

# **ACADEMIC RULES & REGULATIONS**

## **M.Tech** **(Master of Technology)**



## **K L UNIVERSITY**

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## **INTRODUCTION**

KL University – hand book enables the student in understanding the general guidelines governing the regulations and provisions contained in varied streams of engineering and technology, under the purview of both graduate study (B.Tech, BBA/BHM, B.Com (Honours) & Post graduate study (M.Tech, MCA, MBA, M.Sc.) and academic research programmes (Ph.D).

### **a) History**

K L University has been established in the year 2009 after having received this distinction from University Grants Commission (UGC) under the section 3 of UGC Act of 1956. It is an offshoot of the renowned K L College of Engineering (KLCE) which was established in the year 1980. KLCE was made autonomous in the year 2006 and accorded the deemed to be University status in 2009.

K L University is a pioneer in the field of engineering education and research in private sector in the state of Andhra Pradesh.

### **b) Location**

K L University is situated in a spacious 60-acre campus on the banks of Buckingham Canal of river Krishna, eight kilometers from Vijayawada city. It is surrounded by greenery, making it an ideal location for academic pursuits. The institute has a built up area of around 101, 00,000 sq.ft. housing essential infrastructure.

## **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 caters 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.*

## **VALUES**

K L University believes that values are the embodiment of what an organization stands for and the core values which can be summed up as four Cs- COMMITMENT, COMPETENCE, CANDOUR and CARING and are the guiding light of the institution.

As O'Brien opines

*“Ultimately the quest for organizational transformation must begin with a personal commitment within each individual to attain moral excellence”.*

K L University is an institution characterized by moral excellence embodying qualities of Leadership, Virtue and Wisdom.

## **RECOGNITIONS**

The constituent K L College of Engineering has grown in leaps and soared to the level of being recognized as University due to its achievements right through.

## **As a College of Engineering**

- Approved by All India Council for Technical Education (AICTE), New Delhi.
- Accredited by National Assessment and Accreditation Council (NAAC) of UGC as 'A' Grade with a CGPA of 3.76 on 4 point scale.
- ISO 9001 – 2000 Certified Institution.
- Accredited by National Board of Accreditation (NBA), twice in 2004 and 2007 (for 5 years).
- Autonomous since 2006.

## **As a University**

- K L University has been adjudged as the 'Best private University in Andhra Pradesh' by the Brands Academy India; New Delhi.

## **KLU – AMENITIES**

### **a) Srichakra Temple**

The University has a Srichakra Temple where all stake holders perform various types of pujas and carry out meditation.

### **b) Guest Accommodation**

The University operates two guest houses - one outside the University premises in the heart of Vijayawada city and the other within the University campus. The guest houses are being used to accommodate the foreign and Indian Professors, Industrial experts, and dignitaries visiting the institution.

### **c) Bank**

The University has an adjoining Bank (State Bank of Hyderabad). Students can avail the facilities the bank provides for all their financial transactions which include funds transfer, loan rising etc. The bank has an ATM outlet for the utility of the students and the faculty.

### **d) Postal Service**

A Post office is situated within the campus making it easy for the students to answer all their mailing needs.

### **e) Co-operative store**

A cooperative store is situated in the University campus. The stores maintain all the stationery items that are regularly required for educational purposes. It also has facilities like reprography, spiral binding, lamination, book binding etc.

### **f) Medical Facilities**

The University has appointed doctors spreading across all the fields of medicine which include Homeopathy, Allopathy and Ayurveda. An emergency vehicle is available round the clock to tackle any situations of emergency. Regularly required medicines are also stacked within the medical centers of the University and the same are replenished as and when there is shortage. The appointed doctors visit the campus at designated hours and the students can meet the doctors during the same. In case of an emergency the students can call any of the key personnel or the in-charge security for assistance.

A full-fledged health center with all the facilities is established to cater to the health needs of the students, faculty, staff and the general public in the adopted villages. It consists of three doctors -Homeopathy, Ayurveda and Allopathy.

### **g) Power Distribution System**

The University has excellent power distribution system supplying power for the manifold demands of the University with 100% backup through generators.

### **h) Open Air Theater**

The University has an open air auditorium with a seating capacity of 3500 for conducting various activities throughout the year.

### **i) Conference Halls**

The University has air-conditioned conference halls of different sizes that are equipped with state of the art gadgets and these are suitable for conducting events even at the international level. Many of the international events can be conducted simultaneously using the conference halls. All the conference halls are air conditioned.

### **j) Center for Systems Management**

The University operates huge amount of hardware, network and software. As many as 10,000 computers are in place with Wi-Fi network operating round the clock. The networks are built with many redundant communication channels making the communication continuous and fail safe. Many engineers work round the clock to make all kinds of systems function smoothly.

### **k) Center for Development of Communication Skills (Language Lab)**

The University has established a huge language LAB which has the facilities to learn the language in terms of spoken English, verbal and nonverbal communication, Listening, Phonetics, writing, expressions etc. The Language is built around internationally renowned software – Globarena. It is here the students are trained to start communicating effectively.



## **l) Virtual Industry on campus**

The University has established a Virtual Industry on Campus in association with Zensor Technologies. The students have an opportunity to interact with the experts around the world and participate in the project development while physically being stationed in the University. The University has provided the entire infrastructure required including the hardware, software and the network with huge bandwidths required for participating in the global development environment.

## **m) Student Guidance and Welfare**

The University gives maximum importance to the student, who is the main stake holder. A separate “Student Welfare” division is instituted to give immediate solutions for various student problems. This division looks after student discipline, hostels, transportation, canteen, sports and extra-curricular activities of students, social service wing, NSS, scholarships, cultural activities, hobby clubs, health center, special counseling and career guidance, imparting the life skills to the students in the campus. This division mainly helps the students in their personality development and acquisition of social skills in tandem with professional expertise.

## **n) Hostel facility**

The University has separate hostels for boys and girls with well furnished rooms and modern amenities. The overall atmosphere is very conducive for the students to concentrate on studies. A state-of-the-art kitchen and spacious dining area has been provided for both the hostels. The high powered generators provide backup power. A customized menu caters to the student needs and it keeps changing according to their tastes. Senior faculty has been allocated to look into all the problems related to the hostels. All the hostels are equipped with round the clock security, communication and dispensary facilities. They are Wi-Fi enabled and students have ambience to study longer hours.

### ***The Girls Hostel***

The girls' hostel is in the campus itself and houses 1200 students. Different rooms accommodating 2 per room, 3 per room and dormitory have been provided. Rooms are designed with different amenities and facilities as per the choice of the students. Some of the rooms are provided with attached toilets, A.C, modern furniture and separate study rooms.

### ***The Boys Hostel***

It is a short walk from the University accommodating 1600 students in different types of rooms (2 per room, 3per room). Rooms with attached bath and built-in A.C units provide for comfortable living for the students.

### **o) Hobby Clubs**

The University hobby club known as KLUSO is completely managed by the students. The Clubs contribute to the cultural life on the campus and to the development of the students. Around 20 student bodies and clubs operate in the campus such as music society, dance club, drama society, literary and debating club, English press club, drawing club, painting club, mime club, computer club etc. Students manage entire activities and budget of the clubs. Around 4000 students are the active members of the hobby clubs. The University has appointed various experts in each of the art areas to hone the latent talent of the students.

### **p) Cultural Activities**

The cultural festival in the even semester every year is the best platform for the students for exhibiting their talent and creativity. Through these festivals the University is imparting organizational, leadership and team behavioral skills and competitive spirit in the students.

### **q) Technical Activities**

The University organizes various programmes for the all-round development of the students. The technical festival and project exhibition

is being organized in the odd semester every year to elicit the innovative ideas and technical skills of the students.

#### **r) Student Associations**

The University believes in all-round development of the students. The students are continually exposed to learning and practicing the organizational skills. The students of every department form into an association and organize several programmes which include Seminars, Technical News, Who is who, Paper presentations, enactment etc. The associations are fully run by the students but monitored and controlled by the faculty as and when necessary. Through these association activities students develop team work, organizational skills, self-confidence, professional ethics etc.

#### **s) Canteen**

The University has a spacious canteen with latest equipment and hygienic environment providing quality food and prompt service catering to the needs of all students and staff. The canteen is open from 6.30 am to 8.30 pm. There is a wide variety of North-Indian and South- Indian cuisine.

#### **t) Transportation**

The University has a strong fleet of 40 buses operating in two shifts in different routes of Vijayawada, Guntur and Tenali with a total seating capacity of 4000 students. Besides providing the bus service, the institute maintains a pool of vans for meeting the transport requirements of the senior faculty. An emergency vehicle is also available round the clock.

Students on commencement of academic year are to remit nominal amount with transport cell as an annual fee for availing bus pass to travel from Vijayawada, Guntur and Tenali. The transport officer then issues bus passes to the students along the designated routes. The bus pass is valid for one year and students are expected to produce the pass for identification on demand. This transport cell is in the process of

expansion of its services by increasing its boundaries of operation. The transport department also caters to the academic needs of students' like industrial visits and tours.

#### **u) Social Service Wing**

The University has a social service wing which channelizes the social service activities of the faculty, staff and students. It has adopted 5 nearby villages and conducts activities like medical camps, literacy camps and educates the villagers regarding hygiene and health care at regular intervals.

#### ***NSS Wing of the Institute***

The National Service Scheme (NSS) wing regularly organizes activities like blood donation and blood grouping camps, fund collection and distribution to poor children and old age homes, distribution of old clothes and free medicines to slum dwellers, tree plantations, AIDS awareness programme, teaching basic computer skills to a target group of 500 people in villages etc.

## OUR ADMINISTRATORS

The following are the Key personnel of the University.

All the students are advised to contact them for any of their queries, guidance and direction.

<b>Name</b>	<b>Designation</b>	<b>Email</b>
Er. Koneru Satyanarayana	President	president@kluniversity.in
Dr. G.L. Datta	Chancellor	chancellor@kluniversity.in
Dr. R. Sreehari Rao	Vice-Chancellor	vc@kluniversity.in
Dr. B.V.A. Rao	Advisor-HR&IR	bvarao@kluniversity.in
Dr. N. Rangaiah	Registrar	registrar@kluniversity.in
Dr. K.V. Ramana	Dean (ARP)	deanrd@kluniversity.in
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Ms. Lakshmi Prasanna	Asst. Registrar	drprasanna @kluniversity.in
Sri A. Krishna Rao	Asst. Registrar	akr@kluniversity.in
Dr. K. Usha Rani	Librarian	usharani@kluniversity.in
Sri.V. Durga Prasad	Branch Manager (SBH)	--
Ms. P. Dhanalakshmi	In charge Girls hostel	--
Mr. Srinivas	In charge Boys hostel	--

# **ACADEMIC RULES & REGULATIONS**

## **M.Tech**

**(Master of Technology)**

## **1.0 INTRODUCTION TO THE PROGRAMME**

The K L University, Vaddeswaram shall confer M.Tech Post graduate degree to candidates who are admitted to the Master of Technology Programme and fulfill all the requirements for the award of the degree.

1. Student will be studying 8 CDC courses and 4 electives from the given courses.
2. Evaluation Component Seminar in semesters I/I and I/II will be 2 credits (0-0-2). The students will be registering in the courses of his choice where they will be presenting the seminar on any topic related to the subject but not from the syllabus.
3. Thesis component in 3rd semester should be continued in the 4th semester until unless a student opts for industry project.
4. The minimum credits required for graduation will be 85 – 90 credits.

## **2.0 BRANCHES OF STUDY**

M.Tech duration: 2 Years with following specializations.

- ❖ Bio-Technology
- ❖ Computer Science & Engineering
- ❖ Computer Networks & Security
- ❖ Communication & Radar Systems
- ❖ VLSI
- ❖ Embedded Systems
- ❖ Power Electronics & Drives



- ❖ Power Systems
- ❖ Thermal Engineering
- ❖ Nuclear Engineering
- ❖ Signal Processing
- ❖ Mechatronics

### **3.0 PROGRAMME MODEL**

- ❖ The course duration of M.Tech is 2 years.
- ❖ KL University operates in the semester pattern.
- ❖ Each semester has 90 working days.
- ❖ The total number credits to earned is 85 to 90
- ❖ The University awards M.Tech for post graduate degree programme.
- ❖ The maximum course duration is 4 years
- ❖ Academic regulations are approved by the Academic Council.

### **4.0 PROGRAMME 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 M.Tech Programme include:

- I. To mould the students to become effective global science students in the competitive environment of modern society.

- II. To provide students with strong foundation in contemporary practices of Science, different functional areas and scientific environment
- III. To emphasize on application oriented learning.
- IV. To develop communication, analytical, decision-making, motivational, leadership, problem solving and human relations skills of 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.

## **5.0 PROGRAMME OUTCOMES**

The 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 to the society.

## 6.0 PROGRAMME STRUCTURE

### 6.1 Distribution of courses over the semesters

DEPARTMENT OF ELECTRONICS & COMPUTER ENGG.

#### M.TECH. (EMBEDDED SYSTEMS): 2012 – 14

S No	Course code	SEMESTER – I	L	T	P	Cr
1.	11 EM 501	Microcontrollers for Embedded System Design	3	1	2	5
2.	11 EM 502	Real Time Operating Systems	3	1	0	4
3.	11 EM 503	VLSI Technology & Design	3	1	2	5
4.	11 EM 504	Wireless Networks & Mobile Computing	3	1	0	4
5.		<b>ELECTIVE-I (GROUP-A)</b>	3	0	0	3
	11 EM E30	CPLD & FPGA Architectures and Applications				
	11 EM E31	Network Security & Cryptography				
	11 EM E32	Advanced Digital Signal Processing				
	11 EM E33	Adhoc & Wireless Sensor Networks				
	11 EM E34	Robotics				
6.		<b>ELECTIVE-II (GROUP-B)</b>	3	0	0	3
	11 EM E40	Embedded Linux				
	11 EM E41	Object oriented Analysis & Design				
	11 EM E42	Advanced Computer Networks				
	11 EM E43	Image and Video Processing				
	11 EM E44	System Modeling & Simulation				
7.		Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				<b>26</b>

<b>S No</b>	<b>Course code</b>	<b>SEMESTER – II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 EM 601	Advanced Embedded Processor Architectures	3	1	2	5
2.	11 EM 602	Digital Signal Processors and Architectures	3	1	0	4
3.	11 EM 603	Hardware Software Co-Design	3	1	0	4
4.	11 EM 604	System on Chip Architecture	3	1	0	4
5.		<b>ELECTIVE-III (GROUP-A)</b>	3	0	0	3
	11 EM E30	CPLD & FPGA Architectures and Applications				
	11 EM E31	Network Security & Cryptography				
	11 EM E32	Advanced Digital Signal Processing				
	11 EM E33	Adhoc & Wireless Sensor Networks				
	11 EM E34	Robotics				
6.		<b>ELECTIVE-IV (GROUP-B)</b>	3	0	0	3
	11 EM E40	Embedded Linux				
	11 EM E41	Object oriented Analysis & Design				
	11 EM E42	Advanced Computer Networks				
	11 EM E43	Image and Video Processing				
	11 EM E44	System Modeling & Simulation				
7.		Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				<b>25</b>

<b>S.No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1		Thesis	36
		<b>TOTAL CREDITS:</b>	<b>87</b>

**M.TECH. (POWER ELECTRONICS & DRIVES): 2011-13**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER – I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 EE 511	Power Electronic Circuits-I	3	1	2	5
2.	11 EE 512	Electrical Machine Modeling and Analysis	3	1	0	4
3.	11 EE 503	Optimization Techniques	3	1	0	4
4.	11 EE 504	Modern Control Theory	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11 EE 540	Special Machines				
	11 EE 541	Instrumentation & Control				
	11 EE 532	VLSI				
	11 EE 533	Digital Signal Processing				
	11 EE 534	Non-Conventional Energy Resources				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11 EE 540	Special Machines				
	11 EE 541	Instrumentation & Control				
	11 EE 532	VLSI				
	11 EE 533	Digital Signal Processing				
	11 EE 534	Non-Conventional Energy Resources				
7.	11 EE 509	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				<b>25</b>

S No	Course code	SEMESTER-II	L	T	P	Cr
1.	11 EE 513	Power Electronics Circuits – II	3	1	2	5
2.	11 EE 506	Microcontrollers and Embedded Systems	3	1	0	4
3.	11 EE 514	Power Electronic Control of Drives	3	1	0	4
4.	11 EE 515	Intelligent Control of Electrical Drives	3	1	0	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11 EE 535	FACTS				
	11 EE 536	State Estimation & Adaptive Control				
	11 EE 542	Embedded Control of Electric Drives				
	11 EE 543	AI Techniques in Power Electronics & Drives				
	11 EE 544	Electric Vehicles				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11 EE 535	FACTS				
	11 EE 536	State Estimation & Adaptive Control				
	11 EE 542	Embedded Control of Electric Drives				
	11 EE 543	AI Techniques in Power Electronics & Drives				
	11 EE 544	Electric Vehicles				
7.	11 EE 510	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

S No	Course Code	Second Year	Credits
1		Thesis	36
		<b>TOTAL CREDITS:</b>	<b>86</b>

**M.TECH. (POWER SYSTEMS): 2011-13**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 EE 501	Power System Analysis & Dynamics	3	1	2	5
2.	11 EE 502	EHVAC & HVDC Transmission	3	1	0	4
3.	11 EE 503	Optimization Techniques	3	1	0	4
4.	11 EE 504	Modern Control Theory	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11 EE 530	Reactive Power Compensation &				
	11 EE 531	Distribution System Planning & Automation				
	11 EE 532	VLSI				
	11 EE 533	Digital Signal Processing				
	11 EE 535	Non-Conventional Energy Resources				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11 EE 530	Reactive Power Compensation & Mngmt.				
	11 EE 531	Distribution System Planning & Automation				
	11 EE 532	VLSI				
	11 EE 533	Digital Signal Processing				
	11 EE 535	Non-Conventional Energy Resources				
7.	11 EE 509	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				<b>25</b>

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 EE 505	Real Time Control of Power System	3	1	2	5
2.	11 EE 506	Micro Controllers & Embedded Systems	3	1	0	4
3.	11 EE 507	Power Systems Protection	3	1	0	4
4.	11 EE 508	Power Quality	3	1	0	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11 EE 535	FACTS				
	11 EE 536	State Estimation & Adaptive Control				
	11 EE 537	Power System Restructuring & Deregulation				
	11 EE 538	Energy Conservation & Audit				
	11 EE 539	AI Techniques in Power Systems				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11 EE 535	FACTS				
	11 EE 536	State Estimation & Adaptive Control				
	11 EE 537	Power System Restructuring & Deregulation				
	11 EE 538	Energy Conservation & Audit				
	11 EE 539	AI Techniques in Power Systems				
7.	11 EE 510	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				<b>25</b>

<b>S No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1		Thesis	36
	<b>TOTAL CREDITS:</b>		<b>86</b>



DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING

**M.TECH. (COMMUNICATION & RADAR SYSTEMS): 2011-13**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 EC 501	Modern Digital Communication Techniques	3	1	2	5
2.	11 EC 502	Radiation Systems	3	1	0	4
3.	11 EC 503	Microwave & Millimeter wave Circuits	3	1	2	5
4.	11 EC 504	Digital Image Processing	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11 EC 530	High performance Communication Network				
	11 EC 531	Adaptive Signal Processing				
	11 EC 532	Neural Networks & Fuzzy Logic				
	11 EC 533	Simulation of Communication Systems & Networks				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11 EC 534	Embedded Systems				
	11 EC 535	Satellite Communication				
	11 EC 536	Wireless Communication Networks				
	11 EC 537	Low Power VLSI Design				
7.	KLUC 501	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26

S No	Course code	SEMESTER-II	L	T	P	Cr
1.	11 EC 601	Advanced Signal Digital Processing	3	1	2	5
2.	11 EC 602	EMI/EMC	3	1	0	4
3.	11 EC 603	Wireless Cellular Communication	3	1	0	4
4.	11 EC 604	Design of Radar Systems & Signals	3	1	0	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11 EC 630	Data Communication & Network				
	11 EC 631	Real Time DSP				
	11 EC 632	RF System Design				
	11 EC 633	CMOS Analog Design				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11 EC 634	Network Security & Cryptography				
	11 EC 635	VLSI Signal Processing				
	11 EC 636	Speech Processing				
	11 EC 637	Optical Communication Networks				
7.		Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

S. No	Course Code	Second Year	Credits
1	KLUC 502	Thesis/ Project	36
	<b>TOTAL CREDITS:</b>		<b>87</b>

**M.TECH. (VLSI): 2011-13**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 EC 520	CMOS VLSI Design	3	1	2	5
2.	11 EC 521	Logic Synthesis through Verilog	3	1	0	4
3.	11 EC 522	CPLD FPGA Architectures	3	1	2	5
4.	11 EC 523	VLSI Technology	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11 EC 550	Embedded System Design				
	11 EC 551	VLSI Signal Processing				
	11 EC 552	ASIC Design				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11 EC 553	Computer Networking and Mobile Systems				
	11 EC 554	Computer Architecture & Parallel Processing				
	11 EC 555	Design of Fault Tolerance System				
7.	KLUC 501	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 EC 620	Analog VLSI Design	3	1	2	5
2.	11 EC 621	Low Power VLSI Design	3	1	0	4
3.	11 EC 622	VLSI Subsystem Design	3	1	0	4
4.	11 EC 623	Design for Testability	3	1	0	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11 EC 650	Algorithm for VLSI Design Automation				
	11 EC 651	Advanced VLSI Design				
	11 EC 652	Nano Electronics				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11 EC 653	VLSI Layout Synthesis Algorithms				
	11 EC 654	CMOS RF Circuit Design				
7.		Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

<b>S. No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1	KLUC 502	Thesis	36
	<b>TOTAL CREDITS:</b>		<b>87</b>

**M.TECH. (SIGNAL PROCESSING): 2013-15**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	13 EC 531	Wavelet Theory & Application	3	1	2	5
2.	13 EC 532	Mathematics for Signal Processing	3	1	0	4
3.	13 EC 529	Multirate Signal Processing	3	1	2	5
4.	13 EC 521	Advanced Digital Signal Processing	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	13 EC 559	VLSI Signal Processing				
	13 EC 523	Array Signal Processing				
	13 EC 524	Speech Processing				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	13 EC 525	Wireless Communication Signal Processing				
	13 EC 535	Statistical Signal Processing				
	13 EC 526	Bio Medical Signal Processing				
7.		Seminar	0	0	4	2
<b>TOTAL CREDITS :</b>						26

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	13 EC 520	Image And Video Processing	3	1	2	5
2.	13 EC 522	Radar Signal Processing	3	1	0	4
3.	13 EC 537	Detection and Estimation of Signals	3	1	0	4
4.	13 EC 528	DSP Processors and Architecture	3	1	0	4
5.		ELECTIVE-III	3	0	0	3
	13 EC 529	Processing in Non Destructive Evaluation				
	13 EC 504	Wireless Cellular Communications				
	13 EC 530	Adaptive Signal Processing				
6.		ELECTIVE-IV	3	0	0	3
	13 EC 536	Linear and Non Linear Optimization				
	13 EC 534	Optical Signal Processing				
	13 EC 505	RF & Microwave System Design				
7.		Term Paper	0	0	4	2
<b>TOTAL CREDITS :</b>						<b>25</b>

<b>S. No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1		Thesis	36
<b>TOTAL CREDITS:</b>			<b>87</b>

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

**M.TECH. (CSE): 2011-13**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 CS 501	Data Structures and Algorithms	3	1	2	5
2.	11 CS 502	Computer Organization	3	1	0	4
3.	11 CS 503	Operating Systems	3	1	0	4
4.	11 CS 504	Objected Oriented Programming	3	1	2	5
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11CS-E11	Visual Programming				
	11CS-E12	Mobile Computing				
	11CS-E13	Data Mining				
	11CS-E14	Programming Paradigms				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11CS-E21	Enterprise Programming				
	11CS-E22	Autonomic Computing				
	11CS-E23	Data Ware Housing				
	11CS-E24	Computer Graphics				
7.	11CS 505	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 CS 506	Computer Networks	3	1	2	5
2.	11 CS 507	Software Engineering	3	0	0	3
3.	11 CS 508	Database Management Systems	3	1	2	5
4.	11 CS 509	Embedded Systems	3	1	0	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11CS-E31	Web Services				
	11CS-E32	Cloud Computing				
	11CS-E33	Distributed Data Bases				
	11CS-E34	Digital Image Processing				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11CS-E41	Semantic Web				
	11CS-E42	Grid Computing				
	11CS-E43	Data Security				
	11CS-E44	Multimedia Systems				
7.	11 CS 510	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

<b>S No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1	11 CS 601	Thesis/ Project	36
	<b>TOTAL CREDITS:</b>		<b>87</b>



DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

**M.TECH. (CNS): 2011-13**

<b>S No</b>	<b>Course Code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 CN 501	Data Structures and Algorithms	3	1	2	5
2.	11 CN 502	Advanced Computer Networks	3	1	0	4
3.	11 CN 503	TCP/IP Protocols	3	1	2	5
4.	11 CN 504	Adhoc Networks	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11 CN-E11	Grid Computing				
	11 CN-E12	Wireless Communication and Networks				
	11 CN-E13	Elliptic Curve Cryptography				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11 CN-E21	Cloud Computing				
	11 CN-E22	Wireless Data Networks				
	11 CN-E23	Crypto Analysis				
7.	11 CN 505	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 CN 506	Cryptography and Network Security	3	1	0	4
2.	11 CN 507	Network Programming	3	0	2	4
3.	11 CN 508	Network Routing	3	1	0	4
4.	11 CN 509	Secure Systems Development with UML	3	1	2	5
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11 CN-E31	Autonomic Computing				
	11 CN-E32	Network Management				
	11 CN-E33	Cognitive Networks				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11 CN-E41	Mobile Computing				
	11 CN-E42	P2P Networks				
	11 CN-E43	Digital Water Marking and Steganography				
7.	11 CN 510	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

<b>S. No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1	11 CS 601	Thesis/ Project	36
	<b>TOTAL CREDITS:</b>		<b>87</b>

DEPARTMENT OF MECHANICAL ENGINEERING

**M.TECH. (THERMAL ENGINEERING): 2011-13**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11ME501	Advanced Engineering Thermodynamics	3	1	2	5
2.	11ME502	Advanced Fluid Mechanics	3	1	0	4
3.	11ME503	Gas Turbines and Jet Propulsion	3	1	2	5
4.	11ME504	Energy Conservation & Management	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11ME531	Hydal Power and Wind Energy				
	11ME530	Renewable Energy Systems				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11ME541	Refrigeration and Air Conditioning				
	11ME542	Heat and Mass Transfer				
7.	11ME551	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.	11 ME 625	Heat Exchanger Analysis and Design	3	1	0	4
2.	11 ME 626	Computational Methods in Thermal Engineering	3	1	2	5
3.	11 ME 627	Design of Thermal Systems	3	1	0	4
4.	11 ME 628	Analysis of Thermal Power Cycles	3	1	0	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11 ME 631	Advanced Internal Combustion Engines				
	11 ME 632	Gas Dynamics				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11 ME 641	Thermal and Nuclear Power Plants				
	11 ME 642	Experimental Methods in Thermal and Fluid Sciences				
7.	11 ME 651	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

<b>S. No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1		Thesis	36
	<b>TOTAL CREDITS:</b>		<b>87</b>

**M.TECH. (MECHATRONICS): 2013-15**

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.		Fundamentals of Mechatronics	3	1	0	4
2.		Advanced Engineering Mathematics	3	1	0	4
3.		Sensors and Actuators	3	1	2	5
4.		Modeling and Simulation of Mechatronic Systems	3	1	2	5
5.6		<b>ELECTIVE-I &amp; II</b>				
		Computational Fluid Dynamics	3	0	0	3
		Signal Processing in Mechatronic Systems	3	0	0	3
		Nonlinear Optimization	3	0	0	3
		MEMS and NEMS	3	0	0	3
7.		Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26

<b>S No</b>	<b>Course code</b>	<b>SEMESTER-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1.		Robotics : Advanced Concepts and Analysis	3	1	2	5
2.		Control of Mechatronic Systems	3	1	2	5
3.		Mechatronics Product Design	3	1	0	4
4.		Precision Engineering	3	0	0	3
5.6		<b>ELECTIVE-III &amp; IV</b>				
		Industrial Automation	3	0	0	3
		Vehicle Dynamics and Multi-body Systems	3	0	0	3
		Emerging Smart Materials for Mechatronics Applications	3	0	0	3
		Intelligent Visual Surveillance	3	0	0	3
		Microprocessors and Embedded Systems	3	0	0	3
		Fuzzy Sets and Artificial Intelligence	3	0	0	3
7.		Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

<b>S. No</b>	<b>Course Code</b>	<b>Second Year</b>	<b>Credits</b>
1		Thesis	36
	<b>TOTAL CREDITS:</b>		<b>87</b>

DEPARTMENT OF CIVIL ENGINEERING  
**M.TECH. (STRUCTURAL ENGINEERING) – 2012-14**

S. NO	COURSE CODE	SEMESTER-I	L	T	P	Cr
1.	11 CE 501	Applied Mathematics	3	1	0	4
2.	11 CE 502	Theory of Elasticity	3	1	0	4
3.	11 CE 503	Structural Dynamics	3	1	2	5
4.	11 CE 504	Advanced Prestressed Concrete	3	1	2	5
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11 CE 531	Repair and rehabilitation of Structures				
	11 CE 532	Design of Offshore Structures				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11 CE 541	Geotechnical Earthquake Engineering				
	11 CE 542	Stability of Structures				
7.	11 CE 551	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26
<b>SEMESTER-II</b>						
1.	11 CE 601	Finite Element Analysis	3	1	2	5
2.	11 CE 602	Bridge Engineering	3	1	0	4
3.	11 CE 603	Earthquake resistant design of structures	3	1	0	4
4.	11 CE 604	Theory of Plates and Shells	3	1	0	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	11 CE 631	Industrial Structures				
	11 CE 632	Design of Tall Structures				
	11 CE 633	Optimization of Structures				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	11 CE 641	Advanced Design of Structures				
	11 CE 642	Fracture Mechanics				
	11 CE 643	Green Buildings				
7.	11 CE 651	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

S.No.	Course Code	Second Year	Credits
1		Thesis	36
	<b>TOTAL</b>		<b>87</b>

DEPARTMENT OF MECHANICAL ENGINEERING  
M.TECH. (CAD-CAM) – 2011-13

S. NO	COURSE CODE	SEMESTER-I	L	T	P	Cr
1.	11ME521	Finite Element Method	3	1	2	5
2.	11ME522	Product Design and Development	3	1	0	4
3.	11ME523	Computer Integrated Manufacturing	3	1	2	5
4.	11ME524	Design and Fabrication of MEMS	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
	11ME536	Machine Tool Engineering				
	11ME536	Robotic Modeling Analysis & Control				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	11ME546	Computer Graphics				
	11ME547	System Dynamics				
	11ME548	Quality Engineering & Manufacturing				
7.	11ME551	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26
S. NO	COURSE CODE	SEMESTER-II	L	T	P	Cr
1.	11ME605	Mechatronics	3	1	2	5
2.	11ME606	Concurrent Engineering	3	1	0	4
3.	11ME607	Performance Modeling and Analysis of Manufacturing Systems	3	1	0	4
4.	11ME608	Computer Graphics	3	1	0	4
5.	11ME609	Flexible Manufacturing Systems	3	0	0	3
6.	11ME610	Cellular Manufacturing Systems	3	0	0	3
7.	11ME651	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25



S.No.	Course Code	Second Year	Credits
1		Thesis	36
<b>TOTAL</b>			<b>87</b>

DEPARTMENT OF MECHANICAL ENGINEERING

**M.TECH. (Nuclear Engineering) – 2012-14**

S. NO	COURSE CODE	SEMESTER-I	L	T	P	Cr
1.		Computational Methods in Engineering	3	1	2	5
2.		Nuclear Materials Processing	3	1	0	4
3.		Nuclear and Reactor Physics	3	1	2	5
4.		Advanced Non Destructive Evaluation	3	1	0	4
5.		<b>ELECTIVE-I</b>	3	0	0	3
		Materials Selection for Nuclear Systems				
		Characterization of Nuclear Materials				
6.		<b>ELECTIVE-II</b>	3	0	0	3
		Experimental Stress Analysis				
		Theory of Plates and Shells				
7.		Seminar	0	0	4	2
<b>TOTAL CREDITS:</b>						26

S. NO	COURSE CODE	SEMESTER-II	L	T	P	Cr
1.		Mechanical Design of Nuclear Energy Systems	3	1	2	5
2.		Reliability and Safety Analysis of Nuclear Power Plants	3	1	0	4
3.		Process Control and Instrumentation	3	1	0	4
4.		Computer Graphics	3	1	0	4

5.		<b>ELECTIVE-III</b>	3	0	0	3
		Radiation Effects on Materials				
		CFD for Nuclear Engg. Applications				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
		Advanced Structural Mechanics				
		Advanced Fluid Mechanics				
7.		Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

S.No.	Course Code	Second Year	Credits
1		Thesis	36
		<b>TOTAL CREDITS:</b>	<b>87</b>

DEPARTMENT OF BIO TECHNOLOGY

**M.TECH. (Bio Technology) – 2012-14**

S. NO	COURSE CODE	SEMESTER-I	L	T	P	Cr
1.	12BT501	Mathematics and Biostatistics	4	0	0	4
2.	12BT502	Biochemical Engineering	3	1	2	5
3.	12BT503	Molecular Biology & r-DNA Technology	3	0	2	4
4.	12BT504	Applied Bioinformatics	3	1	2	5
5.		<b>ELECTIVE-I</b>	3	0	0	3
	12BT530	Enzyme Technology				
	12BT530	Medical Biotechnology				
6.		<b>ELECTIVE-II</b>	3	0	0	3
	12BT501	Food Biotechnology				
	12BT501	Stem cell technology				
7.	12BT001	Seminar	0	0	4	2
		<b>TOTAL CREDITS:</b>				26

S. NO	COURSE CODE	SEMESTER-II	L	T	P	Cr
1.	12BT505	Plant and Animal Biotechnology	3	1	2	5
2.	12BT506	Immunotechnology	3	0	2	4
3.	12BT507	Bioreactor modeling and simulation	3	1	0	4
4.	12BT508	Down Stream Processing	3	0	2	4
5.		<b>ELECTIVE-III</b>	3	0	0	3
	12BT533	Molecular modeling and drug design				
	12BT533	IPR and Patent laws				
6.		<b>ELECTIVE-IV</b>	3	0	0	3
	12BT534	Genomics and proteomics				
	12BT534	Nanotechnology				
7.	12BT002	Term Paper	0	0	4	2
		<b>TOTAL CREDITS:</b>				25

S. No	Course Code	Second Year	Credits
1	--	Thesis	36
	<b>TOTAL CREDITS:</b>		<b>87</b>

## **6.2 Course Precedence**

To impart quality higher education and to undertake research and extension with emphasis on application and innovation that caters 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.

## **6.3 Specialization Streams**

A student will be awarded a *Degree with Specialization* if he/she completes 4 courses from a particular stream within the discipline. By a careful selection of electives within a particular stream, a student can get a degree with specialization. That is, a student can get a Degree with Specialization during regular M.Tech programme, without overloading himself / herself.

## **7.0 ELIGIBILITY CRITERIA**

Admissions to the M.Tech programme shall be made subject to the eligibility, qualifications and specialization prescribed by the University for each Programme, from time to time.

Admissions shall be made either on the basis of merit rank obtained by the qualifying candidates at an Entrance Test conducted by the K.L.University or on the basis of GATE / PGECET score, subject to reservation prescribed by the University or Government policies from time to time.

## **8.0 BRANCH CHANGES**

Not applicable to this programme.

## 9.0 ACADEMIC FLEXIBILITY

Not applicable to this programme.

## 10.0 ACADEMIC CALENDER

<b>Odd Semester</b>	
<b>Event</b>	<b>Period/ Date</b>
Registration	Last week of July
Commencement of class work	Last week of July
Surprise Test I week	1 <sup>st</sup> week of September
I Internal Assessment Examinations	3 <sup>rd</sup> week of September
Tech fest	1 <sup>st</sup> week of October
Surprise Test II week	1 <sup>st</sup> week of November
II Internal Assessment Examinations	3 <sup>rd</sup> week of November
Last instruction day	Last week of November
Commencement of comprehensive exams	1 <sup>st</sup> week of December
Last day of comprehensive exams	2 <sup>nd</sup> week of December
Semester Break	2 <sup>nd</sup> week of December

<b>EVEN SEMESTER</b>	
<b>Event</b>	<b>Period/ Date</b>
Registration	3 <sup>rd</sup> week of December
Commencement of class work	3 <sup>rd</sup> week of December
Surprise Test I week	1 <sup>st</sup> week of February
KLU Cultural Fest	2 <sup>nd</sup> week of February
I Internal Assessment Examinations	2 <sup>nd</sup> week of February
Surprise Test II week	3 <sup>rd</sup> week of March
II Internal Assessment Examinations	1 <sup>st</sup> week of April
Last instruction day	2 <sup>nd</sup> week of April
Commencement of comprehensive exams	2 <sup>nd</sup> week of April
Last day of comprehensive exams	3 <sup>rd</sup> week of April
Summer Internship	1 <sup>st</sup> week of May to Last week of July
Summer Break	*
Commencement of Next Academic Year	4 <sup>th</sup> week of July

\* The exact dates will be finalized by the Academic Counsel at the beginning of academic year.

## **11.0 PROGRAMME DURATION AND MEDIUM OF INSTRUCTION**

The University offers four semester programme and each semester has a minimum of 90 instructional days.

The medium of instruction is English.

## 12.0 ATTENDANCE AND DETENTION

### Attendance

- a) It is mandatory for, a student to attend all the classes, tutorials, laboratories and other evaluation components conducted by the University. A student may be detained from appearing for an examination on grounds of shortage of attendance.
- b) In each course attendance will be treated as evaluation component and marks are awarded as shown below:

<b>% of Attendance in Theory &amp; Practical classes</b>	<b>Marks awarded</b>
$\geq 95$	5
$\geq 90$ and $< 95$	4
$\geq 85$ and $< 90$	3
$\geq 80$ and $< 85$	2
$\geq 75$ and $< 80$	1

### Detention

- a) 75% attendance and 40% internal marks (internal evaluation components) are mandatory to attain eligibility to appear for the comprehensive examination in a course. If a student fails to maintain 75% attendance and 40% internal marks in a course he/she will be awarded with *NA* Report in that course. In such cases, student will not be permitted to attend the comprehensive examination of that course(s) where he/she has obtained *NA* Report. He/she has to register and repeat the course whenever it is offered.
- b) However, some relaxation to this rule is possible in the case of students participating in extra -curricular activities as identified below:

- One week for state level competitions.
  - Two weeks for National level competitions and
  - Three weeks for International events irrespective of the number of events and/the number of participations in a semester.
- c) If the period of absence in a semester is for a short duration (of not more than one week) prior application for leave should be submitted to the Head of the Department clearly stating the reasons for absence along with supporting documents. The Head of the Department will grant such leave at his/her discretion. He/She may be allowed for makeup of Laboratory/workshop classes conducted during the period of absence.
- d) Absence for a period not exceeding one week in a semester due to sickness or any other unavoidable reason for which prior application could not be made may be condoned by the Dean-Academics, provided he is satisfied with the explanation.
- e) If the period of absence is likely to exceed one week, a prior application for grant of leave should be submitted to the Head of the Department.
- f) In special cases and for sufficient cause shown, the Dean-Academics on the recommendation of the Head of the Department may condone the deficiency not exceeding 10% in attendance due to ill-health, when the application submitted at the time of the actual illness is supported by a certificate from an authorized medical officer.
- g) A student must intimate his/her absence to the Superintendent /Warden of the Hostel in which he/she is residing, before availing of any leave. Failing to do so will be construed as breach of discipline.



### **13.0 REGISTRATION**

A student (newly admitted or on rolls) has to register for the course on the day of registration for each semester. Students failing to register for the course will not be permitted to attend classes.

Students will be permitted to register only if they have:

1. Cleared all the fees, outstanding dues of University and / or hostel of previous semesters, paid all prescribed fees for the current semester, and not been debarred from registering for a specified period on disciplinary or any other ground.
2. Normally, no late registration shall be permitted. However, considering any compelling reason, a student may be permitted for late registration (within one week of commencement of semester) with prior approval from the Director (Academic Registration). Late registration may be done with payment of requisite fine.
3. The University reserves the right to cancel the registration of a student from a course or semester or debar from the degree on disciplinary grounds.
4. Registration of students in each semester will be organized by the Academic Section. The registration will be done in respective departments; the course details being verified by the faculty mentor of the batch. Payment of dues etc., will be verified by the Academic Section.
5. A student who does not register on the day announced for the purpose may be permitted by Dean Registration, in consideration of any compelling reason, late registration within next 5 working days on payment of an additional fee as prescribed by the University.

Normally no late registration shall be permitted after the fifth working day from the scheduled date, except in special cases, a serious medical problem, a family calamity or participation in a national event, to be approved by the Director on recommendation of Dean Registration.

### **13.1 Fees and payments**

A student admitted to any course shall be required to pay, at the time of joining, and also in subsequent semesters, prevalent tuition and other fees as prescribed by the University till he/she is on roll including the period beyond the normal four-year duration.

There is no discount in fees for reduced academic load. Normally the fee structure will not change during the programme; but if the University revises the structure in the middle of a programme, a student is obliged to comply. The fee will be collected under the broad heads: Admission fee, Tuition fee, Student Activity fee, Hostel rent, Caution deposit, Convocation fee and miscellaneous fees. Caution deposit collected will be returned at the end of the programme after due adjustment, if any, except for those who leave the University prematurely.

When a student leaves the University on successful completion of the course, caution deposit is refundable after deduction of dues and charges, if any.

- If a student is removed or he withdraws/leaves the University in the mid-session without completing the entire course, all fees paid including the caution deposit will be forfeited by the University. Mess advance may be refunded after deduction of dues, if any.
- If a student does not register in three consecutive semesters his name will be struck off the rolls.

## **Exceptions**

Notwithstanding anything stated in the rules, the Academic Council can make special provisions and exceptions depending on the merit of a case. Such cases shall not be cited as precedence in future occasions of similar nature.

### **13.2 Pre-Requisites**

Admission to the M.Tech programme shall be made subject to the eligibility, qualifications and specialization prescribed by the University for each Programme, from time to time.

Admissions shall be made either on the basis of merit rank obtained by the qualifying candidates at an Entrance Test conducted by the K.L.University or on the basis of GATE / PGECET score, subject to reservations prescribed by the University or Government policies from time to time.

## **14.0 PROGRAMME DELIVERY SYSTEM**

### **LTP Structure**

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 and practice oriented rather than lecture oriented.

Based on the nature of the course the learning pedagogy will change that is reflected by **L-T-P** structure for a course. '**L**' (Lecture classes) stands for class room contact sessions. '**T**' stands for Tutorial sessions for reinforced learning through participatory discussion/self-study/desk work and such other novel methods that make a student absorb and assimilate more effectively the contents delivered in the lecture classes. '**P**' stands for **Practice/Practical** sessions for laboratory/field studies that equip students to acquire the much required skill component. A credit is defined to be as one hour

of lecture or two hours of laboratory per week or one hour of tutorial per week over a semester.

## **15.0 BACKLOG COURSES**

A course is considered to be a backlog if the student has obtained 'F' grade / NA Report in the course; the following regulations apply to a student who has backlog(s):

- a) A student having backlogs has to clear backlog courses first.
- b) If the backlog course(s) becomes prerequisite for any other course, he cannot register for those prescribed courses.
- c) A student, who has backlog courses, when he/she appears in Academic Counseling Board, shall come under all regulations mentioned in ACB.
- d) A student detained due to lack of credits / more number of backlogs in a semester has to register only for that semester after acquiring the eligibility for promotion. Under no circumstances he/she is allowed to register for next semester without registering for the detained one. This is applicable for those joined from 2010-11 academic year onwards.

## **16.0 CREDIT TRANSFER**

Not Applicable to this programme.

## **17.0 GRADES AND REPORTS**

A candidate shall be eligible for the award of the respective degree if he satisfies the minimum academic requirements in every course and secures 'satisfactory' or higher grade in the courses/report on his dissertation/dissertation and viva-voce.

For the award of M.Tech degree a student must have earned stipulated credits (as approved by respective B.O.S) and obtained a minimum CGPA of 5.5.

- M.Tech Degree with Second class will be offered to those having CGPA < 6.5.
- M.Tech Degree with First class will be offered to those having CGPA  $\geq$  6.5.
- First class with distinction will be offered to those having CGPA  $\geq$  7.5 provided the student has cleared all the courses in first attempt (Regular) within the stipulated time.

At the end of all evaluation - components based on the performance of the student in courses and seminars, each student is awarded with **letter grade** on a **relative scale**. The list of letter grades and its connotation are given below:

<b>Grade</b>	<b>Qualitative Meaning</b>	<b>Grade</b>
<i>X</i>	Excellent	10
<i>A</i>	Very Good	8
<i>B</i>	Good	7
<i>C</i>	Fair	6
<i>D</i>	Satisfactory	5
<i>E</i>	Pass	4
<i>F</i>	Fail	0

The grades 'X' and 'F' will be earned and remaining grades will be awarded. A student scoring 80% or more of overall score will earn an 'X' grade.

A student getting less than 50% of overall score and 40% in the comprehensive examination will be considered to have earned *F* grade.

- a) To earn an *X* grade, the student should have scored aggregate marks of  $\geq 80\%$ .
- b) A student who obtains '*F*' grade has to reappear for the comprehensive examination. However, such a student need not attend the classes and marks obtained in internal evaluation components and attendance will be carried forward to the subsequent attempts of the student.
- c) In case of a student who has earned *F* grade, after the student has fulfilled all the requirements for passing it will be converted into a valid grade by considering grade cutoffs of the batch in which he/she had appeared for the course for 1<sup>st</sup> time.
- d) The overall performance of the student is described by Cumulative Grade Point Average (*CGPA*) and is calculated taking into consideration grade obtained by the student in all credited courses and credits attached to it. It is the weighted average of the grade points of all the letter grades obtained in credited courses by the student from his entry into the University. *CGPA* is computed as follows:

$$CGPA = \frac{c_1g_1 + c_2g_2 + \dots + c_n g_n}{c_1 + c_2 + \dots + c_n}$$

where  $c_1, c_2, \dots, c_g$  denotes credits associated with the course applied and  $g_1, g_2, \dots$  denotes grades obtained by the student.

- e) At the end of each semester the University issues grade sheet indicating the *CGPA* of the student. However, grade sheet will not be issued to the student if he/she has any outstanding dues.
- f) The Instructor/Course Coordinator can award the following reports depending on the cases:
  - (i) **NA (Not Attended)** is awarded to the student if the student has shortage of attendance. When student is given *NA* he/she has to

repeat the course. It should be noted here that *NA* is different from *F* grade. For a student with *F* grade his/her internal marks, attendance and attendance marks will be carried forward. While for a student awarded with *NA* Report has to attend the classes.

- (ii) **NR (Not Registered)** is awarded when a student has not registered for a course. When a student is given *NR* grade he/she has to register for the course when offered next. If a course in which a student is given *NR* grade is pre-requisite grade for another course, the student shall not be registered for such a course.
- (iii) **GP (Grade Pending)** is awarded in situations where Course Coordinator cannot communicate the grade in time because of operational difficulties. The *GP* report has to be converted into valid grade by the Course Coordinator at a later stage.
- (iv) **RC (Registration Cancelled)** is awarded to a student for various reasons when the registration for the course is cancelled by the University. Such a student will have a register for the course in subsequent semester / summer semester whenever the course is offered next.
- (v) **DIP (Discontinued from Programme)** is awarded in situations where a student wants to discontinue with the prior approval of the University.

## 18.0 ACADEMIC COUNSELING BOARD (ACB)

1. A student will be put under Academic Counseling Board under the following circumstances:
  - a. Has CGPA of less than 5.5 for Post graduate degree programmes.
  - b. Has 'F' grade in more than two courses.

2. The students under Academic Counseling Board may not be allowed to register for all regular courses in the semester based on the recommendation of Academic Council Board. That is, University reserves all rights to decelerate the degree programme of the student.
3. Remedial classes will be conducted for students who are in ACB.

## **19.0 OVERLOADING AND UNDERLOADING**

A student is permitted to overload himself/herself (registering for more courses) in a semester subject to certain restrictive conditions.

## **20.0 ACCELERATION AND DECELERATION**

University offers flexibility for M.Tech degree students in doing the courses. In addition to the prescribed courses, a student can register for more electives, summer term courses, evening courses provided his/her timetable and University facility permits. Any extra courses done by acceleration would be reflected in the transcript but not in the CGPA. The University permits a student to decelerate his degree programme as well. Any student is permitted to withdraw from the courses for which he/she has registered, owing to his personal problems or any other valid reason.

## **21.0 ELECTIVE COURSE**

The University offers a pool of electives in all disciplines. A student is permitted to choose the elective courses of his/her choice within his own discipline.

## **22.0 RE-APPEARANCE**

The University permits a student to repeat a course to improve the grade subject to certain restrictive conditions.



### **23.0 BETTERMENT BY RE-REGISTRATION**

A candidate having low SGPA / CGPA can reappear in the end examination when he has obtained C or D grade for improvement before the completion of M.Tech programme. The internal evaluation components in such case will be carried forward and grading will be done with the current batch of students. However the grades obtained out of improvement will not be considered for award of distinction or Gold medal.

### **24.0 WITHDRAWAL AND SUBSTITUTION OF COURSE**

a) A Student is permitted to withdraw from an elective course within one week after the commencement of the semester with the approval of Dean-Academics.

b) A Student is normally not permitted to withdraw from compulsory course(s) of the discipline.

However if a student desires to withdraw from compulsory courses of the discipline, he/she should seek prior permission from Dean-Academics.

However, a student is not permitted to withdraw from compulsory course and substitute the same with an elective course.

In situations, when a student withdraws from a compulsory course, he/she must have to complete the course before graduation.

c) Whenever a student withdraws from compulsory course(s), the student has to register for the course(s) from which he/she is permitted to withdraw whenever the course(s) are offered. This implies, a student has to complete all the compulsory courses prescribed by the Department for graduation.

Within one week of the commencement of the semester, a student is permitted to substitute an elective course (substitution) with prior approval of Dean-Academics subject to availability.

## **25.0 SUMMER TERM AND EVENING COURSES**

If the number of F grades and/or registration cancelled (detained) in a course taught in even or odd semester is significant, a department may offer the course during the summer vacation. When a summer course is offered, it will be compulsory for all students who have secured an 'F' grade in that course. There will be no alternative mid semester or supplementary examination in that course. Students who need to sit for supplementary or alternative mid semester exams on medical, family calamity or any other reason except poor academic performance may sit in the corresponding exams of the summer course, without attending classes if they satisfy the attendance requirement.

The summer courses will be identical in scope and manner of execution to the corresponding courses of regular semesters, except that the number of class hours per week may be higher. Attendance requirement will also be identical. The examinations will be conducted by the academic section in the usual manner. No separate examination will be arranged for students who miss the summer course, or any other examination.

## **26.0 DEGREE WITH SPECIALIZATION**

A student will be awarded a *Degree with Specialization* if he/she completes courses from a particular stream within the discipline. By a careful selection of electives within a particular stream, a student can get a degree with specialization. That is, a student can get a Degree with Specialization during regular programme, without overloading himself / herself.

## 27.0 GRADUATION REQUIREMENTS

A student must fulfill the following requirements for graduating:

1. Must have cleared a minimum of 85-90 credits.
2. Cleared all the requirements of discipline.
3. Obtained a minimum GPA of 5.5.
4. Must have finished all the above mentioned requirements in less than twice the period mentioned in the Academic structure for each programme which includes deceleration period chosen by the student, deceleration imposed by University or debarred from the University.

### Credit Distribution

The four semester M.Tech. Programmes offered in various disciplines and streams by different departments of the institute are based on the credit system and provide a student with wide choice of courses. Each programme comprises of several core and elective courses and project work. These programmes, along with the course structure, are indicated here under.

The Programme is spread over a period of four semesters that embodies 12 courses with a credit load of 85-87 credits.

S. No	Type of the course	Number	Credits	Percentage
1	Core courses	8	33-38	40.2
2	Professional electives	4	12-14	13.7
3	Term Paper	1	2	0.25
4	Seminar	6	2	0.25
5	Dissertation work	1	36	41.3
	Total	20	85-90	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. A student has to compulsorily undergo 8 core courses.

## Elective Courses

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

## Course Structure

I Semester							II Semester						
S No	Course Code	Course Title	L	T	P	Credits	S No	Course Code	Course Title	L	T	P	Credits
1		Core1	3	1	2	5	1		Core 5	3	1	2	5
2		Core2	3	1	2	5	2		Core6	3	1	0	4
3		Core3	3	1	0	4	3		Core7	3	1	0	4
4		Core 4	3	1	0	4	4		Core8	3	1	0	4
5		Elective 1	3	0	0	3	5		Elective 3	3	0	0	3
6		Elective 2	3	0	0	3	6		Elective 4	3	0	0	3
7		Seminar	0	0	4	2	7		Term paper	0	0	4	2
Total Credits						26	Total Credits						25
III Semester & IV Semester													
S. No	Course								Credits				
1	Dissertation work								36				

## **28.0 EXAMINATIONS**

The Examination office of the Academic Section will centrally conduct the Mid-semester and End-semester Examinations in respect of theory courses unless otherwise arranged. The examinations will normally be “closed book type”, where the students are not permitted to bring any material. All necessary charts and tables will be provided by the University. It is the responsibility of the course faculty to recommend the material to be provided, and to check with the examination office that the arrangement has indeed been done.

While normal scientific calculators are permitted, other electronic devices such as programmable calculators and calculators containing communication devices are forbidden. Any exception to these provisions must be specially approved by the Academic Council.

## **29.0 EVALUATION**

### **Teaching and Evaluation**

#### **I. Teaching**

- a. Course(s) taught by a single instructor (theory) is referred to as single section course and course(s) taught by group of instructors in more than one section is referred to as multi-section courses.
- b. The teacher for single section courses or associated with multi-section courses is referred to as Instructor.
- c. In case of multi- section courses, the team is led by an instructor known as Course Coordinator. For single section courses, an Instructor will be designated as Course Coordinator. Course Coordinator is also an instructor in multi-section course.
- d. A team of instructors, under the leadership of Course Coordinator, work together for meeting all requirements of teaching, evaluation and administrative aspects of the course.

The Course Coordinator has the responsibility of conducting the course with the cooperation of all instructors in the team.

- e. Course Handout shall be given to the students. It shall also be placed on the E-Learning portal.
- f. Students will be assessed on formative basis with a weightage of 40 per cent. The summative assessment carries a weightage of 60 per cent.

## 29.1 Evaluation of Internal Examinations

### Evaluation Scheme

a) Formative Assessment:

**Max Marks: 40**

S. No	Component	Duration	Weightage
1	Internal assessment Exams (Test 1 & 2) (75% of the higher score and 25% of the lower score will be considered)	1½ hours	15
2	Assignment/Assignment Test/Written Case Analysis/ Live Project/Reading Seminar/Mini-project/Paper Presentations/Operation workout		15
3	Surprise Test - Objective or Descriptive (Average of two tests will be considered)	10 to 20 minutes	5
4	Class attendance		5
<b>Total</b>			<b>40</b>

- i. Two internal assessment exams (Test 1 & Test 2) will be conducted for all courses during the semester. The internal exams will be conducted for 30 marks which in turn will be scaled to 15 marks. The schedule of exams will be notified by the Principal.

- ii. A Surprise Test is of objective or subjective nature decided by the Course Coordinator and is conducted without prior intimation. There will be two such tests in a semester.
- iii. Assignment /Assignment Test/ Live Project /Reading Seminar / Written Case Analysis/ Mini-project / Paper Presentations / Operation workout:

One or two of these components as detailed in Table No. 1 will be implemented for each course. Applicable component(s) will also be detailed in the Course Handout. Wherever applicable, presentation by a student would be integrated with the component.

- iv. Class attendance is monitored by each Instructor and based on the percentage of attendance marks are awarded.
- v. In order to maintain transparency in evaluation, the answer sheets of all formative assessment components shall be shown to the students within THREE days of conducting the tests. If a student is not convinced with the marks awarded he/she can apply for recheck. However, the student can apply for recheck on the day of returning the answer sheet within the classroom only.
- vi. It shall be the responsibility of the Course Coordinator to display solution key on the notice board immediately after the evaluation component with evaluation scheme. The Instructor should stick to the evaluation scheme announced while checking the answer sheets.
- vii. Where there are multiple Course Instructors, the Coordinator shall ensure that a common question paper is administered for Test 1 and Test 2.

## Distribution of Weightage

S. No	Nature of examination	Marks %	Type of examination and mode of Assessment	Scheme of examination	
1	* Theory	60	Semester end examination (external evaluation)	This examination question paper in theory subjects will be for a maximum of 60 marks.	
		40	20	Test 1	2 mid - exams each for 20 marks and of 1 1/2 hr duration are to be conducted. For a total of 20 marks, 75% of better of the two and 25% of the other are added and reported.
				Test 2	
			5	Assignment Test	6 Question to be released in advance. 2 Questions allotted by Examiners choice to be answered. Duration 45 min.
			5	Home Assignment	Average of Home Assignments minimum 2 per subject.
			5	Surprise Quiz	A maximum of two surprise quizzes per subject
			5	Attendance/ Class notes	5 marks are allotted for attendance and class notes



2	* Practical	60	Semester end Lab exam (ext. evaluation)		60 marks are allotted for semester end laboratory/ drawing examination.
		40	20	Internal evaluation	Mid-term Lab Tests in lab experiments/ drawing/Job works and Record.
			15	Internal evaluation	Continuous Viva Voce evaluation.
			5	Attendance.	
3	Dissertation work Semester-IV	100 %	300	Internal evaluation	Two Status reports and two seminars in first semester-50 marks
				External evaluation	Two Status reports and two seminars in second semester-50 marks Final report – 100 marks Viva-voce – 100 marks

\*Note:

1. For pure Theory & pure Lab courses follow the above Evaluation.
2. For Combined Theory & Lab courses follow the proportion rule as given below:
  - a) 3-0-2 nature Theory Credits & Lab Credits are in 3:1 ratio Hence the Internal marks evaluated for Theory & Lab as above to be divided in the ratio 3:1 and clubbed.
  - b) 3-1-2 nature Theory & Lab credits are in 4:1 ratio. Hence the Internal marks evaluated for Theory & Lab as above to be divided in the ratio 4:1 and clubbed.

The performance of the candidate in each semester shall be evaluated course wise, with a maximum of 100 marks for pure Theory courses and 100 marks for theory and practicals, on the basis of continuous Internal Evaluation and Semester end comprehensive Examination.

### **Evaluation of Dissertation**

Every candidate shall be required to submit dissertation after taking up a topic approved by the Department /University.

- A DAC consisting of HOD and Supervisor shall monitor the progress of the dissertation.
- The duration of the dissertation shall be two semesters. The candidate shall submit dissertation with the approval of DAC at the end of 4<sup>th</sup> semester.
- A candidate shall be allowed to take viva voce examination only after completion of all the course papers. The Viva-voce examination may be conducted once in two months for all the candidates submitted during that period.
- Three copies of the dissertation in the prescribed format certified by the supervisor & HOD shall be presented to DAC. One copy which is sent to the examiner will be forwarded to the dept. library after adjudication and one copy to the supervisor.
- Besides the supervisor, one senior faculty from the Department of English will adjudicate the dissertation.
- If the report of the examiner is favorable, Viva-voce examination shall be conducted by a board consisting of the Supervisor, HOD and an external examiner. The board shall jointly report on candidate's work based on the total marks obtained in dissertation through both internal evaluation and external evaluation.

If the report of the Viva-voce is not satisfactory the candidate will retake the Viva-voce examination after three months.

### **30.0 RUSTICATION**

A Student may be rusticated from the University on disciplinary grounds based on the recommendations of a committee constituted by the Vice Chancellor.

### **31.0 AWARD OF DEGREE**

A candidate shall be eligible for the award of respective degree if he satisfies the minimum academic requirements in every course and secures 'satisfactory' or higher grade in the courses/report on his Dissertation/dissertation and viva-voce.

- For the award of M.Tech degree a student must have earned stipulated credits (as approved by respective B.O.S) and obtained a minimum CGPA of 5.50.
- M.Tech Degree with Second class will be offered to those having  $CGPA < 6.5$
- M.Tech Degree with First class will be offered to those having  $CGPA \geq 6.5$
- And first class with distinction will be offered to those having  $CGPA \geq 7.5$  provided the student has cleared all the courses in first attempt within the stipulated time.

#### **With – Holding of Results**

If the candidate has not paid dues to the University or if any case of in-discipline is pending against him, the result of the candidate shall be withheld and he will not be allowed/ promoted into the next/higher semester. The issue of degree is liable to be withheld in such cases.

## **32.0 MISCELLANEOUS: General Rules and Regulations**

### **Admissions**

Admission to the programme, B.Tech, shall be made subject to the eligibility, qualifications and specialization prescribed by the University for the Programme, from time to time. Admissions shall be made either on the basis of merit rank obtained by the qualifying candidates at an entrance test conducted by the University, subject to reservations prescribed by the University and Government policies from time to time.

### **The educational process at the University**

Students are exposed to different kinds of learning which include theory based learning, practice based learning, self-learning and extra learning. The theory based learning and practice based learning is imparted by the teachers whereas the students learn certain areas through assignments and Open LABS on their own thus helping them with the practice of lifelong learning. Faculty of the University also exposes the students to latest technologies and future directions through providing the environment for extra learning by the students. Information and Communications Technology (ICT) tools like PPT's, audio - video systems and others are liberally used to bring in concept clarity to the students and aid in the teaching-learning process. The University updates its e-learning site regularly to keep the students abreast of the latest technologies.

All weak students are identified based on their performance in the internal and external assessments and the students are exposed to specialized extra training through delivering the remedial classes. With all the training and counseling the students are referred to a very high level committee called "Academic Council Bureau" who will do detailed investigation of the students and take corrective actions necessary to make the students move into regular stream of learning. The University conducts vocational courses in the winter and during summer to help the

students to either accelerate learning or repeat the courses for improving grade point average (GPA).

### **Certificate programmes**

The University offers various certificate courses that make a student gain hands-on expertise and skills required to serve the industry. Wide varieties of certificate courses that are internationally recognized are conducted for the benefit of the students in terms of pursuing excellent careers.

### **Doctoral programmes**

The University offers several Doctoral Programmes in different disciplines. Doctoral programmes are offered both full-time and part-time. Every department has been equipped with laboratories and specialized centers for conducting the research. Scholarships are offered for the full-time scholars for conducting research. Research programmes can also be offered by using the funding schemes offered by DST (Department of Science and Technology), AICTE (All India Council for Technical Education) and other Government establishments. Every student must qualify in the relevant PG programme by securing at least 55% of aggregate marks to qualify for taking the entrance exam for the doctoral programmes.

### **Performance assessment**

There will be continuous assessment of a student performance throughout the semester and grades will be awarded by the course faculty /coordination committee formed for this purpose.

In general, there is no strict marks-to-grade linkage. The University is adopting mixed grading system which is a combination of absolute grading and relative grading. When a student scores above 80% X grade is awarded and when the score is below 35% F (Fail) grade is awarded. A, B, C, D and E grades are awarded based on the overall performance of a student in a particular course at the discretion of the course coordinator.

## **Exceptions**

Notwithstanding anything stated in the rules, the Academic Council can make special provisions and exceptions depending on the merit of a case. Such cases shall not be cited as precedence in future occasions of similar nature.

## **Medals and awards**

Medals and Awards shall be given to the deserving students every year in the convocation of the University. A student recommended for award of a medal or prize should have ordinarily cleared all papers in single chance, (or through alternative/supplementary examination with loss of grade and should not have been awarded a major punishment) and should not have been awarded any punishment during his career by the University Disciplinary Committee. Students, who have taken more than 8 semesters to complete a programme, have obtained credit in supplementary or alternative mid semester exams, have taken summer courses or have repeated a course to improve grades will not be eligible for medals and prizes based on academic performance. They are however, eligible for all other awards, e.g., those based on performance in sports or cultural activities. Students who have been permitted full credit in alternative examinations on grounds of excellent attendance record will also be eligible for medals and prizes.

## **Membership in distinguished bodies**

The University will have membership with distinguished bodies like IET, ISTE, IEEE, ASME, CSI etc.

## **Industry relations department**

The University has planned and implemented mechanisms that help the students have excellent interaction with the academia.

The department of Industry Relations and Placements (IRP) spread across the country and to some parts of the world strives hard to establish

linkages and organizes different types of programmes through which the students interact with the academia. Through this process of Interaction, the students are made ready. The following types of programmes are conducted to make the students interact with the academia based officials:

- Continuing Education and Internship for Faculty
- Training for Students
- Visits and tours for Students
- Collaborative Programmes with academia
- Guest Lectures from academia
- Extension Lectures
- Placement
- Student Counseling & Guidance
- Student career Development
- Entrepreneurship Development Programme
- Alumni Interaction
- Practice school

### **Professional development of student**

The University faculty and students actively participate in the professional bodies spread across the world. Students participate in various activities conducted by these bodies especially in presenting their research findings.

## **SKILL DEVELOPMENT**

### **a) Development of Life Skills and Inner Engineering**

The University feels that it is its responsibility to mould the students as good human beings contributing to the country and to the society. Along with regular programmes every student admitted into KLU undergoes a one week special life skills / orientation programme.

Through this programme, KLU is producing the students who have *clarity of thought and charity at heart.*

Strict regularity, implicit obedience, courtesy in speech and conduct, cleanliness in dress and person is expected of each KLU student. Life skills and inner engineering teach a student his/her obligations towards God, himself/herself his/her country and fellow human beings.

Every student is encouraged to practice his/her own religious faith and be tolerant and respectful towards other religions.

### **b) Student Development and Placement**

The University is committed for overall development of the students. The students are trained to acquire skills that are required for pursuing a career in addition to acquiring knowledge and practice through teaching and learning.

### **c) Career Development**

The department of Communication and Soft Skills (CSS) has been established in the year 2005 especially to bridge the gap between academic and corporate worlds. The department is empowered with Quant, Reasoning, Psychology, English and Soft skills experts who train the students throughout the year and prepare them for campus placements. This is one of the biggest department having more than 40 Faculty members with different areas of expertise.

The only objective of the department is to see that 100% placements becomes a reality in the University. The department teaches the credited, audited and unaudited courses such as Essentials of Employability Skills, Professional Skills, Communication and Soft Skills, Communication and Study Skills etc. The concepts taught in these classes make students ready for corporate atmosphere. CSS department works in collaboration with the Department of Industrial Relations and placements and caters to the needs of all other departments of the University.



The skills required by each of the students are assessed and skill development programmes are designed and integrated with regular academic programmes. Every student will undergo all the skill development programmes which are scientifically analyzed and developed as per the academia requirements.

Academia focused specialized skill development programmes are conducted in the summer of third semester so that all the students participate in the campus placement activities and get placed and then move on to concentrate doing final year project.

#### **d) Career Counseling**

A special Counseling Cell consisting of professional student counselors, psychologists, and senior professors counsel/help the students in choosing a particular career and also help in acquiring various skills required to get into the chosen career.

The students are assessed in relation to the extent and depth of skills that they have and a plan is made in respect to every student for acquiring the skills as required by the academia. The students are apprised of the requirements and a match between the student's skills and the requirements is made and the GAP that may have existed is informed to the students. The students are also exposed to various ways and means of bridging the GAP. The cell continuously interacts with the CSS department who are primarily responsible for skill development and with Industrial Relations and Placements department who are responsible for placing the student.

A group of 20 students are allotted to a senior faculty member who counsels them regularly and acts as their mentor. The mentors communicate with CSS and IRP cells, the need for specialized training if any required by the students.

CSS (Communication and Soft Skills) department is manned with professionals who are experts in imparting training to make the students acquire the skills as required by the industry.

The Industrial Relations and Placement cell which is spread across the country and into some parts of the world regularly interacts with the industry and identifies the requirements of each of the industry and passes them to CSS department for designing the programmes which meet the requirements of the industry. The skill development programmes are delivered to the students without disturbing any of the regular programmes. The CSS department regularly monitors the performance of the students and sends the same to the career counseling cell for further guidance and any of the corrections required for bridging the GAP between the skill level of the student and requirements of the industry. In the summer of 3<sup>rd</sup> semester specialized and rigorous training is imparted by the CSS department to prepare the students to face placement challenges.

#### **e) Placements**

Industrial Relations and Placement Cell (IRP) a specialized organizational unit of K L University is spread across India and some parts of the world. The cell acquires the information of the requirements of all the units in terms of the skills and other job details and maps the students according to their skills and academic achievements. IRP prepares scheduled plan of placement and sends the same to CSS department for design and delivering the skill development programmes. Every student who needs a job shall register with IRP department. Only registered students will be placed. The IRP Cell continuously monitors and tracks every student in terms of placement and the level of skills of each of the student with reference to the level of skills required by the Industry.

#### **f) Campus Interviews**

The IRP Cell of K L University is in continuous interaction with the leading industrial organizations and invites the organizations to conduct on campus and off campus placement activities. KL University provides for all facilities required for conducting the campus placements.

K L University has the track record of conducting maximum number of campus placement drives in the country.

### **IRD Extension Cells**

To effectively maintain close relation with academia, “An Extension Cell” at Hyderabad, Chennai, Bangalore, New Delhi and Pune has been set up.

### **International relations study abroad programmes at the University Study Tour**

Students of K L University have an option to visit partner Universities abroad as a part of study tour and can attend the classes of foreign professors for a period of 7-10 days. In addition to academic exposure, they can learn International cultural issues by associating with foreign students.

### **LIBRARY**

Central library occupies a place of pride in the University and is an essential component of the institute’s outstanding research and education mission. It provides a comfortable and friendly environment that is conducive to learning, advancement of knowledge at the same time promoting discovery and scholarship.

#### **a) Library Resources**

The University has a Central Library which has an excellent collection of Books, Journals and Non-Book Materials in Humanities, Science, Engineering, Technology and Management.

<b>Subscriptions:</b>	ACM, IEEE, ASME, SPRINGER LINK, EBSCO
<b>Databases:</b>	DELNET, EBSCO

<b>Resources</b>	<b>Numbers</b>
No of Volumes	1,00,000+
No of Titles	27500+
Back Volumes	2811+
Project Reports	2852+
No of CDs & VCDs	4826
No of Reference Titles	12195
Journals/Magazines/Proceedings /Online/Hardcopy	6706
E-Books	2000+
Online Lectures	300
Online Courses	2500

### **b) Library Computerization**

The Central Library has computerized all its activities including Acquisition, Cataloguing, Circulation and Stock verification using in – house software. The Online Public Access Catalogue (OPAC) can be accessed on Internet and Intranet. The Central Library uses Barcode and Biometric technology for computerized circulation system and stock verification. The Central Library has developed in-house facility for bar coding of books and ID cards.

### **c) Video Collection and Video Viewing**

The Central Library is equipped with video viewing facility through FTP.

### **Working Times**

The Central Library remains open on all days of the year. Major Services in the library include Reference Service, Photocopying service, Resource sharing (Inter – Library Loan), Information Alert services of New Arrivals.

#### **d) Digital facility**

Digital Library is a part of the Central Library with wide network built up of fiber optic Giga-byte Ethernet backbone. Digital Library has computer terminals to access Internet/e-Learning material. It also has a CD server with 1000 CD capacity.

#### **e) Borrowing facility**

Every student must register with library for borrowing books from the Library.

UG students are given 4 Library - cards and the PG students 6 cards. A book borrowed can be retained with the student for 15 Days and if the book is not returned within the stipulated period, a fine of 1Rs/Day will be levied. If a book borrowed is lost the same must be replaced and if for any reason the book cannot be replaced then a fine amounting to 4 times the cost of the book must be paid. Any delay in any case will attract a fine of 1Rs/Day.

### **RESEARCH FEASIBILITY**

The University places special emphasis on research. Both the students and faculty are encouraged to take part in active research through paper presentations and publishing. That more than 550 research papers have been published in a span of two years speaks volumes about the R &D activity in the University.

Quality Research and Consultancy are given top priority in the University. Research strength of University covers diverse disciplines. Out of a total of 600 faculty members in the University, more than 140 faculty members hold a Doctoral degree and about 250+ are pursuing their research leading to the award of Ph.D. The outcome of some of the funded projects is being submitted as research thesis by the scholars.

### **a) Research Admissions**

Admissions are given into research programme leading to the award of PhD degree both for full time and part time scholars. Around 154 scholars have been given admissions in 14 departments during the academic years 2010-11 and 2011-12.

Fellowships are being offered to the full time scholars. Quality research output is ensured through regular monitoring of the work. Interdisciplinary research is also encouraged.

### **b) Research Groups**

In order to enhance sponsored research and consultancy activities within the University, 43 faculty research groups are functioning effectively. These groups also deliver quality courses and take research into the classroom. Each group is headed by a Senior Professor with a Ph.D. These are actively involved in setting research labs and also obtaining the funded research and consultancy projects from research organization and industries.

### **c) Research Centers**

K L University has established state of the art research centers which are being used by faculty based research groups.

### **d) Students in Research**

At the University, students involve in research through their undergraduate or graduate courses which includes Term Paper and Thesis. Students conduct research in their own field of interest giving due preference to the expertise of their guide. Students are encouraged to publish papers in the journals and also present the papers in various conferences.

## e) **International Conferences**

The University has a full-fledged convention center with 5 Air conditioned halls of various capacities to conduct National/International conferences. Every department conducts international conferences year after year.

## **Sports**

The University believes in holistic development of the students and has infused in them the enthusiasm to pursue sports and games. The institute is equipped with the following:

- Athletic track
- Tenni-koit Courts-2
- Tennis Courts-2
- Throw ball Courts-2
- Basketball Courts-2
- Chess
- Hockey Field
- Cricket Field with Net practice-3
- Handball Court
- Beach Volleyball Court
- Kabaddi Courts-2
- Caroms
- Badminton Courts
- Volleyball Courts-2
- Netball Courts-2
- Football Field
- Table Tennis-6
- Kho-Kho Court

The University has State-of-the Art indoor stadium of 30,000 sq ft with:

- 4 Wooden Shuttle Courts/Basketball Court
- Yoga and Meditation Center
- Dramatics
- 8 Table Tennis Tables
- Hobby Center
- Gymnasium for Girls
- Gymnasium for Boys
- Multipurpose room

The University has recruited coaches in every field of sport and game to train the students to different levels of expertise. It has provided the state of the art indoor and outdoor facilities related to different sports and games.

Students are encouraged to participate in several of the events which are conducted at different levels which include University /Zonal /State/National/International. Several of the events are conducted within the University itself facilitating number of students to participate in the events.

Winning the prizes and awards has been a regular practice for the students at KLU. All the major games and sports are supervised by well trained and qualified coaches aiding students in winning prizes at all levels.

**The University has achieved the following distinctions in Sports and Games:**

- The University is permitted by Association of India Universities (AIU) to participate in All India & South Zone Inter University Tournament.
- Stood 1<sup>st</sup> in National Chess Tournament held in Chennai.



- Won Gold Medal in South Zone University Swimming Competition.
- Stood in 9<sup>th</sup> & 14<sup>th</sup> Positions at India Universities power Lifting Tournament held in the state of Kerala.
- Won Gold Medal in National Level Yoga Competition in Goa.
- Our Shuttle Badminton Coach worked as an official in Commonwealth Games held in New Delhi in 2010.
- Female Coach of Table Tennis functioned as an important official at National Level Tournament.
- University Student Ch. Jignas won silver medal in Archery World Cup 2011 held in China. He also won All India University Archery gold medal, held at Punjab University, Punjab.
- University Student S. Ravi Teja won gold medal in King Anand International Level chess Competitions held at Puducherry.
- The University women's team won gold medal in badminton in All India Inter Engineering Colleges SSN trophy held at Chennai.
- The University men's team won bronze medal in Table Tennis in All India Inter Engineering Colleges SSN trophy held at Chennai.
- University student P. Lavanya secured silver medal in South Zone National Level Badminton Competitions held at Kerala.
- University student M. Prasanna Teja secured silver medal in State Level Shooting Championship held in Vijayawada.

Coaches are available to train the students in sports and games namely Volleyball, Gymnasium (Boys), Table Tennis (Boys & Girls), and Shuttle Badminton (Boys & Girls), Yoga, Meditation, Basketball, Football, Cricket, Lawn Tennis. The University has appointed Yoga Experts with a belief that every student will perform to their optimum level if their health is taken care of.

The University offers certificate programmes in various sports and games. These certification programmes reflect in the final grade card of the students.

Medals won during the last three years:

<b>Year</b>	<b>Inter- University</b>	<b>State</b>	<b>National</b>	<b>International</b>
2011-12	5	6	7	3
2010-11	13	2	1	2
2009-10	19	3	1	1

## **Conduct and Discipline**

The following are the Rules of Discipline and General Guidelines for Students:

*Discipline, being the Hall Mark of the University, should be maintained by one and all under any circumstances. There should be no ragging of students. Ragging is also prohibited by law and is a serious punishable offence.*

### **a) Use of vehicles**

1<sup>st</sup> and 2<sup>nd</sup> year students are not allowed to use two wheelers and cars in commuting to the University. They are allowed to be dropped at the University. In exceptional cases only permission may be granted by the Dean-Faculty & Student Affairs for use of vehicle. Students using vehicles must have valid driving license and University vehicle pass duly renewed. Two wheeler users must wear helmets as a proper safety measure.

### **b) Dress code**

Dress code should be strictly adhered to by the students. Students should wear the dress which is not gaudy or likely to disturb other student's concentration in studying / listening to the teacher.

### ***Male students***

All male students must come with shoes, combed hair, well dressed with shirts tucked in. They should not wear any clothes containing advertisements/ trademarks etc. or awkwardly designed or provocative or in any other manner deemed fit and objectionable for professional behavior. Male students must carry the identity cards in their shirt pockets. T-shirts with banyan cloth are prohibited.

### ***Female students***

Girl students must also come properly dressed in sarees, salwar-kurta (dresses), neatly combed and tied hair and leather foot wear. They should not wear any clothes containing advertisements/ trade marks, or awkwardly designed or provocative or in any other manner deemed fit and objectionable for professional behavior. Girl Students can carry the Identity cards in their purses / vanity bags. Shorts/Pants and Shirts are not allowed.

### **c) Laboratory etiquette**

All students, when they go for practical either in a laboratory or workshop or to a field, must put on the prescribed dress/apron. Girl students must also tie their hair into a knot and should not let it loose. All the students must wear shoes and roll their sleeves before entering the laboratories. Trousers worn by the students should not be too lengthy so as to cause inconvenience while walking. Shoes or any other footwear are not permitted in the computer labs.

#### d) Guidelines

- 1) There should be NO RAGGING of students. Ragging is also prohibited by law and is a serious offence.
- 2) Using Cell/Mobile phones in the Campus is **STRICTLY PROHIBITED.**
- 3) All students must attend classes in time.
- 4) Girl and boy students must sit separately in the classes and strictly as per their seating plan.
- 5) Tea and lunch break timings should be strictly adhered to and late comers for the next classes will be marked absent.
- 6) Students are not allowed to go out even for lunch. All the students should take lunch at University including hostlers and students staying near the University.
- 7) The main gate of the University will be closed 30 minutes after the commencement of the first hour.
- 8) No student is permitted to go out of the campus without a proper permission letter from their HOD/Dean during the working hours.
- 9) Students shall conduct themselves within and outside the campus of the University in a manner befitting the students of an Institution of National standing.
- 10) Discipline, being the hall mark of the University, should be maintained by one and all under any circumstances.
- 11) Smoking / consuming alcoholic drinks / Consuming narcotic drugs inside the campus or in the hostels is strictly prohibited. Serious action will be taken against the students found indulging in such activities.
- 12) All students must possess student ID Cards in the University premises. In the absence of ID card, for any reason, the student must possess a permission letter from HOD, until the ID card is obtained.
- 13) No student will loiter in and around the campus while there are classes for him/her. Students will visit the library in library hours /off time.

- 14) The language used by students while conversing should be appropriate and decent.
- 15) English should be the medium of communication for all purposes.
- 16) No student should bring any valuable items to the institute. All students should take care of the items / books they bring to the institution and are responsible for the safety of the same.
- 17) Senior students should not board the buses meant for juniors /first year students.
- 18) Writing all session examinations and assignments is mandatory.
- 19) Laptops are compulsory for all the students and must be used for academic purpose only. Laptops should not contain audio/video songs, movies, video games, etc.
- 20) Use of IPods/IPads/Cell Phones by students is banned in the campus and if found will be seized and a fine of Rs.10,000/- will be imposed on the student for carrying such items and the student may be suspended from attending classes for 15 days.
- 21) All students should make use of the sports and games facilities provided by the University.
- 22) Students are advised to stay back at the University after working hours, to make use of library, computer center, sports and games facilities.
- 23) 3<sup>rd</sup> and 4<sup>th</sup> semester students should give seminars in respective classes based on reputed journals / articles.
- 24) Students are advised to make use of the extra facilities provided for enhancing career prospect, like counseling bureau, soft skills, hobby clubs, technical clubs, communication skills with the help of experts available in University and also the services extended by IRP-Cell.
- 25) Students should visit University web-site regularly for information like attendance, session marks, lesson plans and assignment questions.
- 26) Misuse of internet by anyone will be viewed seriously.
- 27) All students must exhibit professional attitude, follow professional and general ethics all through their association with the University.

- 28) All the students should obey all the rules and policies of the University.
- 29) Students are advised to think positively and contribute for the development of themselves as well as that of University.
- 30) Students are advised to take up available real-time projects, industrial training and industrial exposure which in turn are considered by companies.

## **GUIDING PRINCIPLES OF THE UNIVERSITY**

- Build an environment that is conducive to academic pursuit, nurturing creative thoughts and inculcating a spirit of inquiry.
- Promote free exchange of knowledge and experience with others, while respecting each other's right to intellectual property.
- Ensure quality, speed, economy and transparency in all spheres of our activities.
- Create a truly multicultural community and promote cultural bonding and teamwork among all.
- Provide opportunity to every member of the University for achieving academic excellence, developing all round personality and realizing his or her full potential.
- Adopt state-of-the-art technology in all endeavors.
- Serve the society around, using the knowledge and expertise of the University.

## **TRANSITORY REGULATIONS**

Candidates who have discontinued or have been detained for want of attendance or who have failed after having undergone the course in earlier regulations and wish to continue the course are eligible for admission into the unfinished semester from the date of commencement

of class work with the same or equivalent courses as and when courses are offered whereas he continues to be in the academic regulations he was first admitted.

## **GENERAL**

- i. The academic regulations should be read as a whole for purpose of any interpretation.
- ii. Where the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.
- iii. In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.
- iv. The University may change or amend the academic regulations or syllabi at any time and the changes or amendments shall be made applicable to all the students on rolls with effect from the dates notified by the University.

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