, Public domain software, common commands. Telnet protocol, terminal emulation.

INTRODUCTION TO WWW:
Evolution to WWW, Basic Features, WWW browsers, WWW Servers, HTTP and URL's.

WWW BROWSERS:
Basic Features, Bookmarks, History, Progress Indicator, personalization of browsers, printing displayed pages and forms, saving web pages, Netscape Communicators, Internet Explorer, Search and Downloads.

WEB PUBLISHING:
Technology overview, website planning, where to host your web site, Multiple sites on one server, Maintaining a web site, publishing tools.

HYPERTEXT MARKUP LANGUAGE:
Documents overview, header elements, Section heading, block oriented elements, lists, inline elements, visual markup, hypertext links, uniform resource locators, images, forms, tables, special characters, and java.

INTERACTIVE TOOLS:
Common Gateway Interface, Java Scripts and Java.

MULTIMEDIA AND SEARCH ENGINES:
Technology overview, VRML, Popular search engines, how to register a web site on search engines.

REFERENCES:

1. Internetworking with TCP/IP-VOL – I, Principles, Protocol and Architecture, D. Comer
2. TCP/IP Networking: Architecture, Administration, and Programming, I/e James Martin and Joseph Leben.

MBA-444 SYSTEMS MANAGEMENT
(3.5 Credits, 3-1-0)

SYSTEM FUNDAMENTALS :

Definition Of software product, software engineering paradigms, software engineering knowledge engineering, and End user development approach, software engineering life cycle, process modules(Waterfall model Spiral model).

SYSTEM ANALYSIS:
An abstraction, partitioning and projection, system specification, software requirement specification (SRS) standards, formal specification methods, specification tolls, flow based, data based and object oriented analysis (data flow diagram, data dictionary).

SYSTEM DESIGN:
Problem partitioning, abstraction, top down & bottom up strategies, modularity structure charts, idealized and constraint design (Warnier – Orr, E –R modeling) object oriented design (Booch approach), cohesion and coupling, design matrices, design documentation standard.
ROLE OF CASE TOOLS:
Relevance of CASE tools, high-end low end CASE tools, automated support for data dictionaries, DFDs, ERDs.
CODING AND PROGRAMMING:
Choice of programming languages, mixed language programming and cell semantics, structured programming information hiding, documentation, re-engineering legacy systems, coding standard.
SOFTWARE QUALITY AND TESTING:
Software quality assurance, types of software testing (White box and Black box testing, unit testing integration testing, verification and validation of software), debugging and software reliability analysis, software quality and matrices, software maturity model and extensions.
SOFTWARE COST AND TIME ESTIMATION:
Function points, issues in software cost estimation: Introduction to the Raleigh curve, algorithmic cost models (COCOMO, Putnam – Slim, Watson, and Felix), other approaches to software cost and size estimation (software complexity, Delphi, costing by analogy).
SOFTWARE PROJECT MANAGEMENT:
Planning software, project work breakdown structures, integrating software design and project planning, software project teams, projecting monitoring control.

REFERENCES:

1. An integrated approach to Software engineering , Jalote, P
2. Software Engineering Practitioner's Approach, R S Pressman, Tata McGraw-Hill, N. Delhi.
3. Software Testing techniques, Beizer, B

Chairman
Dept. of Business Administration
National Institute of Technology
Kurukshetra-136119

Item 10.13 To consider NCC as an alternate course to Physical Education and Sports for the students of B.Tech. 1st Year.

The Institute has one NCC Unit comprising of 54 cadets in force in the Institute. Presently, the drill/parade and other physical activities of the cadets are carried out in the evening after working hours.

The Senate in its 7th meeting held on 9.6.2006 considering the need to improve the physical fitness of engineering students, had approved to include a course entitled Physical Education & Sports (Practical) PES-110 in 1st Semester and PES-211 in 2nd Semester for the students of B.Tech. 1st year commencing July, 2006.

Now, the NCC Officer of the Institute, Lt. V.K. Bajpai has pointed out that timings for NCC activities clashes with the sports activities and the cadets, who had joined the NCC wing of the Institute, are not able to attend the NCC parades. It is, therefore, proposed by the NCC Officer that it should be optional for the students either to join NCC or Course on Physical Education & Sports with the same credit of 2.0. In the support of his proposal the NCC Officer has mentioned that NCC is the activity where students not only involve in exhaustible physical activities but also many other adventurous and social activities. The regular activities include drill, map reading, weapon training, firing, attending camps, etc. where cadets are exposed to regimental way of life. The NCC Officer has further intimated that 75% attendance on NCC parades is a pre-requisite for enabling the cadets to appear for the NCC Certificate Exams. (Proposal and syllabi of the courses received is attached as appendix 10.13 from page 144 to 147). Summary of the proposal is as under:-

(i) Each year a batch of 27 students only will be permitted to enroll for the NCC course

(ii) Course will run parallel to PES-110 and PES-211 and will be named as NCC-110 and NCC-211, for 1st Semester and 2nd Semester respectively.

(iii) No separate slot or contact hours are being generated in the Scheme/Ordinance.

(iv) The student will have to continue with the stream (NCC or Sports) chosen during the 1st semester and in 2nd semester, the stream can't be changed.

(v) Attendance requirement of the cadets shall remain the same, i.e., 75% of the total classes. Attendance report shall have to be submitted by the NCC Officer to the Academic Section at the end of the semester.

(vi) On similar lines, sessional marks weightage and end semester exam. weightage (in terms of grades) will be submitted to the Controller of Exams. as a part of examination process.

(vii) No separate staff/faculty will be made available for running the course

The Senate may kindly consider, discuss and decide the proposal of the NCC Officer.

NCC
N a t i o n a l C a d e t s C o r p s
National Institute of Technology, Kurukshetra-136119

No.NCC/134/07 Date: 03.04.2007

Subject: Agenda Item for the kind consideration of the Senate

In the last senate meeting, it has been made compulsory to join sports for the First year Students. Credit for this activity is 1.5.

NCC is the activity where students not only involve in exhaustible physical activities but also many other adventurous and social activities along with their regular NCC activities like drill, map reading, weapon training, firing, attending camps where cadets are exposed to regimental way of life. As NCC activities timings clash with sports activities, it is forcing the cadets to miss the NCC parades. It is pertinent to inform that 75% attendance on NCC parades is a prerequisite for enabling the cadet to appear for the NCC Certificate Exams. Obviously, making sports compulsory would debar the NCC cadets for appearing for the exam with the consequence that students would stop going NCC.

In view of the above, I propose the following agenda item for the kind consideration of the senate:

"It should be optional for the students either to join sports or NCC. In both the cases students shall get a credit of 1.5".

Lt. V.K. Bajpai

Prof.in-charge Senate Affairs

Copy to
Director for necessary consideration , pl.

Dean (Acad)

B.Tech 1st semester (common to all Branches)
National Cadet corps (Practical) -I
NCC-110

L	P	Total		
2	2	04	Max. Marks -	100
			Sessional -	40
			Examination –	60
			Exam. Duration-	03 hrs
			Credit -	1

Introduction: General Introduction to NCC; Aim , motto, NCC song, Organization, types of NCC camps, Divisions of NCC, ranks of officers and cadets, NCC wings, directorates, group headquarters and battalions. NCC as second line of defence, Military History, lecture by experts

Drill: Warm up exercises, What is drill, importance of drill, words of commands, good and bad habits in the drill, Savdhan and Vishram, Khare – khare murna, Tej chal aur thum, Chalte – chalte murna, Khuli line and Nikat line chal, Marching, Chalte – chalte Shalute, samane ka salute etc,

Map reading: General introduction to map reading, importance of map reading, compass and map, map reading practice, locating own position on map, conventional sign, point to point march., lectures by experts

First aid: Importance of first aid, Personal Hygiene, general hygiene & Maintenance of good health, lecture by experts

Leadership : What is the leadership, characteristics of good leadership, Leadership traits, Discipline and its types, what do you understand by morale, lecture by experts

Lt. V. K. BAJPAI
NCC Officer
N.I.T. Kurukshetra.

B.Tech IInd semester (common to all Branches)
National Cadet corps (Practical) -II
NCC-211

L	P	Total		
2	2	04	Max. Marks -	100
			Sessional -	40
			Examination –	60
			Exam. Duration-	03 hrs
			Credit -	1

Weapon Drill: Warm up exercises. What is weapon drill, importance of drill, words of commands, Savdhan and Vishram, Khare – khare murna, Tej chal aur thum, Chalte – chalte murna, Khuli line and Nikat line chal, Marching, Chalte – chalte Shalute, samane ka salute etc,

Weapon Training: How to handle different types weapons, firing practice with .22 and SLR, maintenance of weapons.

NCC camps: Importance of camps, different activities in the camp, what is regimental way of life, how to organize camp.

Social service: What is the social service, importance of social service, Major social activities done by NCC cadet during natural disasters; tree plantation, blood donation, social awareness programs like anti dowry, anti leprosy, adult education, pulse polio etc. Environment and ecology

Field and battle craft: What is the battle drill & Field Signals, Fire control order, The aim of adventure activities, Type of orders, Main NCC Expedition location, Type of patrolling.

Basic introduction of NCC

Total no of allotted strength of NCC cadets in our institute is one Platoon (54 Cadets). Enrollment is generally completed in the beginning of new academic year. Induction is done after examining the physical fitness/medical fitness of the student. Regular ground training of cadets includes:

- Drill
- map reading
- Weapon training
- physical fitness etc.

classroom lectures on other activities like

- field craft,
- battle craft;
- first aids etc

and other social activities like

- Anti Dowry,
- Anti Leprosy Drive,
- Old Age Homes,
- Tree Plantation,
- Blind Schools,
- Disaster Relief,
- Blood Donation,
- AIDS Awareness,
- Adult Education,
- Cancer Awareness Programs
- Pulse polio etc.

Training is imparted on every Wednesday and Thursday after classes are over. Total training period is about two hours on each day. Training is imparted by regular army officers from the Battalion under the overall supervision of NCC officer of the institute. After training cadets get refreshment funded by military. This training continues upto the month of January. In the month of February Certificate examinations are conducted for Ist year and IInd year NCC cadets.

Eligibility to appear in the 'B' certificate examination is

(i) cadet must have completed 75% attendance in the institute training in the Ist year and should have attended one Annual training camp.

Eligibility to appear in the 'C' certificate examination is

(i) Cadet should have passed 'B' certificate examination
(ii) Should have 75% attendance in IInd year
(iii) Must have attended one Training camp after 'B' certificate examination.

LEVER BAJPAI
NCC Officer
N.I.T. Kurukshetra.

Item: 10.14 To re-consider Merit-scholarship on CGPA basis instead of the present SGPA basis

Presently 34 nos. of Merit scholarships have been allotted to various branches of B.Tech. for the batches commencing 2004 and 2005 (3rd year and 4th Year). Scholarship includes a cash award of Rs.1, 000/- , waiving of tuition fee and issuance of a Merit Certificate.

The Finance Committee in its 6th meeting held on 14.12.2005 vide Item No. 6.6 made a provision for only 15 Merit Scholarships to the 15 top students of B.Tech. 2006 batch onwards. Scholarship comprised of a cash prize of Rs.3, 000/- and a Merit Certificate. There was no provision of waiving of tuition fee.

The break-up of number of Scholarships (Branch-wise) is given in table below:

STATUS OF NUMBER OF SCHOLARSHIPS

Batch	Number	CIVIL	COMP	ELECT.	ECE	IEM	ITY	MECH.
2004	34	7	3	8	7	No. adm.	No. adm.	9
2005	34	7	3	8	7	No. adm.	No. adm.	9
2006	15	3	3	3	3	No. Prov.	No. Prov.	3
2007	15	3	3	3	3	No. Prov.	No. Prov.	3

The present practice of deciding the merit of top students is on the basis of SGPA of that particular year.

However, it is proposed that Merit Scholarships henceforth may be granted on the basis of CGPA instead of SGPA of two semesters of that particular year. This may be made effective from the next academic session i.e. 2008-09. The criteria of merit will be as given below:

a) For 1st Year students: on the basis of CGPA/SGPA of 1st semester result
b) For 2nd Year students: on the basis of results up to 2nd semester (CGPA)
c) For 3rd Year students: on the basis of results up to 4th semester (CGPA)
d) For 4th Year students: on the basis of result up to 6th semester (CGPA)

Other and basic terms and conditions of the scholarship will remain the same.

The Senate may kindly consider, discuss and decide.

Item 10.15: To consider awarding of Medals and Prizes to M.Tech, MBA and MCA Students

At present there is a provision for a number of scholarships, honours, awards, etc. for under graduate students of B.Tech. Courses. Based on academic performance student topping the list of successful candidates in a particular branch of technology is awarded an Institute medal and a Certificate. There is a provision for a medal for the Best All Rounder Student (combining scholarship with sportsmanship and excellence in extra-curricular activities) of a particular batch of Bachelor of Technology.

It is proposed that toppers (academic results) of all disciplines /specializations of M.Tech, MBA and MCA be honoured with medals and certificates. The semester-wise toppers should also be given academic prizes on the same pattern as that of B.Tech.

The Senate may kindly consider and decide.

Item 10.16 To consider the proposal of change of name of the Department of Physics

The Institute has a Department of Physics which teaches Physics to B.Tech 1st and 2nd Semester students. In addition to this, the department has been offering 4 semester M.Tech (Instrumentation) programme for the last many years. The department has also started a 4-semester M.Tech programme in Nano-Technology w.e.f. 2006-07. The BOS of the Department in its meeting held on 17th October, 2006 recommended that the name of the Department may be changed from **Department of Physics** to **Department of Applied Physics** in light of the fact that these M.Tech. programmes support technical education and are of applied nature.

The Senate may kindly consider and decide the issue.

Item: 10.17 To consider the proposal to constitute a Committee to review the Ordinance of Studies, Regulations and Scheme of Master of Technology in the Institute.

Presently the Institute has M.Tech. Courses in 16 branches: Five in Civil Engg., three each in Electrical Engg. and Mechanical Engg., two each in Physics and Electronics & Communication Engg. and one in the Department of Computer Engg. The increasing number of courses, students strength, market requirements and dwindling faculty strength calls for re-orientation of the courses so that within the existing resources, the courses can be optimally managed.

It is proposed that a Committee be constituted to look into the Scheme of Master of Technology in the Institute. The Committee may also give its recommendations on the aspect of inter-disciplinary nature of courses to be taught and research to be guided.

The Senate may kindly consider and approve the above item.

Item 10.18 To consider the report submitted by the Committee constituted by the Chairman, Senate regarding fee structure for the members of staff of NITK for M.Tech. (Part-time) Degree Course.

An item No. 9.7 was put up before the Senate in its 9th meeting held on 18.1.2007 to consider the fee structure for the members of staff of NITK for pursuing M.Tech. Degree Course as part-time candidates. The Senate decided as under:-

The Senate decided that a Committee may be constituted by the Director & Chairman of the Senate to decide the Registration fee & Continuation fee for the members of staff of NITK for pursuing M.Tech. Degree Courses as part-time candidates.

Accordingly a Committee was constituted by the Director and Chairman of the Senate to give specific recommendations for the same. The Report submitted by the Committee is enclosed as Appendix 10.18 at page no. 153

The Senate may please consider approving the recommendations of the Committee.

NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119

Dated: 12.4.2007

Minutes of the meeting held on 11.4.2007 at 3.30 PM of the Committee constituted by the Director & Chairman, senate to look into the matter and give specific recommendations for fee structure for the member of staff of NITK for M.Tech. (Part-time) Degree Course.

Ref: Decision taken by the Senate its meeting held on 18.1.2007 vide agenda item 9.7.

The following were present

1. Dr. Krishna Gopal — In Chair
   Dean(P&D)
2. Prof. R.K. Bansal
   Dean(Academic)
3. Sh. Jeet Ram, Jr. Accountant
   (Nominee of Asstt. Registrar(Accounts))

The Committee was also assisted by Sh. S.S.Rana, Deputy Registrar(Academic)

The committee recommended the following fee structure for the members of staff of NIT, Kurukshetra for pursuing M.Tech. (Part-time) Degree Course:-

i) Registration Fee	:	Rs. 500/- (at the time of Admission)
ii) Continuation Fee	:	Rs. 100/- per Semester
iii)Examination Fee	:	As is being paid by the regular students.

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

(JEET RAM) (R.K BANSAL) PM 4/07 (KRISHNA GOPAL)

Item:10.19 To consider that the Senate agenda may be circulated to members through e-mail/soft copy in future

With the present day technology aiming for paperless offices, it is suggested that the agenda of the Senate henceforth may be circulated to the members through e-mail or as a soft-copy on CD ROM.

A few hard copies (limited number) however, may still be made available in the Senate Hall for the first few meetings, should some members want so.

The Senate may kindly consider and approve the above item.

Item: 10.20 To consider to carry out admissions to M.Tech during the month of June, 2007

It has been observed that M.Tech. admissions to most of the Engineering Institutes are held much before the admissions in our Institute. This practice had been adopted because of the fact that the candidature of a student is based on the results of the total degree course after the 8th Semester B.Tech/BE or equivalent examination. It is generally felt that some good students with good ranking in GATE are already selected by other Universities/Institutes and, therefore, the Institute is deprived of them and some seats remain vacant too. The issue was discussed in the 8th meeting of the Standing Committee on Senate Affairs and the general view was that that it would be better if the M.Tech admissions were conducted by 30th of June of every calendar year based upon valid GATE score and B.Tech/BE 7th Semester results. For students coming from science stream and annual examination system, the results of the previous years be considered as basis for provisional admission. However, these students will furnish an undertaking to the effect that their admissions will be regularized only after clearance of the final examination and compliance to the academic qualifying requirements by the 15th of September of calendar year.

It is, therefore, proposed that in order to get good students and in the best interest of the Institute, provisional M.Tech admissions be conducted during the month of June, 2007 with effect from the Academic Session 2008-09.

The other modalities for uniform pattern of admissions in the Institute will be made available by the Academic Section.

The Senate may kindly consider and decide the issue.

Item: 10.21 To consider the payment of remuneration to Academic Staff out of Students Fund (Official Transcripts)

The Academic Section besides its normal duties and responsibilities, is also looking after the work of preparing official transcripts for students and alumni of the Institute beyond duty hours. The practice of preparing these official transcripts had been introduced after the 7th meeting of the Senate held on 9.6.2006. There is a fee prescribed for this specified job, the details of which are as follows:

		Within India	Abroad
1.	For first copy of the transcript	Rs.50/-	USD 5
2.	For every additional copy	Rs.10/-	USD 1
3.	For postage & handling	Rs.100/-	USD 5

It is submitted that an amount of Rs.1,67,950/- has been charged/collected from the students/ex-students of this Institute and deposited in the "Student Fund" on account of preparation and issuance of official transcripts upto 15.11.2007. The Academic Staff is requesting for some remuneration for doing the said work after office hours and on holidays/ Saturdays /Sundays.

The Senate may consider the request for remuneration to the Academic Staff by adopting the same analogy as is being followed for distributing the amount collected from various consultancy jobs.

The Senate may kindly consider & decide.