

**Amity School of Engineering and Technology**

**MINUTES OF BOARD OF STUDIES MEETING**

1. The first Board of Studies Meeting was conducted in MDP Room – A Block (Ground Floor) on 26<sup>th</sup> May 2014 and on subsequent days.

2. The following were present :

(a) **As Member of BOS - ASET :**

- (i) Maj Gen VK Narang (Retd.), Director ( ASET & AIIT) – Chairman BOS – ASET & AIIT
- (ii) Prof. Ashok Kumar Raghav, Director – IRD, AUH
- (iii) Dr. Priti Singh, HOD, ECE & EEE
- (iv) Dr. Praveen Kumar HOD, CSE, IT & AIIT
- (v) Dr. R.K. Malik, HOD, Dept of Civil Engineering
- (vi) Dr. Janak Patel, Professor ECE
- (vii) Mr. Sanjeev Sharma, Assistant Professor, MAE
- (viii) Ms. Charu Jain, Sr. Lecturer – CSE

(b) **As External Experts**

- (i) Dr. Ajay Kumar, HOD – CSE, Meerut Institute of Engineering & Technology
- (ii) Dr. Rekha Agarwal ECE, (she was not present but suggested her opinions through email)

(c) **As Special Invitees**

- (i) Dr. Vikas Madhukar, Director Admissions and Dy Director ABS – Gurgaon
- (ii) Dr. Sunil Sikka, Assistant Professor – CSE, ASET
- (iii) Mr. Vivek Birla – Program Manager & Lecturer ASET & AIIT & Faculty CSE Department

## Agenda:

At the outset the Chairman welcomed all the members present and explained the purpose of the Meeting. He then gave a brief on each of the following Agenda issues to be taken up:-

- (a) Review the Programme Structure of ongoing B.TechCSE - 210 Credits.
- (b) To draft the Programme Structure of Dual Degrees B.Tech CSE+MBA & B.Tech ECE+MBA – 280 Credits.
- (c) Review the Programme Structure of ongoing M.TechCSE - 130 Credits.
- (d) To draft the Programme Structure for new course M.TechSoftwareEngineering - 130 Credits.
- (e) To draft the Programme Structure for new M Tech (Weekend) Courses in CSE ,ECE and ME - 107 Credits
- (f) To draft the Programme Structure for new course M.Tech VLSI Design - 130 Credits
- (g) Review the Programme Structure of ongoing MCA- 170 Credits.
- (h) Proposal for the lateral entry in MCA 2<sup>nd</sup> Year for BCA Students.
- (i) To draft the Programme Structure of BCA+ MCA 280 Credits.
- (j) Review the Programme Structure of ongoing M.Sc (NT&M) – 130 Credits
- (k) Review of syllabus of subject “Fuzzy Logic and Neural Networks” (BEL706/EEE2508) with Lab B.Tech-EEE
- (l) To draft the Programme Structure of three years BCA (Evening ) Programme.
- (m) Review scheduling of subjects ASE 2205 Elements of Space Systems and ASE2651 Aircraft Stability and Controls and ASE 2603 Aircraft Performance in B Tech (AE) Curriculum.

4. Details of deliberations and discussions held and decisions taken are covered in the subsequent paragraphs.

## 5. Review of Programme Structure of B.Tech (CSE) : 210 Credits

- (a) No changes were suggested in the first Four Semesters.
- (b) Fifth Semester
  - (i) Dr. Praveen Kumar proposed that the subject CSE 2508 “Software Testing & Quality Assurance” (3 Credits) from Concentration elective should be discontinued.
- (c) Sixth Semester
  - (i) Dr. Praveen Kumar proposed that the subject CSE-2602 “System Programming”(3 Credits) in 6th semester should be renamed as “System Programming & Compiler Construction”(4 Credits) as both the subjects have some common topics and are quite interrelated.
  - (ii) Dr. Ajay Kumar (External Expert) proposed that the Subject CSE-2603 “Advance Networking”(3 Credits) and CSE-2607 “Advance Networking Lab”(1 Credit) in 6th semester should be discontinued as few introductory part of advance networking topics of this subject is already covered in the subject CSE-2301 “Data Communication & Computer Networks” in 3rd semester. Instead a new subject “Cryptography & Networking Security” (4 Credits) should be included in place of CSE2603 & CSE2607.

(iii) Ms. Charu Jain proposed that the subject CSE 2609 "E Commerce and ERP" (3 Credits) from Concentration elective should be discontinued and in place of it new concentration elective CSE2612 "Software Testing & Quality Assurance"(3 Credits) to be introduced.

(c) Seventh Semester

(i) Dr. Praveen Kumar proposed that in 7<sup>th</sup> Semester subjects CSE - 2701 "Compiler Construction (4 Credits) & CSE 2704 "Compiler Construction Lab" (1 Credit) should be discontinued as its major contents are included in new renamed subject CSE-2602 "System Programming & Compiler Construction" of 6<sup>th</sup> semester.

(ii) Dr Sunil Sikka suggested introduction of new subject "Data Warehousing & Data Mining (4 Credits) & Data Warehousing & Data Mining Lab (1 Credit)" as these are important subjects for the Industry and research.

(d) Eighth Semester

(i) Dr. Praveen Kumar & Dr. Sunil Sikka proposed that the subjects "Cryptography & Networking Security"(CSE-2808) 4 Credits & (CSE-2809) "Data Warehousing & Data Mining" 4 Credits should be deleted from the set of concentration electives as it is already included in 7<sup>th</sup> Semester as a core subject.

(ii) Ms. Charu Jain proposed inclusion of two new subjects "E Commerce and ERP" (4 Credits) & "Distributed Operating Systems" (4 credits) as concentration electives in 8<sup>th</sup> semester.

Semester wise comparative table of existing and proposed Programme Structure of B.Tech (CSE) – 210 Credits based on above discussion is as under.

Sem.	Existing B.Tech CSE	Suggested B.Tech - CSE
1 <sup>st</sup>	-	No Change
2 <sup>nd</sup>	-	No Change
3 <sup>rd</sup>	-	No Change
4 <sup>th</sup>	-	No Change
5 <sup>th</sup>	<b>Concentrative Electives:</b> CSE2508: Software Testing & Quality Assurance (3 Credits)	<b>Concentrative Electives:</b> 1. "Software Testing & Quality Assurance" is discontinued.
6 <sup>th</sup>	CSE2602: System Programming (3 credits) CSE2605: System Programming Lab (1 Credit)  CSE2603: Advance Networking (3 credits) CSE2607: Advance Networking Lab (1 Credits)  CSE2309 : E Commerce and ERP	1. CS2602 is re-designated as "System Programming & Compiler Construction"(4 Credits) and its syllabus is revised 2. CS2606 is re-designated as "System Programming & Compiler Construction Lab"(1 Credits). 3. "Advance Networking" and "Advance Networking Lab" are discontinued and in place of these "Cryptography & Networking Security" (4 Credits) is introduced. 4. Under Concentration Elective : Software Testing & Quality Assurance in place of E Commerce and ERP (3 Credits)
7 <sup>th</sup>	CSE2701: Compiler Construction (4 credits) CSE2704: Compiler Construction Lab (1 credit)	"Compiler Construction" and "Compiler Construction Lab" are discontinued and in place of these "Data Warehousing & Data Mining"(4 Credits) and "Data Warehousing & Data Mining Lab" (1 Credit) are introduced.

<p><b>Concentrative Electives:</b></p> <p>CSE2808: Cryptography and Network Security (4 credits)</p> <p>CSE2809 : Data Warehousing and Data Mining (4 credits)</p>	<p>1. "Cryptography and Network Security"(4 Credits) is discontinued and in place of it "E Commerce and ERP" (4 Credits) is introduced.</p> <p>2. "Data Warehousing and Data Mining" (4 Credits) is discontinued and in place of it "Distributed Operating Systems"(4 Credits) is introduced.</p>
<p>There is no change in the overall credits of the Programme i.e 210 credits</p>	

Detail discussions were done on the above points and it was unanimously decided to incorporate all of above changes. It was also clarified that the changes will not affect the total credits of the Programme under revision. Existing and revised Programme structure of B.Tech CSE 210 Credits are attached as Appendices A&B respectively.

**6. Proposal for the Programme Structure of Dual Degrees – B.Tech + MBA**

**B.Tech CSE + MBA, B.Tech ECE+ MBA and B.Tech MAE+ MBA:(280 Credits each)**

(a) **Overview**

- (i) ASET is presently offering three dual degree programmes for their students, i.e. B.Tech - CSE + MBA, B.Tech - ECE +MBA & B.Tech - MAE + MBA.
- (ii) The B.Tech ECE + MBA has students enrolled into both the Academic Years 2012 and 2013 while B.Tech CSE + MBA has students enrolled into Academic Year 2013. There are no students enrolled in B.Tech MAE + MBA Programme.
- (iii) The dual degree programme of B.Tech + MBA is divided into 10 semesters (5 years). This in turn gives advantage to the students to save one full year when compared to doing the two Programmes separately.
- (iv) The dual degree programme structure must therefore include both technical and management subjects which are distributed into 10 semesters (5 Years).

(b) Highlights of the discussion held are covered below:-

- (i) It was unanimously agreed not to change the B.Tech content of the dual degree Programmes. This will give flexibility to the students to exit with B.Tech degree after 4 Years.
- (ii) It was suggested by all the members present to discontinue Open Elective(18Credits) for the dual degree Programmes. This saving of 18 credits can be utilized to introduce Management subjects from 5<sup>th</sup> semester onwards.
- (iii) Following issues came up for discussion with regard to the B Tech content of ECE:-
  - (aa) Dr.Rekha Agarwal suggested that the subject "Antenna and Wave Propagation" should be included in the curriculum of the B Tech (ECE) + MBA Dual Degree. Dr.Priti informed that the subject was already part of the curriculum. No change was therefore warranted.
  - (bb) Dr.Rekha Agarwal suggested that subject "Optical Communication" should be the part of core subjects for ECE students not as open elective. After discussions it was decided to retain it as open elective only.

- (cc) Dr. Janak B Patel suggested that subject "Wireless Communication and Networks" should be added to syllabus. After discussions the subject was added to the list of Concentration Electives in 5<sup>th</sup> Semester (03 Credits).
- (dd) Dr. Janak B Patel also suggested that credits of the subject "Digital Signal Processing" should be increased to 3 instead of 2. The Board decided to keep it 2 credits as the same subject is offered to B.Tech(ECE) students with the same no. of credits.
- (iv) After detailed discussions it was decided to run compulsory two management subjects in 5<sup>th</sup>, 6<sup>th</sup> & 7<sup>th</sup> semesters, and four subjects into 8<sup>th</sup> Semester.
- (v) The last year of the Degree, i.e. 9<sup>th</sup> & 10<sup>th</sup> Semesters can be fully devoted to specialization in different areas of Management.
- (vi) The students opting for the Dual Degree programmes will not go for dedicated summer training as under management domain as B.Tech students already covers 2 summer trainings till 7<sup>th</sup> semester and those credits of Business internships will be used in the Management related theory subjects
- (vii) Mr. Vivek Birla was called upon to present draft Programme Structure of the Management content of the dual degree Programme evolved in the Department. The discussion/suggestions that followed are covered in the succeeding sub paragraphs.
- (aa) In the 5<sup>th</sup> Semester, Dr. Vikas Madhukar (Dy Director, ABS) proposed introduction of subject "Management Process and Organizational Behavior" in place of "Principles of Marketing" since OB covers this subject also as part of their modules. He also suggested inclusion of subject "Accounting for Management" in place of "Financial Accounting" as Accounting for Management is more generic in nature and is better suited for B.Tech students.
- (ab) In the 6<sup>th</sup> Semester, Dr. Vikas Madhukar proposed introduction of subject "Business Environment" in place of "Marketing Management" He suggested marketing subject to be taken up in next semester.
- (ac) In 7<sup>th</sup> Semester, Dr. Vikas Madhukar proposed introduction of subject "Marketing Management" in place of "Productions and Operations Management" He also suggested to do away with subject "Information Technology" as major content of this subject is covered in the B.Tech content. Instead of this he suggested to include "Quantitative Techniques in Management" as this subject will help the students to get exposure Business Statistical details.
- (ad) In 8<sup>th</sup> Semester, Dr. Vikas Madhukar proposed to introduce 4 core subjects. "Financial Management" (2 Credits), Business Research Methods, Operations Management and Knowledge Management (3 Credits each) and suggested to shift Strategic Management to 9<sup>th</sup> Semester
- (ae) For 9<sup>th</sup> & 10<sup>th</sup> Semesters (last year) which are totally devoted to management subjects and offer specialisation, All the members present unanimously agreed to conduct the entire Academic Curriculum under the aegis of ABS. It was further decided to match the Programme Structure of these two semesters with the Programme Structure of 3<sup>rd</sup> and 4<sup>th</sup> Semester of MBA Programme being run in ABS.
- (af) Dr. Vikas Madhukar also suggested introduction of Dual Specialization in Management domain. Student is supposed to select any two domains from the mentioned list of five domains

Under both the Specialization student will be required to study total six subjects by opting any three subjects both in 9<sup>th</sup> and 10<sup>th</sup> Semester from their respective sets.

(ag) In 9<sup>th</sup> Semester Dr. Vikas Madhukar proposed 3 Core subjects. First as 'Strategic Management'. He also suggested to rename 'Managerial Economics' by 'Economic Analysis' and 'Business Laws' by 'Legal Aspects of Business'. The subjects, Organizational Behavior, Business Environment and Business Research Methodology to be omitted as these have already been included in 5<sup>th</sup>, 7<sup>th</sup> & 8<sup>th</sup> semesters respectively.

(ah) In addition to the above following decisions were also arrived at, post deliberations on the same:- Omit Industry Field Work & Summer Training as mentioned into 9<sup>th</sup> Semester draft document.

(ai) In 10<sup>th</sup> Semester Dr. Vikas Madhukar proposed 3 Core subjects. First as 'Management Science' & second 'International Business & Practice'. He also suggested to rename the subject 'Corporate Governance and Business Ethics' as 'Management in Action – Social, Economic and Ethical Issues'.

- The subject Organizational Development in 10<sup>th</sup> Semester to be deleted as it is already included in HR elective list. Similarly, 'Business Communication' to be omitted as the contents of this subject are covered though value added subjects being taught in first eight semesters.
- Credits of Project Evaluation (in Business Domain) fixed at 5 credits.

(c) Comparative Table for the changes proposed in Management content as above is listed below:-

Sem	Drafted Program Structure Before BOS	Proposed Program Structure after BOS
1 <sup>st</sup>	-	No Change
2 <sup>nd</sup>	-	No Change
3 <sup>rd</sup>	-	No Change
4 <sup>th</sup>	-	No Change
5 <sup>th</sup>	1. Principles of Management (removed). 2. Financial Accounting	1. Management Process and Organizational Development (new subject) 2. Renamed as Accounting for Management
6 <sup>th</sup>	1. Marketing Management (removed)	1. Business Environment (New Subject)
7 <sup>th</sup>	1. Production and Operations Management (removed) 2. Information Technology (removed)	1. Marketing Management (new subject) 2. Quantitative Techniques in Management (new subject)
8 <sup>th</sup>	1. Strategic Management (removed)	1. Financial Management (new Subject with 2 credits) 2. Business Research Methods (new subject) 3. Operations Management (new subject) 4. Knowledge Management (new subject)
9 <sup>th</sup>	<p><u>Core Subjects :</u></p> <ol style="list-style-type: none"> <li>1. Business Laws.</li> <li>2. Managerial Economics.</li> <li>3. Organizational Behavior (removed)</li> <li>4. Business Research Methodology (removed)</li> <li>5. Business Environment (removed)</li> </ol> <p>Summer Training : 3 Credits Industry and Field Work Analysis : 2 Credits (removed)</p> <p>Specializations Areas : Five and student to select any One area as his / her specialization only (with 3 subjects to study from that domain)</p>	<p><u>Core Subjects</u></p> <ol style="list-style-type: none"> <li>1. Renamed as Legal Aspects of Business.</li> <li>2. Renamed as Economic Analysis.</li> <li>3. Strategic Management</li> </ol> <p>Summer Training : Deleted</p> <p>Specializations Areas: Five (as being followed for MBA Programme in ABS). Students to select any two areas as his / her specialization with 3 subjects each domain</p>

<p>10<sup>th</sup></p> <p><b>Core Subjects</b></p> <ol style="list-style-type: none"> <li>1. Corporate Governance and Business Ethics. (renamed)</li> <li>2. Organizational Development (removed)</li> <li>3. Entrepreneurship Management (removed)</li> <li>4. Business Communication (removed)</li> </ol> <p>Industry and Field Work Analysis : 2 Credits (removed)</p> <p>Specializations Areas : Five and student to select any One area as his / her specialization only (with 3 subjects to study from that domain)</p>	<p><b>Core Subjects</b></p> <ol style="list-style-type: none"> <li>1. Renamed as Management in Action - Social, Economic and Ethical Issues.</li> <li>2. International Business &amp; Practice (new Subject)</li> <li>3. Management Science (new subject)</li> </ol> <p>Specializations Areas: Five (as being followed for MBA Programme in ABS). Students to select any two areas as his / her specialization with 3 subjects each domain as opted in 9<sup>th</sup> Semester.</p>
<p><b>Total Credits of Dual Degree Programmes – 280 Credits</b></p>	

(d) The Programme Structures of both the dual degree Programmes, i.e. B Tech ECE + MBA, B Tech CSE + MBA and B Tech MAE + MBA are attached as Appendices C, D & E respectively.

**Review of Programme Structure of M.Tech (CSE)**

(a) Dr. Praveen Kumar (HOD-CS) proposed that the subjects CSE4104 "Operating System & Unix" and CSE 4108 "Unix Lab" in 1<sup>st</sup> Semester should be discontinued as these are covered in the B.Tech curriculum. In place of these "Distributed Operating Systems" which is an advanced subject of Operating Systems should be introduced.

(b) Further, CSE4212 "Distributed Operating Systems" should be removed from elective subject of 2<sup>nd</sup> Semester as this has been included a core subject in 1<sup>st</sup> Semester.

(c) Semester wise comparative table of existing and proposed Programme Structure is as under.

Sem.	Existing	Proposed
1	<ol style="list-style-type: none"> <li>1. Operating System &amp; Unix (3 credits)</li> <li>2. Unix Lab (1 credit)</li> </ol>	<ol style="list-style-type: none"> <li>1. "Distributed Operating System" (4 credits).</li> </ol>
2	<ol style="list-style-type: none"> <li>1. Elective-ICSE4212: "Distributed Operating System" (4 credits)</li> </ol>	<ol style="list-style-type: none"> <li>1. CSE4212 is removed.</li> <li>2. Credits remain same.</li> </ol>
	-	No Change
4	-	No Change

(d) Existing and revised Programme Structures of M Tech CSE are attached as Appendices F & G respectively

**8. Proposal for Introduction of M.Tech-Software Engineering(130 credits)**

(a) Presently, M.Tech (CSE) Programme is without any specialization. The members proposed a new M.Tec Programme into CSE with Software Engineering as specialization, in addition to existing M.Tech(CSE). The aim of this proposed Programme will be to build technological base in IT and Software Engineering skills which is also the Industry demand today. This will enable the aspirants to plan, develop and control the quality software projects in terms of cost, time and effort through management skills. The candidates will be able to undertake challenging software projects and carry out research activities. This in turn will enhance the employability of the students: Software Engineers, Consultants, Design Engineers, System Analysts, Project Managers, Specialists in high-er

services and IT product companies. The candidates may also take up research activities in the education/industry sector as academicians, Researchers and Entrepreneurs.

(b) The above Programme is being run in AUUP also. The Programme Structure and the detail syllabus was also recently reviewed by the them. It was unanimously decided to adopt the same. The Programme Structure of M.Tech (Software Engineering) – 130 credits is attached as Appendix H.

9. Proposal for Introduction of Three Years Weekend Programmes, M.Tech - CSE, M Tech - ECE, M Tech – Mechanical Engg (Thermal Engineering) and M Tech - Civil Engg.

(a) The existing regular M Tech Programmes in CSE, ECE, Mechanical Engg and Civil Engg are of 130 credits each and are conducted over a period of two years, i.e. four semesters.

(b) In the discussions that followed, it was decided to follow the existing curriculum except for the value added subjects (14 credits) and Summer Internship (9 credits) which can be done away with.

(c) Due to less no. of contact hours the dissertation work be divided into two components- Pre Dissertation (10 credits) and Dissertation (20 credits). Pre Dissertation to be included in 5<sup>th</sup> semester and Dissertation in 6<sup>th</sup> semester.

(d) Proposed Programme Structures of three years M.Tech Weekend Programmes in ECE, CSE, Mechanical Engg and Civil Engg are attached as Appendices I, J, K & L respectively.

10. Proposal for new PG Programme: M.Tech – VLSI Engineering

(a) Presently, M.Tech (E&C) Programme is without any specialization. The members of BOS proposed a new M.Tech Programme into ECE department with VLSI as specialization, in addition to existing M.Tech(E&C). The aim of this proposed Programme will be to build technological base in electronic design part, as per Industry need. This will enable the aspirants to plan, develop and control the quality projects and the candidates will be able to take challenges of electronic projects and carry out the innovative research. This in turn will enhance the employability of the students as Design Engineers, Project Managers and Specialists in high-end electronics design industry. The candidates may also take up research activities in the education/industry sector as academicians, Researchers and Entrepreneurs.

(b) The above Programme is being run in AUUP also. But members proposed addition of following four subjects to the AUUP Programme Structure. The Programme Structure of M.Tech (VLSI) – 130 credits is attached as Appendix M.

Sr. No.	Additional Subject	Justification
1.	Digital VLSI Design	VLSI design is combination of analog and digital VLSI designs. So the theory of VLSI is incomplete without teaching Digital part of VLSI Design.
2.	Semiconductor Device Physics & Modeling Lab	Modeling subject are incomplete without laboratory support to the theoretical knowledge gained in the subject "Semiconductor Device Physics & Modeling"
3.	Low Power VLSI Design Lab	Design subject are incomplete without laboratory support to the theoretical knowledge gained in the subject "Low Power VLSI Design"
4.	VLSI Testing	The design process is incomplete without testing the design for the probable faults and similarly the design degree is incomplete without studying testing processes, so the subject VLSI Testing.



## Review of Existing Programme Structure of MCA : 170 Credits

(a) Table below lists out semester wise changes after discussion by the members of the Board. It also gives the justification in support.

Sem.	Existing	Proposed
1 <sup>st</sup> Semester		- (No Change)
	IFM4203: "System Analysis & Design" (3 Credits).	In place of it "Management Information Systems" is introduced with same (3 credits).
	IFM4204: "Visual Programming" (3 Credits) & IFM4208: Visual Programming Lab (1 Credit).	In place of it "Web Technologies" (3 Credits) & "Web Technologies Lab" (1 Credit) is introduced. Unix Lab (1 credit) is introduced.
2 <sup>nd</sup> Semester	IFT4201: "Data Structure using C Languages" (4 Credits)	Its credit has been decreased by 1.
	IFT4207: "Data Structure using C Languages Lab" (1 Credits)	Its credit has been incremented by 1.
	IFT 4206: Optimisation Techniques (4 Credits)	Its credit has been decreased by 1
	Total Credits :27	Total Credits:27
<ul style="list-style-type: none"> <li>"System Analysis &amp; Design" is a very general and obsolete subject and in comparison to this "Management Information Systems" is more relevant and specific to the Programme.</li> <li>"Visual Programming" is out-dated course and "Web Technologies" is more relevant to the industry needs.</li> <li>More stress is requisite for "Data Structure using C Languages Lab".</li> </ul>		
3 <sup>rd</sup> Semester	IFT4304: "Organizational Behavior" (4 Credits).	It has been discontinued and no subject is added in its place.
	IFT4301: "Computer Graphics" (4 Credits).	Its credit has been decreased by 1.
	IFT 4302: "Object Oriented programming with C++"	Its credit has been decreased by 1
	IFT 4305: Data Communication and Computer Networks	Its credit has been decreased by 1
	IFT4306: "Network Fundamentals" (3 Credits) & IFT4309: "Network Fundamentals Lab" (1 Credit).	In place of it "Design & Analysis of Algorithms" (4 Credits) is introduced.
	IFT4308: Database Management System Lab (1 credit).	Its credit has been incremented by 1.
		Computer Graphics Lab (1Credit) is introduced.
Total Credits of 3 <sup>rd</sup> Semester was 35 Credits	Total Credits changed to 30 Credits	
<ul style="list-style-type: none"> <li>"Organizational Behavior" is a core HR oriented subject which is not relevant for MCA students.</li> <li>"Network Fundamentals" is quite similar to "Data Communication Computer Networks" (A core subject in the MCA Program Structure).</li> <li>"Design &amp; Analysis of Algorithms" is very fundamental subject in the field of Computer Science &amp; its inclusion in the MCA Program Structure is absolutely essential.</li> <li>More emphasis is required for "Database Management System Lab".</li> </ul>		
4 <sup>th</sup> Semester		"Open Source Technologies" (3Credits) is introduced.
	IFT4402 "Internet & Java Programming" (4 Credits).	Its credit has been decreased by 1.
	Elective-1 Set (4 Credits)	In its place "Fundamentals of E Commerce &ERP"(3 Credits) is introduced as compulsory subject.
	In Elective-2 IFT4407 Software Project Management (4 Credits)	In its place "Mobile Computing" (4 Credits) is introduced.
	IFT4411 "Internet & Java Programming Lab" (1 Credit).	Its credit has been incremented by 1.
	IFT4410 "Software Engineering Lab" (1Credit)	In its place "Open Source Technologies Lab" (1Credit) is introduced.
Total Credits of 4 <sup>th</sup> Semester was 25 Credits	Total Credits changed to 27Credits	
<ul style="list-style-type: none"> <li>"Open Source Technologies" is quite relevant to the Industry.</li> <li>"Fundamentals of E Commerce &amp; ERP" is also quite relevant for the MCA Programme.</li> <li>"Open Source Technologies Lab" is more pertinent &amp; useful than "Software Engineering Lab".</li> </ul>		

5 <sup>th</sup> Semester	1.IFT4502: "Compiler Design" (4 credits). 2.IFT4503: "UNIX & SHELL Programming" (3 Credits). 3.IFT4513: "LAN Switching & Wireless" (2 Credits). 4.IFT4514: "Accessing the WAN" (2Credits). 5.Concentration Elective -I without Lab(4Credits). 6.IFT4515: "UNIX & SHELL Programming Lab" (1 Credit). 7.IFT4517 : "Accessing the WAN Lab" (1 Credits) 8.IFT4516 : "LAN Switching & Wireless Lab" (1 Credits).	In place of subjects, mentioned at (Sr No.1-8) on the left hand side, the following subjects are introduced. "Distributed Operating System" (3 Credits). ".Net with C#" (3 Credits). ".Net with C# Lab" of (1 Credits). "Cryptography & Network Security" (4 Credits).
	(Concentration Elective with Lab) IFT4505 : "Distributed Database" (3 Credits). IFT4508 : "Distributed Database with Lab" (1 Credit).	In their place "Digital Image Processing" (3 Credits) & "Digital Image Processing Lab" (1 Credit) are introduced.
	(Concentration Elective with Lab) IFT4506 : "System Programming" (3 Credits). IFT4509 : "System Programming Lab" (1 Credit).	In its place "Data Warehousing & Data Mining" (3 Credits) & "Data Warehousing & Data Mining Lab" (1Credit) is introduced.
	<b>Total Credits of 5<sup>th</sup> Semester :33 Credits</b>	<b>Total Credits of 5<sup>th</sup> Semester :26 Credits</b>

- The "Compiler Design" is not very relevant from the industry point of view.
- We are already teaching "Operating System" as a core subject therefore "Unix & Shell Programming" is removed & ". Net with C#" is introduced as per industry requirement.
- "LAN switching & Wireless" & "Accessing the WAN" are also removed because they are very specific & are not quite relevant for MCA. Furthermore, "Cryptography & Network Security" is absolutely essential for MCA students.
- "Data Warehousing" is discontinued from the concentration elective without lab & is introduced with a re-designation "Data Warehousing & Data Mining" in the concentration electives with lab.
- "Distributed Operating Systems" & "Digital Image Processing" are also introduced as core & elective subjects respectively Both these subjects are research oriented subjects & are in great demand.

In 6<sup>th</sup> Semester, IFT4601: "Seminar" of 6 Credit is Discontinued. The credits of IFT4637: "Project (Dissertation)" has been incremented by 6.

- (b) The overall credits of the MCA has changed from 180 Credits to 170 Credits
- (c) Existing and proposed Programme Structures of MCA are attached as Appendices N&O respectively.

12. Proposal for Lateral Entry in MCA (2<sup>nd</sup> Year) for BCA Students

(a) Dr. Parveen Kumar proposed lateral entry of BCA qualified students of our University by taking admission in 2<sup>nd</sup> year of MCA. This was justified as all the subjects covered in the first year of MCA are included in the BCA Curriculum.

(b) All Board members were in favour of implementing the above proposal. It was further suggested by Dr Ajay Kumar that we should open up lateral entry for the BCA qualified students from other institutions also, provided they have covered all the subjects of MCA first year in their BCA curriculum. This was also agreed by all members.

13. Proposal for New 5 Years Dual Degree Programme: BCA + MCA (280 credits)

(a) Presently AIIT is offering 3-year BCA programme of 150 credits and 3-year MCA programme of 180 credits. It is now proposed to offer w.e.f. session 2014 – 2015 a dual degree programme into BCA+MCA of 280 credits.

(b) There are 18 credits for open electives in BCA (3 credits per semester). It was decided that these open electives may not be offered in the proposed dual degree programme so as to save credits for essential core subjects. It was decided to introduce following subjects in place of the open electives.

Semester	Subject	Credits
1	Introduction to IT-1	2
	Introduction to IT-1 Lab	1
2	Introduction to IT-2	2
	Introduction to IT-2 Lab	1
3	Object Oriented Analysis & Design	3

(c) There are some subjects, which exist in the BCA Programme as well as MCA Programme. Post discussions it was decided to remove these subjects from the MCA Programme and in place introduce some new subjects which have relevance in today's environment and are as per the Industry demand. Details are as given below:-

Duplicate Subjects Deleted			New Subjects Added		
Subject	Sem	Credits	Subject	Sem	Credits
Computer Graphics	3	4	Distributed Operating System	7	4
Object Oriented Programming with C++	3	4	Advanced Java with Lab	8	5
Database Management System	3	4	Theory of Computation		4
Software Engineering	4	3	Emerging Technologies-I	9	4
Internet & Java Programming	4	4	Soft Computing		4
Artificial Intelligence	5	3	Advanced Networking with Lab	9	5
Compiler Design	5	4	ASP.Net with Lab		6
Unix & Shell Programming	5	3	Emerging Technologies-II		4
Software Engineering	4	3	Grid Computing		5
			Digital Image Processing with Lab		5
			Parallel Processing	5	

(d) Proposed Program Structure of 5 Years BCA+MCA Dual Degree Programme is attached as per Appendix P.

14. **Review of Existing Programme Structure of MSc (NT & M) : 130 Credits**

(a) Existing Programme Structure of M Sc (NT & M) was discussed at length and changes suggested are covered in the Table below.

Sem.	Existing	Proposed
1 <sup>st</sup> Semester	IFT4108: "Data Communication (4 Credits)"	In place of it "Distributed Systems (4 Credits)" is introduced.
	IFT4109: "Core Hardware" is renamed.	Core Hardware is renamed as "Network Devices and Hardware"
	IFM4113: "System Administration-I with Lab (5 Credits)"	System Administration-I is shifted to 2 <sup>nd</sup> semester. In place of it "Mobile Computing (3 Credits)" is introduced.
	Total Credits of 1 <sup>st</sup> Semester was 32 Credits	Total Credits changed to 30 Credits
<ul style="list-style-type: none"> <li>• Contents of "Data Communication" are covered under the course Network Fundamentals and other subjects.</li> <li>• As subject, "Core Hardware" includes fundamental concepts of hardware and network devices, therefore "Network Devices and Hardware" is more appropriate title.</li> <li>• Distributed and Mobile computing are being heavily used in the industries. To emphasis on these Distributed System and Mobile Computing should be taught as core subjects.</li> </ul>		
2 <sup>nd</sup> Semester	IFT4210: "Wireless LAN"	Wireless LAN is renamed as "Wireless Networking" and syllabus is revised.
	IFT4211: "Wireless Communications (4 Credits)"	In place of it "Network Management" is introduced with same 4 credits.
	IFT4214: "LAN Switching and Wireless".	"LAN Switching and Wireless" is renamed as "LAN Switching".
	IFT4215: System Administration-II with Lab is (6 Credits).	System Administrator-II is shifted to 3 <sup>rd</sup> semester. In place of it "System Administration-I with Lab (3+2 credits)" is introduced.
	Total Credits of 2 <sup>nd</sup> Semester was 31 Credits	Total Credits changed to 30 Credits.
<ul style="list-style-type: none"> <li>• Contents of "Wireless Communications" are covered by "Wireless Networking". Therefore it is discontinued.</li> <li>• In existing structure "Network Management" is part of 4<sup>th</sup> Semester, now it is proposed in 2<sup>nd</sup> Semester.</li> <li>• Shifting of "Network Management" from 4<sup>th</sup> to 2<sup>nd</sup> semester is due to the fact that student should study it early in programme.</li> </ul>		
3 <sup>rd</sup> Semester	IFT4310: Satellite Communication (4 Credits)	Subject is discontinued.
	IFT4311: Optical Technologies (4 Credits).	Subject is discontinued.
	IFT4316: System Administration-III with Lab is (6 Credits)	In place of it "System Administration-II with Lab (4+2) credits" is introduced.
	IFT4317: Accessing the WAN Lab(1 Credit)	Credit has been increased by 1.
Total Credits of 3 <sup>rd</sup> semester was 37 Credits.	Total Credits changed to 30 Credits.	
<ul style="list-style-type: none"> <li>• Eventually, System Administration-III is omitted in proposed programme structure as essential contents of System Administration course are covered in System Administration-I &amp; II.</li> <li>• Satellite Communication and Optical Technologies are discontinued, as basics of both the subjects are covered under other subjects and both subjects are more specialized subjects which should come under only specialization.</li> </ul>		
4 <sup>th</sup> Semester	IFT4414: Network Management.	"Network Management" is shifted to 2 <sup>nd</sup> semester.
	IFT4415: Emerging Technologies-II.	Subject is discontinued
	IFT4437: Project/Industrial Training (12 Credits)	Credits of "Project/Industrial Excellence" is revised to 30.
	Total Credits of 4 <sup>th</sup> Semester was 30 Credits	Total Credits changed to 40 Credits
<ul style="list-style-type: none"> <li>• Emerging Technology-II is discontinued because it is identified that Emerging Technology-I is sufficient.</li> <li>• As per standard credit system of flexi structure, credits of final Project/Industrial Training are revised.</li> </ul>		

(b) Existing and revised Programme Structures of M Sc (NT & M) is attached as attached as Appendices Q&R respectively.

5. Review of syllabus of "Fuzzy Logic and Neural Networks" (BEL 706/EEE2508) with Lab for B.Tech-Electrical and Electronics Engineering

The existing syllabus of course "Fuzzy Logic and Neural Networks" (Theory and Lab) does not have any contents related to Fuzzy Logic. Therefore the existing syllabus is required to be re-designed by including the contents of both Fuzzy Logic & Artificial Neural Networks. After detail discussions the syllabus was evolved. The comparative table of existing and proposed syllabus is as under.

Existing Theory Syllabus	Proposed Theory Syllabus
<ul style="list-style-type: none"> <li>• Complete course is covered in five modules                             <ul style="list-style-type: none"> <li>○ Module I: Introduction</li> <li>○ Module II: Supervised Learning</li> <li>○ Module III: Unsupervised Learning</li> <li>○ Module IV: Associated Models</li> <li>○ Module V: Optimization Methods</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Complete course is covered in five modules                             <ul style="list-style-type: none"> <li>○ Module I: Fuzzy Logic Fundamentals</li> <li>○ Module II: Fuzzy Operations</li> <li>○ Module III: Fuzzy Logic: Proposition &amp; Quantifiers</li> <li>○ Module IV: Artificial Neural Network Fundamentals</li> <li>○ Module V: Learning and Associative Memory</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• All modules cover the contents of "Artificial Neural Networks" only.</li> <li>• No module covers the contents of "Fuzzy Logic".</li> </ul>	<ul style="list-style-type: none"> <li>• Three modules (1-3) cover the contents of "Artificial Neural Networks" and two modules (4-5) covers the contents of "Fuzzy Logic".</li> <li>• All the essential contents of "Artificial Neural Networks" and "Fuzzy Logic" are included.</li> </ul>
<ul style="list-style-type: none"> <li>• Total course credits are 4.</li> </ul>	<ul style="list-style-type: none"> <li>• Credits remain same.</li> </ul>

Existing Lab Syllabus	Proposed Lab Syllabus
<ul style="list-style-type: none"> <li>• Contains total ten experiments to implement following concepts:                             <ol style="list-style-type: none"> <li>1. Artificial Neural Networks and their Biological Motivation</li> <li>2. Basic structures and properties of ANN</li> <li>3. Perceptron, its learning law and applications</li> <li>4. Adaline- The adaptive linear element, its structure and learning laws</li> <li>5. Feed forward multilayer neural networks</li> <li>6. Back propagation algorithm</li> <li>7. Applications of multilayer neural networks</li> <li>8. Advanced learning algorithms for multilayer perceptrons.</li> <li>9. Hopfield networks</li> <li>10. RBF networks</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• Contains total ten experiments to implement following concepts:                             <ol style="list-style-type: none"> <li>1. Introduction and usage of MatLab.</li> <li>2. Basic structures and properties of Fuzzy Logic in Matlab</li> <li>3. Implementation of fuzzy union of two given fuzzy sets</li> <li>4. Implementation of fuzzy Intersection of two given fuzzy sets</li> <li>5. Implementation of fuzzy Complements of given fuzzy sets</li> <li>6. Implementation of Fuzzy rules by using membership function</li> <li>7. Basic structures and properties of ANN in Matlab</li> <li>8. Applications of multilayer neural networks</li> <li>9. Advanced learning algorithms for multi layer perceptions</li> <li>10. Implementation of gradient decent rules</li> </ol> </li> </ul>
<ul style="list-style-type: none"> <li>• All Experiments are based on the concepts of "Artificial Neural Network" only.</li> </ul>	<ul style="list-style-type: none"> <li>• Experiment covers the both topics "Fuzzy Logic" and "Artificial Neural Network".</li> <li>• Purpose of Experiment no. 1 is to Introduction to MatLab tools. Experiment no. 2 to 6 are based on "Fuzzy Logic" and experiment no 7 to 10 are based on "Artificial Neural Networks"</li> </ul>
<ul style="list-style-type: none"> <li>• Course credit is 01</li> </ul>	<ul style="list-style-type: none"> <li>• Credit remains same.</li> </ul>

Existing and proposed syllabus of course under revision (Theory and Lab) are attached as Appendices S & T respectively.

6. Proposal for Introduction of Three Years Evening Programme, BCA

- (a) The existing regular BCA Programme is of 150 credits & is conducted over a period of three years, six semesters
- (b) In the discussions it was decided to follow the existing curriculum except the open elective subjects (18 credits)
- (c) The proposed Programme is of 132 credits.

Proposed Programme Structure of three years BCA- Evening is attached as Appendix U.

17. Review of B Tech (AE) Curriculum.

(a) First Year Curriculum of all B Tech Programmes is common. The Stream related specialized subjects commence with effect 3<sup>rd</sup> Semester. In light of this, it was decided to shift the Subject Elements of Space Systems, currently scheduled in 2<sup>nd</sup> Semester and being conducted for only B Tech (AE) students to 4<sup>th</sup> Semester. It will also help overcome scheduling problems related to the Time Table.

(b) The subject 'Aircraft Design' should follow after 'Aircraft Stability and Controls' and 'Aircraft Performance' subjects and these three subjects should not be in the same semester. Thus it was discussed and decided to shift the subjects of 'Aircraft Stability and Controls' and 'Aircraft Performance' from sixth semester to fifth semester.

(c) The impact of subject of 'Aircraft Stability and Controls' will also effect on open elective track of Aerospace Engineering. Hence the mentioned above subject will be shifted from 6<sup>th</sup> Semester to 5<sup>th</sup> Semester and therefore the subject mentioned 'Aircraft System' as in 5<sup>th</sup> Semester will be shifted from 5<sup>th</sup> Semester to 6<sup>th</sup> Semester keeping other subjects of the track as it is.

The existing and revised Programme Structure of B Tech (AE) are attached as Appendix V & W respectively.

18. Review of Open Electives Minor Track of Aerospace Engineering, Cloud Computing & Mechanical Engineering

In the discussion that followed, following changes were approved unanimously by all the members.

a) **Aerospace Engineering Minor Track** - The existing subject "Aircraft Structure" which is taught in the Seventh Semester should be replaced with "Aircraft Performance" with same three credits. The change was proposed since Aircraft Structure is a core and advanced Aerospace Engineering subject which is difficult to comprehend without prior basic knowledge. These changes will be applicable from 2012 - 2016 Batch onwards.

The existing and revised Minor Track of Aerospace Engineering are attached as Appendix X respectively

b) **Cloud Computing Minor Track** - The track of Cloud Computing was of 15 credits since it had no subject mentioned in 4<sup>th</sup> semester. The track has now been revised to fill the gap and make it 18 credits as per the requirements of flexi document. Minor changes in the scheduling has also been done to synchronize with regular curriculum These changes will be applicable from 2013 - 2017 Batch onwards

The existing and revised Minor Track of Cloud Computing are attached as Appendix Y respectively

c) **Mechanical Engineering Minor Track** - The track of Mechanical Engineering has been revised keeping the subjects same, but the sequence has been changes since few of the subjects are to be taught as pre requisite for some other subjects. Also it was considered that subjects taken in open elective tracks should synchronize with regular curriculum. These changes will be applicable from 2013 - 2017 Batch onwards

The existing and revised Minor Track of Mechanical Engineering are attached as Appendix Z respectively

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May  
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