Item 19.05
Structure for the proposed M.Tech. Degree Program
(Dr. G P Srivastava, Director, IcfaiTech HQ will brief the meeting)

A proposal to start M.Tech. Degree Program at IcfaiTech was proposed and discussed during the last meeting and was required to be modified. A modified proposal is presented hereunder for the consideration and approval of the Council.

A)   Requirement of units for M.Tech. Degree:

Total no. of units required   :   80 to 90, with a break up as follows:

(a)   **Course work**   :   50 (Min.) Units
        (other than Dissertation / Seminar)

(b)   **Dissertation / Seminar**   :   30 (Min.)

B)   Course Work

Named courses for each degree will be chosen from the list of courses earmarked for the degree. For electives, courses can be drawn from across various disciplines, subject to the approval by the appropriate committee. Total number of courses is 12, including one course each on Technical Communication and Professional Practice and 2 Project / Lab courses. The higher level courses are designed to be mostly autonomous learning type and are characterized by minimum formal contact and maximum self-study under immediate supervision by the teacher.

C)   Dissertation

The registration for Dissertation is normally done after completion of the named courses. Dissertation work starts in the first semester of the second year and concludes by the end of the second semester. Total units to be completed for Dissertation is 30, which may be bifurcated as 10 units in first semester and 20 units in the second semester of the second year. The Dissertation, whether registered for full or partial units, will be awarded a Non-letter grade, viz., **Excellent, Very Good, Good,** or **Fair,** at the end of the corresponding semester. Registration in Dissertation course will invariably be accompanied with that in the **Seminar** course.

The **Semester-wise patterns** for the proposed M.Tech. degree programs are presented in **Annexure 19.05.**

M.Tech. Biotechnology

Input Qualification: B.Tech in Biotechnology/Chemical or Biochemical Engineering; M.Sc (Life Sciences), B.Pharmacy, or equivalent

Year		First Semester	U		Second Semester	U
I	BT 506	Advanced Cell & Molecular Biology	4	BT 510	Cell Culture Technology	4
	BT 509	Medical Biotechnology	4	BT 604	Advanced Bioinformatics	4
	BT 601	Biochemical & Bioprocess Technology	4	IUT 602	Professional Practice	4
	IUT 601	Technical Communication	4	IUT 603	Advanced Project	5
	IUT 604	Advanced Lab	4 20	--	Elective I	- 2-1
II	--	Elective II	-			
	--	Elective III	-	TS 601	Dissertation	20
	TS 601	Dissertation	10	TS 602	Seminar	1
	TS 602	Seminar	1			

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List of Elective Courses from Discipline

Course #	Course Title	Units
BT 501	Molecular Immunology	4
BT 502	Biostatistics and Biomodelling	4
BT 507	Industrial Microbiology	4
BT 508	Human Genetics	4
BT 602	Molecular Modeling and Drug Design	4
BT 603	Molecular Virology	4

Dissertation does not count towards CGPA.

A&B - Design Elective in Remote Sensing.

Electives are not restricted to each area.

Draft of Regulations for Post Graduates.
Existing regulations will apply to new Programs.

M.Tech. Communication Engineering

Input Qualification: B.Tech in ECE or equivalent

Year	First Semester		U	Second Semester		U
I	EC 503	Advanced Digital Signal Processing	4	EC 603	Advanced Digital Communication	4
	EC 601	Statistical Signal Processing	4	EC 604	Computer Communication Networks	4
	EC 602	Coding Theory & Practice	4	IUT 602	Professional Practice	4
	IUT 601	Technical Communication	4	IUT 603	Advanced Project	5
	IUT 604	Advanced Lab	4	--	Elective I	-
II	--	Elective II	-			
	--	Elective III	-	TS 601	Dissertation	20
	TS 601	Dissertation	10	TS 602	Seminar	1
	TS 602	Seminar	1			

List of Elective Courses from Discipline

Course #	Course Title	Units
EC 504	Multimedia Communications	4
EC 505	Spread Spectrum Techniques	4
EC 605	Image Communication	4
EC 606	Adaptive Signal Processing	4
EC 607	Radar Signal Processing	4
EC 608	Speech Signal Processing and Compression	4

M.Tech. Computer Science

Input Qualification: B.Tech in Computer Science or equivalent

Year	First Semester		U	Second Semester		U
I	CS 501	Design and Analysis of Algorithms — *Laxman / Sanjeev / Nishant*	4	CS 601	Cryptography & Network Security — *Laxman / Dineet*	4
	CS 502	Internetworking with TCP/IP *Dineet / Laxman*	4	CS 602	Machine Learning — *Sanjeev*	4
	CS 504	Advanced Computer Architectures — *Mahesh / Nishant*	4	IUT 602	Professional Practice	4
	IUT 601	Technical Communication	4	IUT 603	Advanced Project ✓	5
	IUT 604	Advanced Lab → *Mahesh / Nishant*	4	--	Elective I ✓	-
II	--	Elective II	-			
	--	Elective III	-	TS 601	Dissertation	20
	TS 601	Dissertation	10	TS 602	Seminar	1
	TS 602	Seminar	1			

List of Elective Courses from Discipline

Course #	Course Title	Units
CS 503	Geographic Information Systems	4
CS 603	Foundations of Automatic Verification	4
CS 604	Natural Language Processing	4
CS 605	Statistical Signal Processing	4
CS 606	Hardware-Software Co-design	4
CS 607	Software for Embedded Systems	4
CS 608	Software Architectures	4

M.Tech. Microelectronics & VLSI Design

Input Qualification: B Tech in CSE / ECE / EEE or equivalent

Year		First Semester	U		Second Semester	U
I	MEL 601	HDL-based Digital Design	4	MEL 604	Testing and Verification of VLSI Circuits	4
	MEL 602	Advanced VLSI Technology	4	MEL 608	CAD Algorithms for VLSI Design	4
	MEL 605	CMOS Analog VLSI Design	4	IUT 602	Professional Practice	4
	IUT 601	Technical Communication	4	IUT 603	Advanced Project	5
	MEL 603	VLSI Physical Design Lab	4	--	Elective I	-
II	--	Elective II	-			
	--	Elective III	-	TS 601	Dissertation	20
	TS 601	Dissertation	10	TS 602	Seminar	1
	TS 602	Seminar	1			

List of Elective Courses from Discipline

Course #	Course Title	Units
MEL 501	Microelectronic Devices and Circuits	4
MEL 502	Advanced Computer Architecture	4
MEL 503	Advanced Digital Signal Processing	4
MEL 607	Introduction to MEMS	4
CS 606	Hardware-Software Co-design	4
CS 613	Microprocessor –Based System Design	4