Curriculum Model

Integrated Degree Programme

(B.Tech+M.Tech)

K L UNIVERSITY

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1.0 CONTEXT

K L University offers a five year full time Integrated Master of Technology (M.Tech) Programme in different disciplines of Engineering. Engineering professionals need dynamism, innovation, creativity and entrepreneurial instincts. K L U Integrated Programme stands committed to providing a professional ambience perfectly conducive for acquiring the key technical competencies. The cutting edge curriculum designed for the programme strives to impart students the necessary knowledge, managerial skills and decision making abilities shuffled with right attitude. The curriculum lays a firm foundation for a thorough and in depth knowledge levels along with conceptual and analytical understanding in their respective field of specialization. This programme is designed to blend current advanced theories and practices of emerging trends in the field of engineering with an aim of moulding the students into responsible citizens, competent and visionary entrepreneurs and managers. The programme is uniquely comprehensive and helps students in developing an in depth knowledge they opt for in their respective branch of engineering. Learning is facilitated through an accelerated manner comprising summer term classes and thus saving one academic year for advanced learners. The curriculum delivery is through a mix of classroom interactions, seminars, conferences, case studies, live projects, simulations, group discussions, research projects etc.

2.0 VISION AND MISSION OF THE UNIVERSITY

Vision

To be a globally renowned University.

Mission

To impart quality higher education and to undertake research and extension with emphasis on application and innovation that cater to the emerging societal needs through all-round development of students of all sections enabling them to be globally competitive and socially responsible citizens with intrinsic values.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES

The Programme Educational Objectives (PEOs) are the statements that describe the expected achievements from the programme. They are guided by global and local needs, vision of the institution, long term goals etc. The Programme Educational Objectives of Integrated M.Tech Programme includes:

I. To mould students to become effective global technocrats in the competitive environment of modern society.
II. To mould students with a strong foundation in Engineering practices of Technology, different industrial areas and research environment.
III. To emphasize on application oriented learning.
IV. To develop communication, analytical, decision-making, motivational, leadership, problem solving and human relations skills in the students.
V. To inculcate professional and ethical attitude in students.
VI. To pursue lifelong learning as a means of enhancing knowledge and skills necessary to contribute to the betterment of profession.

4.0 PROGRAMME OUTCOMES

The Integrated M.Tech programme is designed to meet the following outcomes:

a. Ability to practically apply various technological concepts.
b. Demonstrate knowledge of innovative and modern engineering practices.
c. Ability to apply the specialized expertise in relevant practical fields.
d. Ability to communicate effectively and professionally.
e. Ability to solve critical practical oriented real time problems.
f. Ability to manage people effectively and become good leaders.
g. Develop professional and ethical attitude and become socially responsible citizens.
h. Ability to carry out cutting edge research in the emerging areas.
i. Understand the global business scenario.
j. Demonstrate their role as engineers or entrepreneurs and contribute their knowledge and skills to the society.

5.0 CREDITS IN INTEGRATED M.TECH PROGRAMME

Learning well is understood as acquiring knowledge and skills at higher cognitive levels, which include Apply, Analyze, Evaluate and Create. Such learning is ensured by making it heavily activity based and practical oriented rather than lecture oriented. Based on the nature of the course the learning pedagogy will change that can be reflected by **L-T-P** structure for a course. **'L' (L**ecture classes) stands for class room interactive sessions.

'T' stands for **T**utorial sessions for reinforced learning through participatory discussion/self-study/desk work and such other novel methods that make a student imbibe and assimilate more effectively the contents delivered in the lecture classes.

'**P'** stands for **P**ractice/**P**ractical sessions for laboratory/field studies that equip students to acquire requisite competent skills. A credit is defined as one hour lecture or two hours of laboratory per week or one hour of tutorial per week in a semester.

6.0 CREDIT DISTRIBUTION

The Ten semesters Integrated M.Tech Programme offered in various disciplines and streams by different departments of the institute are based on the credit system which provides a student with wide choice of courses. Each discipline comprises several core and elective courses and project work. The course structure of the Integrated M.Tech Programme is indicated below:

The Programme is spread over a period of **Ten** semesters that embodies 59 courses with a credit load of 256 credits.

S. No	Type of the course	Number	Percentage
1	Humanities and Social Sciences (HSS)	6	**8.9**
2	Basic Sciences (BS)	7	**10.4**
3	Engineering Sciences (ES)	8	**11.9**
4	Core courses	24	**35.8**
5	Electives	14	**20.8**
6	Term Paper	1	**1.4**
7	Seminar	6	**8.9**
8	Industrial Training	1	**1.4**
9	Dissertation work	1	**1.4**
	Total	**67**	**100**

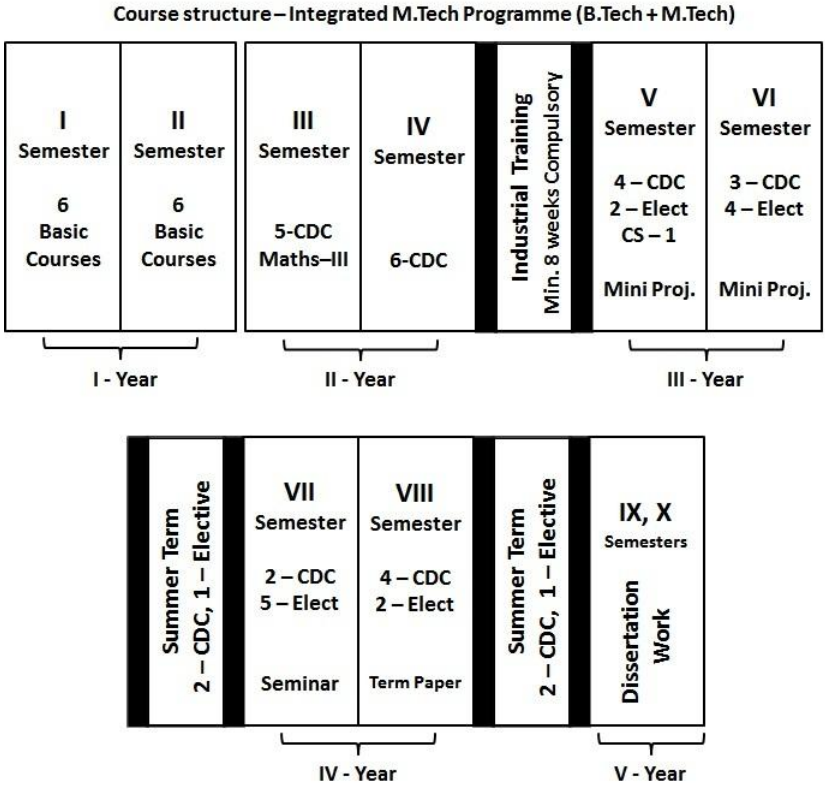
Core Courses

A paper which should compulsorily be studied by a candidate as a core requirement to complete the requirements of a degree is defined as a Core paper. It is mandatory for a student to undergo eight core courses.

Elective Courses

The students can pursue elective courses in different areas of his interest. Each student must choose four elective courses.

7.0 COURSE STRUCTURE



FIVE YEAR INTEGRATED DEGREE PROGRAMME

(B.Tech + M.Tech)

I Semester						
S No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-HS101	English	2	0	2	3
2	11-HS103	Energy and Society	3	0	0	3
3	11-BS101	Engineering Mathematics	3	1	0	4
4	11-BS103	Engineering Physics	3	0	2	4
5	11-ES101	Problem Solving Through Programming	3	0	2	4
6	11-ES105	Workshop Practice	0	0	4	2
		Total Credits	**14**	**1**	**10**	**20**

II Semester						
S No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-HS102	Technical communication Skills	2	0	2	3
2	11-BS102	Advanced Engineering Mathematics	3	0	2	4
3	11-ES102	Measurements	3	0	2	4
4	11-BS105	Ecology and Environment	2	0	0	2
5	11-BS104	Engineering Chemistry	3	0	2	4
6	11-ES103	Engineering Materials	3	0	0	3
7	11-ES104	Engg Graphics with CAD	0	0	4	2
8	11-MP101	Mini project -1	0	0	2	1
		Total Credits	**16**	**0**	**14**	**23**

III Semester						
S No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-ES201	Engineering Science 1	3	1	0	4
2	11-ES202	Engineering Science 2	3	0	2	4
3	11-CS201	Core 1	3	1	0	4
4	11-ES203	Engineering Science 1	3	1	0	4
5	11-CS202	Core 2	3	0	2	4
6	11-CS203	Core 3	3	0	2	4
7	11-MP201	Mini Project – 2	0	0	2	1
8	-	Games Certificate	0	0	2	NC
		Total Credits	**18**	**3**	**8**	**25**

IV Semester						
S No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-BS201	Basic Science 1	3	1	0	4
2	11-BS202	Basic Science 2	3	1	0	4
3	11-CS204	Core 4	3	0	2	4
4	11-CS205	Core 5	3	0	2	4
5	11-CS206	Core 6	3	0	2	4
6	11-CS207	Core 7	3	0	0	4
7	HS 1	HS 1 (ELECTIVE)	3	0	0	3
8	-	Soft Skills	0	0	2	NC
		Total Credits	**21**	**3**	**6**	**27**
Industrial Training (Minimum of 8 Weeks Compulsory)			0	0	0	*

V Semester						
S No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-CS301	Core 8	3	0	2	4
2	11-CS302	Core 9	3	1	0	4
3	11-CS303	Core 10	3	0	2	4
4	11-CS304	Core 11	3	0	2	4
5	PC-1	Professional Elective 1	3	0	0	3
6	OE-1	Open Elective 1	3	0	0	3
7	HS 2	Humanities 1	3	0	0	3
		Total Credits	**21**	**1**	**6**	**25**

VI Semester						
S No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-CS305	Core 12	3	1	0	4
2	11-CS306	Core 13	3	0	2	4
3	11-CS307	Core 14	3	0	2	4
4	PC-2	Professional Elective 2	3	0	0	3
5	PC-3	Professional Elective 3	3	0	0	3
6	OE-2	Open Elective 2	3	0	0	3
7	HS-3	HS 3 (ELECTIVE)	3	0	0	3
8	11-MP301	Mini Project 3	0	0	2	1
		Total Credits	**21**	**1**	**6**	**25**
Summer Term **2 – CDC, 1 – Elective 12-Credits**						

VII Semester						
S No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-CS401	Core 17	3	0	2	4
2	11-CS402	Core 18	3	0	2	4
3	PC-4	Professional Elective 5	3	0	0	3
4	PC-5	Professional Elective 6	3	0	0	3
5	OE-3	Open Elective 3	3	0	0	3
6	OE-4	Open Elective 4	3	0	0	3
7	OE-5	Open Elective 5	3	0	0	3
8		Seminar	0	0	4	2
Total Credits			**21**	**0**	**8**	**25**

VIII Semester						
S. No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	11-CS403	Core 19	3	1	2	5
2	11-CS404	Core 20	3	1	2	5
3	11-CS405	Core 21	3	1	0	4
4	11-CS406	Core 22	3	1	0	4
5	PC-6	Elective 7	3	0	0	3
6	OE-6	Elective 8	3	0	0	3
7	11-TP401	Term paper	0	0	4	2
		Total Credits	**18**	**4**	**8**	**26**
Summer Term **2 – CDC, 1 – Elective 12-Credits**						

IX & X Semester			
S No	**Course Code**	**Course Title**	**Credits**
1		Dissertation Work	**36**

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