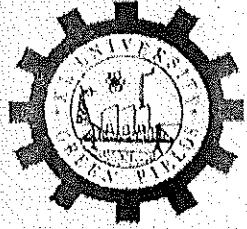


**Minutes 9<sup>th</sup> BOS Meeting of Computer Science and Engineering,  
K L University**

The 9<sup>th</sup> meeting of the BOS-CSE has been conducted on June 20, 2013 at 1:00 PM in the Computer Science and Engineering department, K L University.

The following members are present

<b>Serial Number</b>	<b>Name</b>	<b>Designation</b>	<b>Institutions</b>	<b>Signature</b>
1	Dr. D.V.L.N Somayajulu	Professor	NIT Warangal	DVLN Somayajulu
2	Sri Muni Reddy	Senior Manager	IBM software Labs, Bangalore	
3	Dr.G.Rama Krishna	Professor	K L University	
4	Dr. K Rajasekhara Rao	Professor	K L University	
5	Dr. V Srikanth	Professor	K L University	V Srikanth
6	Dr.V.Chandra Prakash	Professor	K L University	V Chandra Prakash
7	Dr.J.K.R.Sastry	Professor	K L University	J.K.R.Sastry
8	Dr.T.V.Rao	Professor	K L University	T.V.Rao
9	Prof.S.Venkateswarlu	Professor	K L University	S.Venkateswarlu
10	Dr.K.Subramanyam	Professor	K L University	K Subramanyam
11	Dr.M.R.Narasinga Rao	Professor	K L University	M.R.Narasinga Rao
12	Dr.M.S.R.Prasad	Professor	K L University	M.S.R.Prasad
13	Dr.Rajeswara Rao	Professor	K L University	Rajeswara Rao
14	Dr.K.V.V.Satyanarayana	Professor	K L University	K.V.V.Satyanarayana
15	Dr.Khalim Amjad Meerja	Professor	K L University	Khalim Amjad Meerja
16	Dr. S. Satyanarayana	Assoc. Professor	K L University	S. Satyanarayana
16	Dr.Vijaya babu	Professor	K L University	Vijaya babu
17	Sri K.Rajasekhar	Associate Professor	K L University	K.Rajasekhar
18	Dr. V Ramakrishna	Associate Professor	K L University	V Ramakrishna
19	Sri K.V.D Kiran	Assistant Professor	K L University	K.V.D Kiran



**K L UNIVERSITY**  
Green Fields, Vaddeswaram, Guntur District  
Ph: 08645246948, <http://www.kluniversity.in>

The following Agenda Items are discussed and the resolutions passed are marked against them.

S.No	Agenda Item	Resolution
1	Confirmation of previous minutes of meeting (DAC minutes 9/6/13)	Confirmed
2	Approval of Syllabus for 7 <sup>th</sup> and 8 <sup>th</sup> semester of B.Tech(CSE) 2010-2014	Approved
3	Approval of syllabus for 5 <sup>th</sup> , 6 <sup>th</sup> , 7 <sup>th</sup> and 8 <sup>th</sup> semester of B.Tech of CSE, 2011-2015 and 2012-2016	Approved
4	Approval of structure and syllabus of B.Tech CSE 2013-2017 (Annexure I)	Approved

Consequent to these resolutions, the necessary changes shall be carried out in the course structure and framework and the same will be circulated within a week.

A handwritten signature in black ink, appearing to read "Uth".  
Dr. V. Srikanth

Chairman BOS CSE

# Minutes of the meeting between IIIT and KLU at Hyderabad on 17<sup>th</sup> June 2013

## Members present

IIIT

Prof. G. Rama Murthy

KLU

Dr. V. Srikanth

Sh. N. Venkatram

1. KLU's B. Tech CSE Syllabus was discussed. IIIT indicated that the syllabus is almost in line with the current requirements of Software Industry, However , to match the exacting requirements they suggested that the following topics be included in the Syllabus.

## PROFESSIONAL CORE

### I. NETWORKING

- 1.1 Functional Approach (vs) Layering Approach covering the following areas
  - a. Multiplexing,
  - b. Switching,
  - c. Routing
- 1.2 Cross Layer design ideas
- 1.3 Some queuing theory: performance evaluation
- 1.4 Multiple access protocols
- 1.5 Wired network simulation: graph theoretic ideas
- 1.6 Some network programming with adequate practicals
- 1.7 Functional Approach, Book: Kurose, NS2 Simulation, Socket Programming, Windows Sockets, Installation of Switch.
- 1.8 Study of Wired Network Link Security
- 1.9 Practicals on AP. net, Klu network
- 1.10 Lan, Wan design implementation including Lan settings etc (trouble shooting)
- 1.11 Cisco certification CCNA.
- 1.12 Challenging homework problems
- 1.13 Windows Sockets
- 1.14 Page Problem as Home work
- 1.15 Use of TCP, UDP, Protocol Stack Design, HTTP, FTP.
- 1.16 In TCP/IP IPV6 details

### II. Computer networks and security

Rename the course to (cryptography & security)

Hacking, IP Spoofing, MAC address Spoofing

Building a Firewall, Web Page Sniffing, TC Dump

Secure production systems for Firewall, Antivirus, Hacking, E-Transactions, Mobile Payments

Knapsack Problems, Lattice Based Cryptography BOOK: Forouzan,

Securing Cloud Computing Systems, Reliability Analysis

Motivation of ECC (key Length) ,Miniproject: Implement Small Key Length ECC on a Hand Held Devices

Need to add Twisty Attacks

### **III. DLD&CO**

Basics , Readymade Systems with example, Pipelining, Superscalar Architectures, Design of COMBINATIONAL Circuit, Sequential Circuits, Relational of Design of LOGIC Gates using Multiplexers, Logical Reasoning Skills(How many BOOLEAN Functions are there for a logic circuit which has no of inputs, Building a Half adder, Full Adder, Architectural Features of Multicore Systems,i1,i2 Cache, VHDL).

Ananth Kumar Books.

### **IV. HCI&CG**

Building a GUI, Functionality and working of Mouse , Speech Interface, Hand based Testers, Recent Trends of Mouse.

### **V. OS**

Recent Trends in Defining Scheduling Algorithms, Cognitive Scheduling, Threading, virtualization, Virtual Machines, Develop a OS.

Tanenbaum Books.

### **VI. DBMS**

Audio, Video Databases, Manipulate Objects, Content Based Image Retrieval.

### **VII. MP&MC**

Multicore Systems, Platform Independence, Lab component , sorting Program in ALP, Features of embedded Systems, Use of MP&MC.

### **VIII. INTERNET PROGRAMMING**

Browser, Speech Interface to The Web, Web 2.0, Web 3.0, Web services.

### **IX. AFL**

Multiple Architecture leading to New Ideas in Automation and Turing machines.

### **X. SE**

Relational Suite ,Software Testing, Developing Software with dynamic operation of it, Experimental Approach, Model Based Approach For Software Testing, Modeling of Software.

### **XI. DAA**

Problems In Real time, Practicals, Complexity of a algorithm, Lower Bounds.

Diameter of a graph, Performance Evaluation of RA, All pairs shortest path

### **XII. Simulation and Modeling**

Discrete Event Simulation, Basic Probability(Random Variable, CDF, PDF, Join & Marginal), Stochastic process, Bernoulli Process, Prision Process

### **XIII. AI**

Connectionist Models:- Meculloch Pits Model, PESSAYTRANS, Back Process,

Books: Machine Learning By Tom Mitchell (Decision Tree).

#### XIV. Distributed Computing

Reliability Studies, Fault Tolerant Distributed Computing, Cooperating LANs.

#### XV. CD

Writing of a Simple Compiler (Page Will Deal ONLY with Matrix) and Cross Compilers

#### XVI. Electives

##### COMPUTER NETWORK STREAM

In High speed networks – the optical networks Books: J.Volrand, P.Variya

##### WCN

Distinguish Between Infrastructure And Adhoc Networks, MANET, 4G, Next Gen Systems, MIMO, Cooperative Comm (Virtual MIMO)Recent Wireless Technologies(WSN).

##### WEB TECHNOLOGIES STREAM

Semantic web (Web 2.0, 3.0)

Machine Translation, Semantic Web, Semantics of NL, word-sense disambiguation

##### INTELLIGENT STREAM

Pattern: Reinforcement, Learning, K-Means Algorithm.

Soft Computing: Self Organizing, Genetic Algorithm, Nature Based Computing, CO.

##### SECURITY STREAM

Cyber security

##### PARALLEL & DISTRIBUTED COMPUTING STREAM

Parallel architectures: multicore systems

##### EMBEDDED SYSTEMS STREAM

Cyber physical systems (eg WSN)

Cyber Physical Systems

2. KLU agreed to review the syllabus as per the above suggestions and revise its syllabus

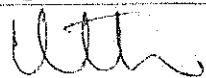
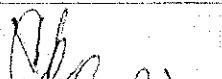
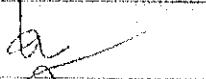
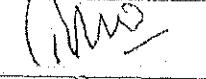
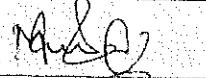
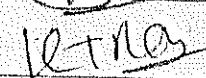
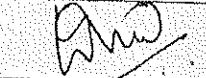
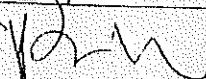
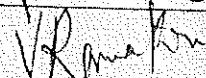
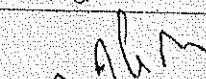
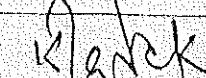
3. The above suggestions were mailed to Dr. DVNL Somayajulu ,Prof. NIT Warangal and Sh. S.

Muni Reddy IBM Labs, Bangalore for their comments

Minutes of 10<sup>th</sup> BOS Meeting of Computer Science and Engineering,  
K L University

The 10<sup>th</sup> meeting of the BOS-CSE has been conducted on November 18<sup>th</sup>, 2013 at 2.00PM in the Computer Science and Engineering department, K L University.

The following members are present:-

S.No	Name	Designation	Signature
1	Dr.V.Srikanth	BOS-Chairman	
2	Dr.V.Chandra Prakash	Member	
3	Dr.G.Rama Krishna	Member	
4.	Dr.K.Subramanyam	Member	
5.	Dr.T.V.Rao	Member	
6.	Dr.M.R.Narasinga Rao	Member	
7.	Dr.A.Srinivasa Rao	Member	
8.	Dr.K.Thirupathi Rao	Member	
9.	Dr.V.KrishnaReddy	Member	
10.	Dr.B.Thirumala Rao	Member	
11.	Dr.D.Rajeswara Rao	Member	
12.	Dr.B.Vjaya Babu	Member	
13.	Dr.M S R Prasad	Member	
14.	Dr.V.RamaKrishna	Member	
15.	Dr.Khalim Meerja	Member	
16.	Sri.K.Raja Sekhar	Member	



## K L University

(Koneru Lakshmaiah Education Foundation)

Estd. u/s 3 of UGC Act 1956

Green Fields, Vaddeswaram, (via) K.C. Works P.O. - 522 502, Guntur District, A.P.  
Phones: 08645-246948, 246615 FAX: 08645-247249, 0866-2577902  
Constituent College KLCE Accredited by NAAC with CGPA 3.76/4.00  
Approved by A.I.C.T.E & Accredited by N.B.A. ISO 9001-2000 Certified

### Minutes of 10<sup>th</sup> meeting of CSE-BOS on 18-11-13

#### Agenda Point1

#### Project Based Labs.

Guidelines are formulated and approved

#### Agenda Point2

#### Review of B.Tech and M.Tech Curriculum and Syllabus

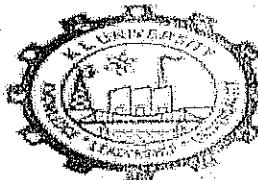
2.1 Approval of previous DAC Minutes (DAC minutes 11/11/13).

2.2 Open Electives.

2.2.1 For 2011 and 2012 batches Introduction to object oriented Programming, Fundamentals of Database Systems and Fundamentals of Software Engineering will be offered as Open electives.

2.2 The Syllabus for Parallel Processing Elective Course has been approved with minor modifications.

Dr. V. SRIKANTH  
Head of the Department  
Computer Science and Engineering  
KL UNIVERSITY  
VADDESWARAM, 522502, Guntur Dt.



# KL University

U/S 3 of UGC Act, 1956  
Koneru Lakshmaiah Education Foundation

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

### MINUTES OF DEPARTMENT ACADEMIC COMMITTEE MEETING

The Department Academic Committee Meeting was conducted in C409, Computer Science and Engineering, on 9<sup>th</sup> june 2013 at 11.00 AM.

The following Agenda Items are discussed and the resolutions passed are marked against them.

#### Agenda:

- To discuss feedback obtained from various stake holders.
- To discuss the syllabus and course structure of B.Tech 2013 batch (Annexure-I).

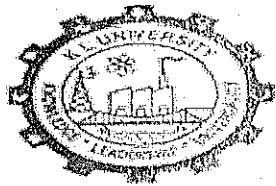
The following members were present:

1. Dr. V.Srikanth
2. Dr. V. CHANDRA PRAKASH.
3. Dr. T. V. Rao.
4. Prof. S. VENKATESWARLU.
5. Dr. K. SUBRAHMANYAM.
6. Dr. M. R. NARASING RAO.
7. Dr. D. RAJESWARA RAO,
8. Dr. M.S.R PRASAD.
9. Dr. K. V. V. SATYANARAYANA
10. Dr. V. RAMA KRISHNA
11. Dr. K. RAJA SEKHAR.
12. Mr. M. VISHNUvardhan.
13. Mr. K. V. D KIRAN.
14. A. Naga Sabarinath (10100416)
15. V. Alakananda (10100242)
16. Himaja (10100325)

The following points were discussed and resolved:

- Upon discussing the feedback from DAC members, resolved to introduce two to three open electives in order to gain more fundamental Knowledge in other department (or) general areas.

  
**PROFESSOR**  
Computer Science and Engineering  
KL UNIVERSITY  
VACATIONAL LEARNING & TEACHING SYSTEMS



# K L University

u/s 3 of UGC Act, 1956  
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- PO's and PEO's are introduced in Y13 Batch according to Washington Accord or ABET. LTC/Active learning was introduced as per Outcome based education.
- Discussed to change the course name Mathematical methods to Mathematical Methods for Computation in order to standardize the title.
- Engineering Mathematics and Advanced Engineering Mathematics are renamed as Linear algebra and Multivariate Calculus, Differential Equations Respectively, as the course name should be specific.
- Upon discussing the feedback from DAC members, it is resolved to introduce Thermodynamics and Network Theory in Engineering Sciences (AICTE model Curriculum Recommendation).
- As per ACM Computer Engineering model curriculum 2004, it is recommended to include Signal Processing in Engineering Sciences.
- According to ACM knowledge area, it is suggested to change the name of Cryptography and Network Security as Information Assurance security.
- Upon discussion, it is resolved to introduced new course Simulation and Modelling as per the guidelines of ACM Curriculum.
- Upon discussing the feedback from DAC members, in order to enhance Research and Publications, it is resolved to continue the Term Paper as minor project and finally as major project to come up with publications.
- In order to implement LTC effectively, it is suggested to allot three faculty for each core course.
- In order to emphasize more on machine Learning and upcoming Technologies, it is resolved to change Artificial Intelligence from elective to core course.
- It is suggested to add the Graph theory concepts to the Data Structures Course.

All programs for 2013-14 has been framed to be in relevance to APIIC, Human Resource Development Policy, Govt. of India, National Skill Development Corporation, Govt. of India, Confederation of Indian Industries, ABET, NBA norms, O\*NET and AICTE statutory norms.

Thus, framed curriculum has been developed through framing of Program Educational Objectives (PEO's) which are mapped to the university Vision and Mission, which are there by disseminated into Student Outcomes (SO's) which thereby have been developed into relevant Course Outcomes (CO's).

The resolutions are forwarded to BOS committee, for the approval.

HOD-CSE  
PROFESSOR  
Computer Science and Engineering  
K L UNIVERSITY  
VADODSWARAM-522 502, Guntur District

## DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

### R13 Annexure (B.Tech)-I

Sno	Course Code	Course Title	L-T-P	Cred Its	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	Type	Rationale				
							a	b	c	d	e	f	g	h	i	j	k			
1	13-HS-101	English	2-0-2	2	1	CO 1 Understand the concept of Group Discussion and listen and speak effectively during the discussion.											2			
					2	CO 2 Understand and improve learners' competency in competitive English and apply the principles of grammar in real life contexts.											2	Modified from the previous syllabus	This course helps to gain knowledge on professional communication skills	
					3	CO 3 Understand skimming & scanning, and apply the types of reasoning in comprehending the information.											1			
					4	CO 4 Understand the mechanics and application of presentation skills											2			
					5	CO 1 Understand the method of identifying synonyms and antonyms and analyze the meaning of a word from the context.										1				
					6	CO 2 Analyze issues and arguments in the process of critical reasoning and apply grammar rules to correct sentences.										1				
					7	CO 3 Apply the Concepts of basic Algebra and their importance while solving the problems										1				
					8	CO 4 Apply the short-cut methods on the concepts of different models in Calendars, Clocks, Blood relations and various types of arrangements.										1				
					9	CO 1 Understand the importance of Environmental education and conservation of natural resources.										1				
					10	CO 2 Understand the importance of ecosystems and biodiversity.										2				
3	11-HS-105	Ecology & Environment	2-0-0	2													1		Modified from the previous syllabus	This course helps in understanding the nature and respect it

*Dr. G. Krishna Mohan*  
*Professor*

*Computer Science & Engineering*  
*Konuru Lakshmi Education Foundation*

Sno	Course Code	Course Title	Cred S NO	L-T-P	Cred S NO	CO NO	Description of the Course Outcome		Program Outcomes (POs)						PSO	PSO	Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k	l
4	13-JS-104	Human Values	2-0-0	2	3-0-2	4	CO3	Apply the environmental science knowledge on solid waste management, disaster management and EIA process.							1	1	1	Previous syllabus
							CO1	Understand and identify the basic aspiration of human beings							2			
							CO2	Envisage the roadmap to fulfill the basic aspiration of human beings.						1	1	2		
							CO3	Analyze the profession and his role in this existence.						2	2	2		
								Determine extreme values for functions of several variables						2		2		
								Determine area, volume moment of inertia through multiple integrals in Cartesian or polar co ordinates.						2		2		
								CO 1						2		2		
								CO 2						2		2		
								CO 3						2		2		
														2		2		
														2		2		
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														2		2		
														2		2		
5	13-BS-101	Linear Algebra and multivariate calculus	3-0-2	4			CO1	Apply the concepts of vector calculus to calculate the gradient, directional derivative, arc length, areas of surfaces and volume of solids in practical problems						2		2		Modified from the previous syllabus
							CO2							2		2		This course helps to use mathematics for computer science applications
							CO3							2		2		
														2		2		
														2		2		
														2		2		
														2		2		
														2		2		
6	13-BS-102	Differential Equations	3-1-0	4			CO1	Formulate physical laws and relations mathematically in the form of first order differential equations and identify a method for solving and interpreting the results.						1		1		Modified from the previous syllabus
							CO2							1		1		
							CO3							1		1		
							CO4							1		1		
														1		1		
														1		1		
														1		1		
														1		1		

3. Missing Pages

Answer Book

Computer Science & Engg.

Batch 2015

Green Field

Sno	Course Code	Course Title	I-T-P	Credits	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale	
								a	b	c	d	e	f	g	h		
7	13-B.S.-103	Engineering Physics	3-0-2	4	23	CO-5	Verify the solution of problems through MATLAB.										
					24	CO-1	Understands structure of crystalline solids, kinds of crystal imperfections and appreciates structure-property relationship in crystals.										
					25	CO-2	Understands magnetic properties of materials and identifies their role in classification soft & hard magnetic materials having specific engineering applications.										Modified from the previous syllabus
					26	CO-3	Understands thermal and mechanical properties of materials, heat treatment methods for changing the microstructure of materials and responses of materials subjected to load.										This course helps to use principles of physics in computer science applications
					27	CO-4	Understands the role of electronic energy band structures of solids in governing various electrical and optical properties of materials.										
					28	CO-1	Describe some important design considerations in choosing a battery for a specific application.										
					29	CO-2	Predict potential complications from combining various chemicals or metals in an engineering setting.										
					30	CO-3	Examine water quality and select appropriate purification technique for intended problem										
					31	CO-4	Explain the role of chemical kinetics in the formation and destruction of ozone in the atmosphere and predict the connection between molecular behavior and observable physical properties.										
					32	CO-5	An ability to analyze & generate experimental skills.										
8	11-B.S.-104	Engineering Chemistry	3-0-2	4	33	CO-1	Apply the concept of sets, relations, functions, discrete structures, Sum rule and product rule.										Dt. G. Krishna MICHAR
																	At. Mr. HOD

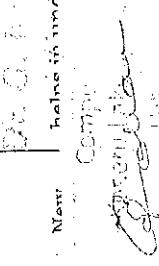
Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes [POs]						Type	Rationale		
								a	b	c	d	e	f	g	h		
9	13-BSS-206	Discrete Mathematics	3-0-0	3			CO 2	Apply Count discrete event occurrences; Apply Propositional logic and First order logic to solve Problems								Modified from the previous syllabus	This course helps to use mathematics for computer science applications
							CO 3	Apply Advanced Counting Techniques;Formulate and solve recurrence relations;Apply Lattice theory									
							CO 4	Apply the concepts of graphs and trees									
								Understand the concepts of crystallography and crystalline imperfections in order to determine crystal structures and to identify defects in crystals									
10	13-ES-103	Engineering Materials	3-0-0	3			CO 1									Modified from the previous syllabus	This course helps to use principles of materials in computer science applications
							CO 2	Understand electrical and optical properties of materials and apply them to know various mechanisms involved in electrical, electronic, optical, optoelectronic devices.									
							CO 3	Understand mechanical and thermal properties of materials and apprehend their importance in identification of materials for specific engineering applications									
							CO 4	Understand magnetic properties of materials and apply them to know various mechanisms involved in magnetic memory devices and transformers.									
41							CO 5	Understand various properties of materials and apply the knowledge to execute the related experiments to get hands on experience and also to develop some inter disciplinary projects.							Modified from the previous syllabus	This course helps to use principles of materials in computer science applications	
							CO 1	Understand and apply the fundamentals of a measurement system, characteristics, and metrology using simulation and experimentation tools.									
							CO 2										
							CO 3										

  
 Dr. K. Venkateswara Rao  
 Associate Professor  
 Computer Science  
 Green Fields University

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO	PSO	Type	Rationale	
								a	b	c	d	e	f	g	h	i	j	k
11	13-ES-102	Measurements	3-0-2	4	43	co-2	Understand various computer parameters, and apply different measuring techniques on various electrical parameters using simulation and experimentation tools.									2		
					44	CO-3	Understand electronic & electro-physiological parameters, and apply measuring techniques on electronic parameters using simulation and experimentation tools.	2	2							2		Modified from the previous syllabus
					45	CO-4	Understand and apply different measuring techniques on civil and mechanical parameters using simulation and experimentation tools.	2	2							2		
					46	CO-5	Apply the theoretical concepts to measure different parameters									2		
					47	CO 1	Draft orthographic Projections, Isometric views,projection of planes, Manually and prepare Models in workshop by using drawings.								2	2		
					48	CO 2	Draft orthographic projections isometric views, projection of planes using Autocad. Draft projection of solids Manually and by using AutoCAD and prepare Models in workshop by using different workshop trades								2	2	Modified from the previous syllabus	
					49	CO 3	Draft Development of surfaces of solid and sections of solid Manually									2		
					50	CO 4	Practicing house wiring through Auto Cad									2	2	
					51	5	Develop 2D & 3D components using Auto Cad Software									2	2	
					52	CO 1	Hands on practice on wood working operation using hand tools									2		
					53	CO 2	Hands on practice on sheet metal working									2		
					54	CO 3	Hands on practice on moulding by preparing a sand mould									2		
					55	CO 4	Hands on practice on Soldering by mounting electronic components									2		
12	11-ES-104	Engineering Graphics with CAD	0-0-4	2														Computer Aided Design
13	13-ES-105	Workshop Practice	0-0-4	2														Konerty Links

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Sno	Course Code	Course Title	L-T-P Credits	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale	
							a	b	c	d	e	f	g	h		
14	13-ES-101	Problem Solving through Programming	3-0-2 4	56	CO 1	Illustrate how problems are solved using computers using operators and different number types, functions.										
				57	CO 2	Illustrate and use Control Flow Statements in C along with preprocessor directives and Storage classes.										
				58	CO 3	Interpret & Illustrate different formatted input and output along with arrays and pointers with arrays.										Modified from the previous syllabus
				59	CO 4	Illustrate the use of Pointer Arithmetic along with arrays, Characters and Strings.										
				60	CO 1	Apply the concept of forces, governing static equations and analyze planer system of forces. Apply different analytical methods on spatial system of forces and analyzing them										
				61	CO 2	Understanding the concepts of planar and non-planar system of parallel forces and analyzing them, estimate moment of inertia of lamina and material bodies										Modified from the previous syllabus
				62	CO 3	Analyzing the rigid bodies under translation and rotation with and without considering forces.										helps in understanding mechanics
				63	CO 4	Understanding the engineering mechanics physical systems prepare and demonstrate the models with the help of mechanics concepts to solve the engineering problems										
				64	CO 5	Apply the concepts of mechanics and carryout different experiments and analyze the results										
				65	CO 1	Understand the fundamentals of thermodynamic systems and processes										
15	13-ES-106	Engineering Mechanics	3-0-2 4	66	CO 2	Apply laws of the thermodynamics and principle of entropy to engineering devices.										None

  
 Dr. G. R. Patil  
 Head of Department  
 Computer Engineering  
 Green Projects

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course					Program Outcomes (POs)					PSO	PSO	Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k			
16	13-ES-201	Thermodynamics	3-0-0	3	67	CO-3	Analyze various air standard cycles and their performance.	2								2		New Course is Added	Helps in understanding thermodynamics and logic building	
							Evaluate the performance of fuels and combustion to various engines.		1						1	1				
							Apply the theoretical concepts to conduct various experiments of thermodynamics practically and analyze the data.							1	2					
							69													
							70	CO 1	Understanding network theory	2					2					
17	13-IS-203	Network Theory	3-0-2	4		CO 2	Apply concepts of electrical networks		2					2			New Course is Added	Helps in understanding network theory and logic building		
							71	CO 3	Analyse concepts of electrical networks		2				2					
							72	CO 4	Analyse concepts of electrical networks topologies		2				2					
							73		Demonstrate signals and their Spectra	2	2				2					
							74	CO 1						2						
18	13-ES-205	Signal Processing	3-0-2	4		CO 2	Analyse discrete time systems	2	2					2			New Course is Added	Helps in understanding signal analysis and logic building		
							75	CO 3	Design filters to cater signal analysis needs					2						
							76	CO 4	Analyze non stationary signals in time frequency domains					2						
							77	CO 5	Analyze non stationary signals in frequency domains					2						
							78		The student will be able to understand Basic Concepts of OOP, apply the concepts of classes and objects through Java Language.	2	2			3						
19	13 ES 202	Object Oriented Programming	3-0-2	4		CO 1								3		New Course is Added	Learning and Programming			
							79	CO2	apply the concepts of constructors, Overloading, parameter passing, access control, Inheritance.		2			2						
							80	CO3	The student will be able to apply Packages, Interfaces, Exception Handling.					3						
							81	CO4	The student will be able to apply I/O Streams, and understand Basic Concepts of Multi-Threading.		2			2						
							82							3						

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Alternating HOD

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Sno	Course Code	Course Title	L-T-P	Cred Its	S NO	CO NO	Description of the Course Outcome		Program Outcomes (POs)						Type	Rationale				
							a	b	c	d	e	f	g	h	i	j	k	PSO	Type	Rationale
20 13 ES 204	DATA STRUCTURES	3-0-2	4	3-0-2	83	CO5	Students will be able to develop programs and projects in java.	2	2											
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
21 13 cs 202	Human computer interaction	3-0-2	4	3-0-2	91	CO1	Students will be able to develop programs and projects in java.	2	2											
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
21 13 cs 202	Human computer interaction	3-0-2	4	3-0-2	92	CO4	analyze and compare linear data structures and analyze different searching and hashing techniques.	2	2											
							CO4													
							CO4													
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							CO4													
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							CO4													
21 13 cs 202	Human computer interaction	3-0-2	4	3-0-2	93	CO5	analyze and compare linear data structures and analyze different searching and hashing techniques.	2	2											
							CO5													
							CO5													
							CO5													
							CO5													
							CO5													
							CO5													
							CO5													
							CO5													
							CO5													
21 13 cs 202	Human computer interaction	3-0-2	4	3-0-2	94	CO1	analyze and compare linear data structures and analyze different searching and hashing techniques.	2	2											
							CO1													
							CO1													
							CO1													
							CO1													
							CO1													
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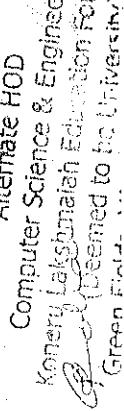
Computer Science & Engineering  
Department of Education Faculty  
(Desemned to be University)

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course		Program Outcomes (PO)						PSO Type	Rationale				
							a	b	c	d	e	f	g	h	i	j	k	l	m	ps
22	13 CS 203	Operating Systems	3-0-2	4	95	CO2	Apply the concepts Process Scheduling algorithms and Process Synchronization Problems.	2			2					2				
					96	CO3	Solve the concept of the Deadlock, Memory Management and Virtual Memory Concepts.	2		2					2					
					97	CO4	Demonstrate file system interface, structure, file allocation methods, free space management and threads.	1			1				2					
					98	CO5	Create and develop a project along with his/her team members.				3				2					
					99	CO1	Explain the advantages of DBMS, its Characteristics, Concepts and ER-Model.	1							3					
					100	CC2	Demonstrate Relational Database using SQL detailing the role of Relational Algebra and Relational Calculus	2							3					
					101	CC3	Illustrate the normal forms of Relational DBMS detailing the process of normalization.				2				3					
					102	CO4	Examine Transaction Management, Concurrency Control, File Organizations, Indexing, and Storing data.				2				3					
					103	CO5	Create and Access Data Base for given Applications	2							3					
23	13 CS 20	Data Base Management System	3-0-2	4	104	CO1	Understand OSI and TCP/IP Models and basics of physical layer and their issues	1							2					
					105	CO2	Demonstrate Data Link layer issues and medium access control sub layers concepts				2				2					

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Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale	
								a	b	c	d	e	f	g	h		
24	13 CS 205	Computer Networks	3-0-2	4	106	CO3	Analyze and implement the algorithms of network and transport layers and concerned services			2					2	New Course is Added	Basic principles of networking is taught for skill development
						CO4	Evaluate and execute the concepts of TCP, UDP and the application layer conceptions								2		
						CO5	Demonstrate the basic concepts of protocols and their design including client/server models, connection oriented and connection-less models			3					2		
						108	Describe and illustrate the concepts of HTML tags, and CSS through an application, DHTML, JavaScript functions								2		
						109	CO1								3		All modern webbased development taught for Skill Development
						110	CO2	Describe Java fundamentals and inheritance property and polymorphism in java.			2				3		
						111	CO3	Develop Java programs using Encapsulation property and Exception handling			2				3		
						112	CO4	Design java applications using multithreading, Applets, Design results processing application using JSP			2				3		
						113	CO5	Demonstrate Java programs in computer lab			1				2		
						114	CO1	Illustrate different phases involved in the software development			2				3		
25	11 EM 301	Internet Programming	3-0-2	4	111	115	CO2	Explain the concepts of system modeling			2				3	Retained from previous syllabus	All modern webbased development taught for Skill Development
						116	CO3	Design the architecture UI			1				2		
						117	CO4	Demonstrate the testing strategies			1				3		
						118	CO1	Examine the space and time complexities of basic algorithms							2		

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Sno	Course Code	Course Title	L-T-P Credits	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	PSO Type	Rationale
							a	b	c	d	e	f	g	h	i	j
27	13 cs 302	Design and Analysis of Algorithms	3-0-2 4	119 120 121 122 123	CO2 CO3 CO4 CO1 CO1 CO2 CO2	Demonstrate Greedy and Dynamic programming methodology for solving optimization problems.	1							2		
						Apply back tracking and branch and bound methodology for searching same state space trees.			2					2		New Course is Added
						Identify the purpose of NP-hard, NP-complete hard graph problems and illustrate PRAM algorithms.								2		
						Understand various Number systems Codes and their conversion procedures and Complements of numbers used in Digital Systems	1							2		
						Apply Boolean Identities for simplifying Boolean Expressions,Combinational and Sequential Circuits.								2		
														2		
														2		
														2		
														2		
														2		
28	13CS201	Digital Logic Design & Computer Organization	3-0-2 4	124 125 126 127 128	CO3 CO4 CO5 CO1 CO2	Understand the functionality and design the CPU functional units - control unit, registers, the arithmetic and logic unit, the instruction execution unit, and the interconnections among these components.	1							2		
						Understand, analyze and design main cache and virtual memory organizations.		2						2		
						Demonstrate the basic concepts of Digital logic in the Laboratory								2		
						Illustrate and examine conventional cryptographic procedures	1			2				2		
						Illustrate and examine modern cryptographic and hash algorithms	1		2					2		
29	13 cs 303	Information Assurance and Security		129	CO3	Demonstrate and study MAC and digital signature algorithms		1	2					2		
														2		

  
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 Director, Department of Computer Science & Engineering  
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Sno	Course Code	Course Title	L-T-P	Cred its	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	Type	Rationale	
							a	b	c	d	e	f	g	h	i	j	k
30 13 CS 304	Artificial Intelligence	3-0-2	4	4	130	CO4	demonstrate and study key management distributions		1	2	2					2	
					131	CO1	PROLOG programming for the AI concepts			2						3	
					132	CO2	Students will be able to relate methods for encoding knowledge In computer systems	1							3		
					133	CO3	Students will be able to Interpret the Problems and search related to AI	1							3		
					134	CO4	Students will be able to infer Slot-and-filler structures and architecture of neural networks as connectionist models	1							3		
					135	CO5	Demonstrate the basic concepts of artificial intelligence in the Laboratory			2					3		
					136	CO1	Distinguish centralized computing and distributed computing detailing formal model of a distributed message passing system and the complexity measures of message passing between systems presenting important abstractions for designing distributed programs	2			2				3		
					137	CO2	Identify the leader by coordinating among processors, elaborating formal models for shared memory system and memory requirement for solving mutual exclusion problem.			2	2				3		

Mr. Pradeep Mofha  
Alternate HOD

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Green Fields, VADDESWARAM-52

Sno	Course Code	Course Title	L-T-P	Credits	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO	Type	Rationale		
							a	b	c	d	e	f	g	h	i		
31	13 CS 305	Distributed Computing	3-0-2	4	CC3	Utilize DSM model for inter process communication showing relationship between various types of shared objects and Identify clock synchronization problem applying tight bounds to synchronize clocks.										New Course is Added	
					CO4		2	2									basic principles of distributed software over networking environment is taught for skill development
					138												
					139	Examine the process of realizing reliable fault tolerance in distributed system reflecting the specific type of faulty behavior and illustrate simulation that makes Byzantine failures appear to be crash failures											
					140	CO5	Experiment with laboratory programs and develop a small project along with his/her team members.										
					141												
					142	CO1	The Student will be able to define & represent finite Automata and its variations & construct Finite Automata for accepting different kinds of regular languages and their inter conversions										
						CO2											


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 Guntur District, Andhra Pradesh

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course Outcome		Program Outcomes (POs)						Type	Rationale
							a	b	c	d	e	f	g	h	i	
32	13 CS 306	Automata and Formal Languages	3-0-2	4	143	CO3	The Student will be able to describe grammars, its representation and the foundation for parsing mechanism of language semantics and constructing context free grammars for different languages								New Course is Added	New system design concepts are taught for skill development
					144	CO4	The Student will be able to define & represent Push down Automata and its variations and Construct a PDA for real world problems and its justification with Grammars									
					145	CO5	The Student will be able to define Turing Machine and its variations & construct Turing Machine for unrestricted languages									
33	13 CS 401	Compiler Design	3-0-2	4	146	CO1	Understand the overall compiler architecture and design of Lexical Analyzer									
					147	CO2	Construct the parser using the Yacc tool									
					148	CO3	Analyze Syntax directed definition and its translations schemes, intermediate code								2	new course introduced

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Computer Science & Engineering  
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Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)						Type	Rationale					
								a	b	c	d	e	f	g	h	i	j	k	l	m
34	13 CS 402	Simulation and modelling	3-0-2	4	153	CO3	Analyze Simulation of Input Modeling and Verification and Validation of the Models	2			2					2			new course introduced	Add knowledge towards stochastic models and helps in self development
							Apply the Simulation on Manufacturing and Material Handling Systems, Computer System and Computer Networks.			2					2					
							CO4													
							154													
							CO5													
							155	Develop the basic concepts of Simulation and Modelling	2		2					3	2			
35	13 CS 331	Data Warehousing and Mining	3-0-0	3	156	CO1	Student should be able to Understand the necessity of data preprocessing in construction of data warehouse.									3				
							157													
							CO2	Student should be able to Analyze multidimensional data using OLAP tools to facilitate effective data mining.	2	2		6				3				
							158													
							CO3	Student should be able to Apply the concepts of data analysis and clustering to postulate accurate classification model for a given problem.			2	2				3				
							159													
36	13 CS 332	Advance Database Management Systems	3-0-0	3	160	CO4	Student should be able to Recommend a methodology for mining complex data types and detection of anomaly for the given Application.				3	3				3				
							161													
							162													

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HOD  
Computer Science & Engineering

Koneru Lakshmiiah Education Foundation  
(Deemed to be University)  
Green Fields Vizianagaram

Sno	Course Cde.	Course Title	L.T.P	Cred its	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale	
							a	b	c	d	e	f	g	h	PSO	
							2									
37 11 CS 432	Big Data Analytics	3-0-0	3	163	CC04	Analyze multimedia databases.										
						Explain the big data that is emerging from multiple big data sources in terms of velocity, variety and veracity.	1								3	
						Illustrate the technologies, processes and methods for analyzing big data.										Latest concepts big data and its analysis is taught for employability and skill development
						CO02										
						Demonstrate the key principles of data analysis using the R tool										
						CO03										
						CO04										
						Examine advanced Graphs, Regression, Forecasting and Time Series models using R analytical platform.										
						CO05										
						Understand the fundamentals of database security and security risks related to user administration	1									
38 13 CS 333	Database Security	3-0-0	3	164	CO01	Understand the fundamentals of database security and security risks related to user administration										New Course is Added.
						CO02										
						Apply password policies and security models										
						CO03										
						Analyze virtual private database using views in SQL Server 2000 and Oracle 10g and understand database auditing, auditing models										
						CO04										
						Apply auditing techniques on the real world problems using Oracle 10g and SQL server 2000										
						CO05										
						Summarize distributed databases										
						CO06										
39 13 CS 333	Database Security	3-0-0	3	165	CO02	Analyze parallel database for searching, sorting, join and group by join.										Helps for employability in securing the database
						CO03										
40 13 CS 333	Database Security	3-0-0	3	166	CO04	Analyze parallel database for searching, sorting, join and group by join.										Helps for employability in securing the database
						CO05										


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Sno	Course Code	Course Title	L-R	P	Cred Sits	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale						
								a	b	c	d	e	f	g	h	i	j	k	l	m		
39	13 CS 431	Distributed Database Systems	3-0-0	3		CO3	Apply parallel database for indexing, collection of join query, scheduling, optimizing, transactions in Distributed, Grid Databases and Grid Concurrency Control.															
					174	CO4	Illustrate grid transaction atomicity, durability, replica management and data intensive applications.		2													
					175	CO1	Understand the basic components of TCP Protocol suite.															
					176	CO2	Understand the concepts of IP protocol ,mobile IP,P Addressing mechanisms & attacks on IP															
					177	CO3	Apply socket API to write programs related to client server communication			1												
					178	CO4	Analyze Various Networking Applications & Network management techniques via a case study/ NS2 simulator tool.				1											
					179	CO1	Student will be able to Understand the key components of Network Programming				1											
					180	CO2	Student will be able to Apply socket API for TCP and UDP to write programs related to Client/Server communication				1											
					181	CO3	Student will be able to Analyze various Advanced Sockets & Networking Applications through Unix domain protocols and Routing Sockets				1											
					182																	
41	13 CS 335	NETWORK PROGRAMMING	3-0-0	3																		

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Alternate HOD  
Computer Science & Engineering Foundation

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course				Program Outcomes (POs)				PSO	PSO Type	Rationale	
							a	b	c	d	e	f	g	h	i	j	k	l
42 13 CS 336	Routing Algorithms	3-0-0	3	183	CO4	Student will be able to construct multiple threads that communicate with each other using Sun RPC	1			1				2	3			
						Understand the need of Routing Algorithms, framework and principles of Network Flow Modeling	1							3				
						Analyze the routing algorithms with its working and comparison.								3		New course introduce d		
						CO2				2				3				
						Understand the routing architectures and quality of service in routing	1							3				
						CO3								3				
						Understand the working structure of VONP Routing	1			2				3				
						CO4								3				
						Understand the basics of light signals and different types of optical communication link methodologies				1				2				
						CO1								2				
43 13 CS 433	High speed Optical Communication Networks	3-0-0	3	188	CO2	Understand the concepts of transmission characteristics of optical fibers and dispersion				1				2				
						CO3								2				
						Understand the concepts of optical transmission and detectors, electro optic modulation and optical amplifier								2				
						CO4								2				
						Analyze the concepts of optical networks								2				
						CO1								2				
						Analyze the concept of basic networks				2				2				
						The course will provide knowledge of information security technology and methods for communication systems that provide services for mobile users by wireless access networks.								2				

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Design HOD

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Guntur District, Andhra Pradesh



Sno	Course Code	Course Title	L-T-P	Cred Its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale					
								a	b	c	d	e	f	g	h	i	j	k	l	m	
47	13 CS 435	Software Reliability	3-0-0	3	203	CO4	Infer Practice the different roles in the requirement engineering process, by working in groups analysis	1									2				
							CO1	Explain software Reliability measures viz., mean time to failure, Failure Rate Function,	1								2				
							CO2	Illustrate software verification, validation and their relation to software reliability	1								2	new course introduce d	Helps towards employability as Software Engineering experts		
							CO3	Demonstrate estimation of reliability using failure data of a software product and software cost model based on software reliability	1								2				
							CO4	Examine a suitable reliability model for the product									2				
							CO1	Ability to define software systems by using various testing principles followed by test processes by inferring test generation methods and FSM models.	1								2				
							CO2	Make test adequacy assessment with the help of various source tools and application of those techniques in commercial environment.									2	New Course is Added	Helps towards employability as Software Engineering experts		
							CO3	Analyze and prepare quality management by considering governmental standards, pareto principles and up-front quality technique.	2								2				
							210														
48	13 CS 335	Software Testing & Quality Assurance	3-0-0	3	209																

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Sno	Course Code	Course Title	L-T-P Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale				
							a	b	c	d	e	f	g	h	i	j	k	l	m
49	13-CS-430	Software Project Management	3-0-0	3	211	Relate the concepts of software safety and its relation to software quality assurance for the development of small projects.	CO 4												
						Ability of the students to Develop project plans for different types projects	CO 1	1											
					212	Ability to estimate time, cost, effort, resource requirements and tac quality	CO 2												
						Ability to undertake risk management for a given project	CO 3												
					213	Ability to handle different tools using which project management is undertaken.	CO 4												
						Students will be able to Define the concept of Secure Systems Design, Security Goals , Secure Design Principles.	CO1												
					214	Students will be able to Define the concept of Secure Systems Design, Security Goals , Secure Design Principles.	CO1												
						Students will be able to show the Client-State Manipulation with SQL Injection for Password Security and Cross-Domain Security in Web Applications	CO2												
					215	Students will be able to show the Client-State Manipulation with SQL Injection for Password Security and Cross-Domain Security in Web Applications	CO1												
						Students will be able to show the Client-State Manipulation with SQL Injection for Password Security and Cross-Domain Security in Web Applications	CO2												
50	13 CS 340	SECURE PROGRAMMING	3-0-0	3	216	Students will be able to show the Client-State Manipulation with SQL Injection for Password Security and Cross-Domain Security in Web Applications	CO1												
						Students will be able to show the Client-State Manipulation with SQL Injection for Password Security and Cross-Domain Security in Web Applications	CO2												
					217	Students will be able to Find Static Analysis as Part of the Code Review Process and Buffer Overflow	CO3												
						Students will be able to List the process of Errors and Exceptions in Web Applications, XML and Web Services with the help of Privacy And Secrets Privileged Programs	CO4												
						Students will be able to Find Static Analysis as Part of the Code Review Process and Buffer Overflow	CO3												

  
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 Dr. B. K. Patra  
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 Odisha, India  
 E-mail: [bikash@kier.ac.in](mailto:bikash@kier.ac.in)  
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Sno	Course Code	Course Title	I.T-P	Credits	S NO	CO NO	Description of the Course Outcome				Program Outcomes (POs)						Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k	
51	13 CS 341	CRYPTA NALYSIS	3-0-0	3	220	CO1	Understand the classic ciphers and world war II ciphers	1									3	New course
					221	CO2	Understand the Stream Ciphers and Block Ciphers		2								3	Helps towards employability as Security and Forensics experts
					222	CO3	Illustrate and Examine Hash Functions	1									3	introduce d from previous syllabus
					223	CO4	Describe the Public Key System and analyze the Attacks on Public Key System		2								3	
52	13 CS 342	Elliptic curve Cryptogr aphy	3-0-0	3	224	CC1	Understand the Equations, Laws and Proofs for Elliptic Curve	1		1							2	
					225	CC2	Understand the Torsion Points, Elliptic Curve Over Finite Fields	1	1	1							2	Helps towards employability as Security and Forensics experts
					226	CC3	Understand the Discrete Logarithm Problem, Elliptic Curve Cryptography		1	1							2	New course introduce d
					227	CC4	Understand the Applications, Divisors, Hyper Elliptic Curves.			1	1						2	
53	13 CS 343	Web Application Securit y	3-0-0	3	228	CO1	Illustrate Web Application (In) security, Core Defense Mechanisms, Web Application Technologies, Mapping the Application, Bypassing Client-Side Controls.										New course	
					229	CO2	Analyze Attacking Authentication, Attacking Session Management, Attacking Access Controls, Attacking Data Stores, Attacking Back-End Components.									2	Helps towards employability as Security and Forensics experts	

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Dr. G. Kishore Mohan

Alternate HOD

Computer Science &amp; Engineering

Koruru Lakshmaia Education Foundation

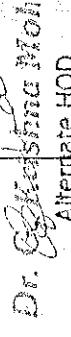
(Deemed to be University)

VADDIGAMMAI 522 501

Andhra Pradesh, India

Guntur District, Andhra Pradesh

Sno	Course Code	Course Title	L-R-P	Credits	S NO	CO NO	Description of the Course	Program Outcomes (POs)							Type	Rationale						
								a	b	c	d	e	f	g	h	i	j	k	l	m		
53	13 CS 437	Security	3-0-0	3			Categorize Attacking Application Logic, Attacking Users: Cross-Site Scripting, Attacking Users: Other Techniques, Automating Customized Attacks, Exploiting Information Disclosure.													introduce d	Helps towards employability as Security and Forensics experts	
							CO3															
					230		Inspect Attacking Native Compiled Applications, Attacking Application Architecture, Attacking the Application Server, Finding Vulnerabilities in Source Code.															
							CO4															
					231		Students are able to understand importance of system reliability using common statistical distributions and the importance of reliability models.															
							CO 1															
					232		Students are able to analyzes security risk by using quantitative models and stopping rules in software testing.															
							CO 2															
					233		Students are able to analyze availability modeling and investigate the reliability in simple and complex embedded systems, Introduction to Microsoft TWC.															
							CO 3															
					234		Students are able to understand applications of aspect-oriented programming in trustworthy computing.															
							CO 4															
					235																	
54	13 CS 438	Trust Worthy Computing	3-0-0	3																		

  
 Dr. B. Srinivas Mohan  
 Alternate HOD  
 Computer Science & Enginee

MGR Sri Lakshmi Education Fc  
 (Deemed to be University)  
 Green Fields, VADDESHAMRALE  
 Guntur District, Andhra Pradesh

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course				Program Outcomes (PO)				PSO	PSO Type	Rationale				
							a	b	c	d	e	f	g	h	i	j	k	l	m		
55 13 CS 343	Parallel Processing	Advanced Computer Architecture	3-0-0	3	236	CO1	Student will be able to Understand the Overview of von Neumann architecture and Pipelining.									2		Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies			
					237	CO2	Student will be able to Demonstrate Hierarchical Memory Technology	1								2					
					238	CO3	Student will be able to Explain the Instruction level parallelism	1								2					
					239	CO4	Student will be able to Analyze the Multiprocessor Architecture	2								2					
							Understand the performance improvements of uni-processor systems through pipelining, classify different parallel processing systems.									2					
		Cloud Computing	3-0-0	3	240		Differentiate shared memory and distributed memory systems, design parallel programs through shared memory programming API's									2		Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies			
					241	CO1										2					
					242	CO2										2					
					243	CO3										2					
					244	CO4										2					
56 13 CS 344					245	CO1	Understand Enterprise cloud computing paradigm.	1								2		Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies			
					246	CO2	Understand PaaS cloud Computing Environments.									2					
					247	CO3	Analyze the performance of High performance computer on clouds.									2					
					248	CO4	Evaluate the data security issues in clouds.									2					

*Dr. Srinivasa M*  
Alternate HOD

Computer Science & Engg  
Manchu Lakshmi Engineering

(Deemed to be University)  
Guntur Fields, VADDAM,  
Guntur District, Andhra Pradesh

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CON NO	Description of the Course Outcome				Program Outcomes (POs)						Type	Rationale	
							a	b	c	d	e	f	g	h	i	j	k	l	m
58	13 CS 345	Grid Computing	3-0-0	3	249	CO2	Apply the concepts of parallel programming using CORBA							2	2	2	2	New course introduced	Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies
					250	CO3	Understand and analyze the concepts of cluster computing and its deployment	2						2	2	2	2	New course introduced	Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies
					251	CO4	Understand and integrate the resources and services in Metacomputing						2		2				
					252	CO1	Apply parallel programming algorithms						3		3				
59	13 CS 440	High Performance Computing	3-0-0	3	253	CO2	Understand and apply the analytical modelling of parallel programs						3		3				
					254	CO3	Apply and analyze the GPU programming						3		3				
					255	CO4	Apply parallel programming to heterogeneous computing						3		3				
					256	CO1	Students are able to understand two-dimensional Computer Graphics	1					3		3				
60	13 CS 341	2D/3D Graphics	3-0-0	3	257	CO2	Students are able to solve mathematical methods for three dimensional computer graphics		2				3		3				
					258	CO3	Students are able to compare and contrast realistic rendering						2		3				
					259	CO4	Students are able to explain geometric modeling						1		3				
					260	CO1	Describe the uses of Digital Image Processing and its Applications, Image Acquisition and Image Enhancement						1		3				
61	13 CS 347	Digital Image Processing	3-0-0	3	261	CO2	Analyze image enhancement algorithms such as histogram modification, contrast manipulation, edge detection and restoration						1		3				

Signature : *[Signature]*  
Computer Science Engineering  
Koneru Lakshmaiah Education Foundation  
(Deemed to be University)  
Guntur, Andhra Pradesh  
Date: 10/07/2018  
Alternate HOD

Signature : *[Signature]*  
Computer Science Engineering  
Guntur Institute of Technology  
Guntur, Andhra Pradesh  
Date: 10/07/2018

Sno	Course Code	Course Title	L-T-P	Cred Sits	CO NO	Description of the Course Outcome	Program Outcomes (POs)								Type	Rationale			
							a	b	c	d	e	f	g	h	i	j	k	l	m
62 13 CS 348	Animation	3-0-0	3	3	CO3	Inspect how Wavelet, Multi-resolution, Compression and Morphological Image Processing are realized													Graphics and Visualization
					CO4	Illustrate Image Segmentation, Representation and Description and Object Recognition process													
					263	Understand the basics and technical background of animation.													
					264	Analyze the techniques used for Motion capturing and types of Animations													
					265	Understand the concepts of fluids and image modeling													
					266	Understand the various types of CO4 animation.													
					267	Understand the video formats and usage of video compression techniques.													
					268	Analyze the audio compression techniques and introduction to streaming media													
					269	Understand and Analyze the concepts of audio and video encoding and preprocessing													
					270	Apply stream serving and live web casting techniques for various files													
63 13 CS 441	Video and Audio Streaming	3-0-0	3	3	CO1	Understand the framework and standards for multimedia communication.													
					271	CO2	Analyze the application layer services for multimedia technologies												
					272	CO3	Understand the middleware layer streaming for media coding												
					273	CO4	Understand the application layer serving and live web casting techniques for various files												
64 13 CS 442	Multimedia Technologies	3-0-0	3	3	CO1	Understand the framework and standards for multimedia communication.													
					274	CO2	Analyze the application layer services for multimedia technologies												

  
 Dr. S. M. Venkateswaran  
 (Decided to be University of)  
 Green Fields, VADDESWARAN

Computer Science & Engineering  
 Koneru Lakshmaiah Education Foundation  
 (Decided to be University of)

Sno	Course Code	Course Title	L-T-P	Cred its	CO NO	Description of the Course Outcome	Program Outcomes (PO)							PSO	PSO	Type	Rationale	
							a	b	c	d	e	f	g	h	i	j	k	
55	13 CS 349	Soft Computing	3-0-0	3	275	CO4	Apply and analyze the Network layer functionalities for multimedia technology											
							Explain soft computing differentiating hard and soft computing and enumerate briefly overview of fuzzy systems, neural networks and genetic algorithms	2									2	
							CO1											
							276											
							CO2											
							277											
							CO3											
							278											
							CO4											
							279											
66	13 CS 350	Machine Learning	3-0-0	3	280	CO1	Understand and apply the differences among the styles of learning: supervised, reinforcement, unsupervised and parametric methods											
							280											
							CO2											
							281											
							CO3											
							282											
							CO4											
							283											
							284											

Helps towards employability for expertized knowledge in Artificial Intelligence and Neuralnetworks and fuzzy Logic

New Course is Added

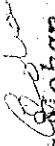
*Dr. G. Krishnamoorthy  
Computer Science & Engineering  
Departmental Head  
Kanchi Institute Educated in PUTH  
Presented to be University  
Guru Nanak Dev University  
Gujarati District, Andhra Pradesh*



Sno	Course Code	Course Title	L-T-P	Cred Its	S NO	CO NO	Description of the Course Outcome		Program Outcomes (POs)						PSO	Type	Rationale
							a	b	c	d	e	f	g	h	i		
70	13 OE 429	Principals of Information Technology	3-0-0	3	297	CO2	Understand the theories and techniques in developing database applications and be able to write queries, functions and procedures with help of SQL.									modified from previous syllabus	concepts of data engineering is taught for employability
						CO3	Understand the different normal forms and transaction issues and be familiar with managing database systems, new developments and trends in databases.			2	2				2		
					298	CO1	Understand the architectural design of a computer and various basic concepts of operating systems and programming fundamentals			2	2				2		
					299	CO2	Analyze various software development methodologies and gain capability to design databases.			2	2				2	modified from previous syllabus	overall picture of IT is taught for employability
71	12 OE 445	Fundamentals of DBMS	3-0-0	3	300	CO3	Designing various model diagrams using Unified modeling language and understand basic commands that come across in querying a database.			2	2				2		
					301	CO1	Understanding Values, Behavior and Attitudes			2	2				2		
					302	CO2	Understand and observe Observation, Introspection, Contemplation, Meditation and Concentration, Schools of Meditation			2	2				2	New course introduced	Builds Personality ethics and Values and helps in employment
72	13 OE 430	SIMPLY DEVELOPMENT	3-0-0	3	303	CO3	Understand Stress Management, Tips for Self-Management			2	2				2	Retained from previous curricula	Understand Professionalism & Professional Responsibility HOD Certified Software & Engineering Management Skills
73	ME	Management Elective	3-0-0	3	305	CO	To enhance the Management Skills and to learn Professional Ethics								2		

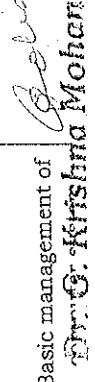
*B. Mohan*  
B. Mohan  
Professional Ethics & Engineering  
Management Foundation

Sno	Course Code	Course Title	L-T-P	Cred Sits	S NO	CO NO	Description of the Course Outcome										Program Outcomes (POs)						Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	
74	13-AC-201	Energy & Society	Audit course	nil	306	CO 1	To Understand various aspects of Energy and its Technology											1	1				Retained from previous curriculum	to explore skills on the society
75	13-AC-202	Employability Skills	Audit course	nil	307	CO 2	To acquire Knowledge on the energy audits and enhance for energy estimation											2					Introduced new course	Enhances Skills in communication which in turn helps in achieving Employability
76	13-AC-301	Advanced Employability Skills	Audit course	nil	308	CO 1	Analyze one's own strength as a speaker/ Communicator and use discretion while listening.										2					Introduced new course	Enhances Skills to compete in competitive exams	
77	13-TP-401	Term Paper	0-0-4	2	309	CO 2	Apply and analyze various concepts of writing strategies in professional communication skills like, reports, resume and minutes of the meeting.										1					Introduced new course	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability	
78	13-MP401	Minor project	0-0-6	3	310	CO 1	Understand the organization of the passage and also analyze the tone, attitude and style of the author.									2					Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability		
79	15CSS12	Computational Intelligence	3-0-2	4	311	CO 2	Acquire knowledge of and apply people skills in various social organizational and corporate ambiances.									2					Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability		
					312	CO	To enhance Practical exposure towards solving complex engineering problems in order to achieve Research Exposure									2					Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability		
					313	CO1	Advances in Computing deals with the theoretical foundations of information and computation and their implementation and application in computer systems									2					Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability		
					314	CO1	It has also provided contributors with a medium in which they can explore their subjects in greater depth and breadth									2					Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability		
					315	CO2										2					Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability		
																						New Course is added	Useful for the skill development, good to develop new祭祀	

  
 Dr. Mohan  
 Education Founder  
 Recognized to be University  
 Approved by VASCEAAN  
 Approved by MHRD  
 Computer Science & Engineering  
 Lakshmi Education Founda  
 Computer Science & Engineering

Computer Science & Engineering  
 Lakshmi Education Founda  
 Computer Science & Engineering

Sno	Course Code	Course Title	L-T-P	Cred-its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	PSO Type	Rationale							
								a	b	c	d	e	f	g	h	i	j	k	l	m				
80	15CSS513	Machine Intelligence	3-0-2	4	316	CO3	That continue to be of significant, lasting value in this rapidly expanding field.																	
					317	CO4	Software Environments for Distributed systems and clouds: Parallel and Distributed Programming Models.																	
							Explain the differences among the styles of learning: supervised, reinforcement, unsupervised, inductive and deductive learning.																	
						CO1																		
					318	CO2	Comprehend probabilistic methods for learning																	
					319	CO3	Understand Multivariate regression and Classification																	
					320	CO4	Understand rule based knowledge and Analyze clustering																	
					321	CO1	Evaluate mathematical expressions by using different types of operations on numbers.																	
					322	CO2	Simplify expressions and solve equations & inequations.																	
					323	CO3	Apply different types of arithmetic expressions to solve given problems.																	
					324	CO4	Apply methods to find areas , volumes and use graphs to reduce non-linear to linear forms.																	
					325																			
81	15CSS514	Optimization Techniques	3-0-2	4		CO1	Understand the functionality and design the CPU functional units - control unit, registers, the arithmetic and logic unit, the instruction execution unit, and the interconnections among these components.																	
						326																		
						CO2	Understand, analyze and design main cache and virtual memory organizations.																	
						327																		
						CO3	Understand, analyze and design different types of I/O transfer techniques																	
						328																		
82	15CSS515	Device Management	3-0-2	4																				

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)								Type	Rationale
								a	b	c	d	e	f	g	h	i	
83	15CS516	Formal Methods	3-0-2	4	329	CO4	Understand the design issues of RISC and CISC CPUs and the design issues of pipeline architectures									2	
						CO1	Analyzing the design issues involved in various constructs of programming languages, Design top-down and bottom-up parsers									2	
					330	CO2	Develop syntax directed translation schemes, Design and implement LR parser									2	New Course is Added
						CO3	Use formal grammars to specify the syntax of Languages									2	Useful for the skill development, good to design new languages
						331	Analyzing the methods and tools to define syntax and semantics of a languages									2	
						332										2	
						333										2	
					334	CO1	Examine the space and time complexities of basic algorithms									2	
						CO2	Demonstrate Greedy and Dynamic programming methodology for solving optimization problems									2	New Course is Added
						335	CO3	Apply back tracking and branch and bound methodology for searching same static space trees								2	fine tuning and design of algorithms for the requirement for skill development
84	13OE456	Algorithm Design and Analysis	3-0-2	4	336	CO4	Identify the purpose of NP-hard, NP-complete hard graph problems and illustrate PRAM algorithms									2	
						337	CO1	Understand the basic concepts of operating system, OS structure and process concepts.								2	
					338	CO2	Apply the concepts Process Scheduling algorithms and Process Synchronization Problems.								2		
						339	Principles									2	
															2	New	
 Dr. Krishna Mohan																	

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course		Program Outcomes (PO)									Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k		
85	13OE455	Operating Systems	3-0-2	4		CC03	Solve the concept of the Deadlock, Memory Management and Virtual Memory Concepts.			2								Course is Added	taught for skill development
					340	CO04	Demonstrate file system interface, structure, file allocation methods, free space management and threads.			1									
					341		Understand the overall compiler architecture and design of Lexical Analyzer			1									
					342	CO01				2									
					343	CO02	Construct the parser using the Yacc tool			2									
					344	CO03	Analyze Syntax directed definition and its translations schemes, intermediate code			2								New Course is Added	Enhances Practical exposure towards solving complex engineering problems inorder to achieve employability
86	13OE457	Theory of Computation	3-0-2	4		CO04	Apply the code optimization and generation techniques in the development of a compiler.			2									
					345					2									
					346	CO01	Understand Algorithms and sorting networks			1	2		3						
					347	CO02	Ability to design and analyze parallel algorithms			2			3						
					348	CO03	Apply graph and search algorithms on sorting networks			1			3						
					349	CO04	Understand arithmetic and randomized computations			2	2		3						
					350	CO01	Acquire the ability to identify potential sources of data and distinguish between quantitative and qualitative data												
					351	CO02	Learn to identify and describe a variety of analysis tools that will assist in processing data.			2			2						
					352	CO03	Demonstrate basic data analysis techniques and show how this analysis can contribute to a business' future growth			2			2						
88	13OE459	Data Analytics	3-0-2	4															

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	PSO Type	Rationale				
								a	b	c	d	e	f	g	h	i	j	k	l	m	Retained from previous curriculum
					353	CO4	Learn how to effectively communicate the results of your analysis.														
89	13PWA01	Final year Project	0-0-18	9		CO	To enhance Practical exposure towards solving complex engineering problems in order to achieve Research and Industry Exposure														Enhances Practical exposure towards solving complex engineering problems in order to achieve employability
90	13PS401	Practice School	0-0-18	9		CO	To enhance Practical exposure towards solving complex engineering problems in order to achieve Industrial Exposure														Enhances Practical exposure towards solving complex engineering problems in order to achieve employability

*B. Balaji*  
HOD-CSE

Department of Computer Science & Engineering  
Sri Sathya Sai Institute of Higher Learning  
Sri Sathya Sai Nagar, Prasanthi Nilayam,  
Vijayawada - 520 050  
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## K L University

(Koneru Lakshmaiah Education Foundation)

Deemed to be University, Estd. u/s 3 of UGC Act. 1956

Accredited by NAAC as 'A' Grade University & Approved by AICTE & ISO 9001-2008 Certified

Campus; Greenfields, Vaddeswaram -522502, Guntur District, Andhra Pradesh, INDIA.

Phone: +91-863-2399999 Fax: +91-863-2388999

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### Department of Computer Science and Engineering

#### Alumni Feedback on Curriculum

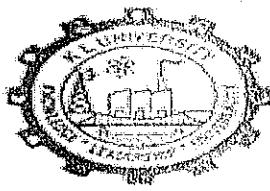
#### Academic Year (2013-14) Sem 1

1. To increase (Inter Discipline) open electives from two to three to gain more fundamental knowledge in other department (or) general areas.
2. To recommend Term Paper as minor project and finally as major project to come up with publications to enhance more on Research and Publications.
3. To make Artificial Intelligence course as the core course.
4. To Introduce JAVA concepts in object oriented programming.

  
HOD-CSE

PROFESSOR

Computer Science and Engineering  
K L University  
Guntur District



**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**MINUTES OF DEPARTMENT ACADEMIC COMMITTEE MEETING**

The Department Academic Committee Meeting was conducted in C408, Computer Science and Engineering, on 11<sup>th</sup> November 2013 at 1.00 PM.

The following Agenda Items are discussed and the resolutions passed are marked against them:

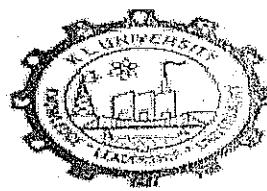
**Agenda:**

- To discuss feedback obtained from various stake holders.
- To discuss the syllabus and course structure of B.tech 2013 batch (Annexure-I).
- To discuss and formulate the guidelines for project based labs.

The following members were present:

1. Dr. V.Srikanth
2. Dr. V. CHANDRA PRAKASH.
3. Dr. T. V. Rao.
4. Prof. S. VENKATESWARLU.
5. Dr. K. SUBRAHMANYAM.
6. Dr. M. R. NARASING RAO.
7. Dr. D. RAJESWARA RAO.
8. Dr. M.S.R PRASAD.
9. Dr. K. V. V. SATYANARAYANA
10. Dr. V. RAMA KRISHNA
11. Dr. K. RAJA SEKHAR.
12. Mr. M. VISHNUvardhan.
13. Mr. K. V. D. KIRAN.
14. Naga Sabarinath (10100416)
15. V. Alakananda (10100242)
16. Himaja (10100325)

  
PROFESSOR  
Computer Science and Engineering  
KL UNIVERSITY  
Machilipatnam, Andhra Pradesh, District



# KL University

u/s 3 of UGC Act, 1956  
Koneru Lakshmaiah Education Foundation

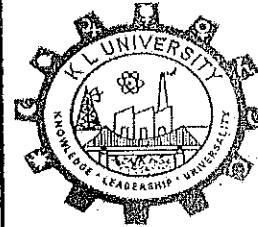
The following points were discussed and resolved:

- Up on discussing the feedback from DAC members, it is resolved to change the course OOP through C++ to JAVA in order incorporate core JAVA skills for student.
- Up on discussion regarding project based labs, In order to enhance practical knowledge in core courses, three Mini projects are removed from Y12 Batch and resolved to include Capstone Design Project to every core course(15 courses).

All programs for 2013-14 has been framed to be in relevance to APIIC, Human Resource Development Policy, Govt. of India, National Skill Development Corporation, Govt. of India, Confederation of Indian Industries, ABET, NBA norms, O\*NET and AICTE statutory norms. Thus, framed curriculum has been developed through framing of Program Educational Objectives (PEO's) which are mapped to the university Vision and Mission, which are there by disseminated into Student Outcomes (SO's) which thereby have been developed into relevant Course Outcomes (CO's).

The resolutions are forwarded to BOS committee, for the approval.

HOD-CSE  
PROFESSOR  
Computer Science and Engineering  
KL UNIVERSITY  
VADDERSWARAM-522 502, Guntur District



**K L University**

(Koneru Lakshmaiah Education Foundation)

Estd. u/s 3 of UGC Act 1956

Green Fields, Vaddeswaram, (via) K.C. Works P.O. - 522 502, Guntur District, A.P.

Phones: 08645-246948, 246615 FAX: 08645-247249, 0866-2577902

Constituent College KLCE Accredited by NAAC with CGPA 3.76/4.00

Approved by A.I.C.T.E ± Accredited by N.B.A.± ISO 9001-2000 Certified

## CONSOLIDATED REPORT ON FEEDBACK GIVEN BY ACADEMIC PEERS

2013-14

Sno	Date	Feedback	Resource person name
1	25 Apr 2014	Introduce new M.Tech. program on cloud computing.	A.S.N.Chakravarthy Professor, Dept. of CSE, JNTUK.
2	25 Apr 2014	Suggestions on new M.Tech. CSE curriculum and approved M.Tech(CSE) structure.	P.S.Avadhani, Prof. & Vice principal, AU.

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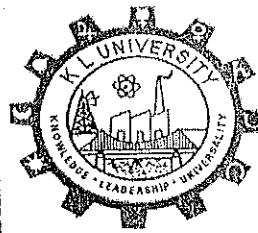
**Dr. V. SRIKANTH**

Head of the Department

Computer Science and Engineering

KL UNIVERSITY

VADDESWARAM 522 502, Guntur Dt.



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### CONSOLIDATED REPORT ON FEEDBACK GIVEN BY ACADEMIC PEERS

2013-14

	Excellent	Very Good	Good	Average	Total
Feed back(in %)	0	25	75	0	100

Uth  
Dr. V. SRIKANTH  
Head of the Department  
Computer Science and Engineering  
KL UNIVERSITY  
VADDESWARAM-522 502, Guntur Dt.

KL UNIVERSITY  
DEPARTMENT OF CSE  
Industry personnel feedback on the curriculum  
SUMMARY REPORT - A.Y. 2013-14

S No	Date	Feedback	Industry person	Industry
1	14-06-2013	Informed the importance of Computer vision in IT industry and suggested to start a course in that	Mr. S. Siva Prasad	FactSet
2	03-07-2013	Give emphasis for Animation technologies like Maya	Mr. Ankit	CTS
3	20-12-2013	Informed the importance of Fundamentals of Information technology to all the Engineering students, He strongly recommended to start a course to non IT students for which the syllabi and material will be provided by Infosys	Mr. Pramod	Infosys
4	04-04-2014	Introduce video and audio streaming in game and graphics programming. It can be introduced as a separate course	Mr. P Ram	Wipro
5	25-04-2014	Described the cloud computing emphasis and recommended to start a new stream in M.Tech	Mr. A. Srinivasa Rao	Tech Mahindra



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### CONSOLIDATED REPORT ON FEEDBACK GIVEN BY PARENTS

2013-14

SNo	Date	Feedback	Parent Name
1	2.11.2013	Counselling the students regularly is good	Mrs.M.Bhanu Rekha
2	2.11.2013	In Laboratory more no of faulty is available to clear the doubts my ward is happy	Mr.K.Soma Sekhara varma
3	2.11.2013	Discipline is good	Mr.V.V.Koteshwra Rao
4	2.11.2013	Existing Standards of Curriculam is Good	Mrs.B.Vijaya
5	4.07.2014	My ward is feeling difficult of data structures to get pass marks. Requesting to reduce the burden of course	Mr.O.Kanaka Durga
6	5.11.2014	Please introduce java course instead of oops through C++	Mrs.M.Lavanya
7	4.07.2014	Library is Good	Mr.N.Rambabu
8	5.11.2014	Please see that the student get enough support from faculty when they are practicing in the class also	Mr.M.Subba Rao

Uth

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Dr. V. Srinivasulu

Head of the Department  
Computer Science and Engineering  
KL UNIVERSITY  
VADDESWARA P.O. 522 502, Guntur Dist.



## K L University

(Koneru Lakshmaiah Education Foundation)  
Deemed to be University, Estd. U/s 3 of UGC Act, 1956  
Accredited by NAAC as 'A' Grade University & Approved by AICTE & ISO 9001-2008 Certified  
Campus: Greenfields, Undiswaram - 522502, Guntur District, Andhra Pradesh, INDIA.  
Phone: +91-863-2399999 Fax: +91-863-2388999  
Admin Off: 2B-30-38, Muzukun Road, Government, Vijayawada - 520 002, PH: +91-866-2677715, Fax: +91-866-2577717.

### Department of Computer Science and Engineering

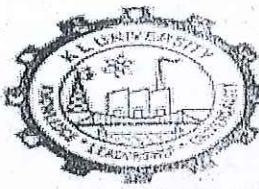
#### Alumni Feedback on Curriculum

Academic Year (2013-14) Sem 2

1. Give more emphasis on coding and practice which will give hand during placements.
2. New stream can be included in M.Tech stream explicitly covering Cloud computing domain.

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Computer Science and Engineering  
M.G.R.E.C., Guntur  
Vijayawada, Andhra Pradesh, India



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

MINUTES OF DEPARTMENT ACADEMIC COMMITTEE MEETING

The Department Academic Committee Meeting was conducted in C409, Computer Science and Engineering, on 9<sup>th</sup> june 2013 at 11.00 AM.

The following Agenda Items are discussed and the resolutions passed are marked against them.

Agenda:

- To discuss feedback obtained from various stake holders.
- To discuss the syllabus and course structure of B.Tech 2013 batch (Annexure-I).

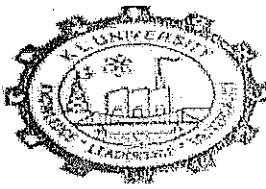
The following members were present:

1. Dr. V.Srikanth
2. Dr. V. CHANDRA PRAKASH.
3. Dr. T. V. Rao.
4. Prof. S. VENKATESWARLU.
5. Dr. K. SUBRAHMANYAM.
6. Dr. M. R. NARASING RAO.
7. Dr. D. RAJESWARA RAO.
8. Dr. M.S.R PRASAD.
9. Dr. K. V. V. SATYANARAYANA
10. Dr. V. RAMA KRISHNA
11. Dr. K. RAJA SEKHAR.
12. Mr. M. VISHNUvardhan.
13. Mr. K. V. D. KIRAN.
14. A. Naga Sabarinath (10100416)
15. V. Alakananda (10100242)
16. Himaja (10100325)

The following points were discussed and resolved:

- Upon discussing the feedback from DAC members, resolved to introduce two to three open electives in order to gain more fundamental Knowledge in other department (or) general areas.

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- PO's and PEO's are introduced in Y13 Batch according to Washington Accord or ABET. LTC/Active learning was introduced as per Outcome based education.
- Discussed to change the course name Mathematical methods to Mathematical Methods for Computation in order to standardize the title.
- Engineering Mathematics and Advanced Engineering Mathematics are renamed as Linear algebra and Multivariate Calculus, Differential Equations Respectively, as the course name should be specific.
- Upon discussing the feedback from DAC members, it is resolved to introduce Thermodynamics and Network Theory in Engineering Sciences (AICTE model Curriculum Recommendation).
- As per ACM Computer Engineering model curriculum 2004, it is recommended to include Signal Processing in Engineering Sciences.
- According to ACM knowledge area, it is suggested to change the name of Cryptography and Network Security as Information Assurance security.
- Upon discussion, it is resolved to introduced new course Simulation and Modelling as per the guidelines of ACM Curriculum.
- Upon discussing the feedback from DAC members, in order to enhance Research and Publications, it is resolved to continue the Term Paper as minor project and finally as major project to come up with publications.
- In order to implement LTC effectively, it is suggested to allot three faculty for each core course.
- In order to emphasize more on machine Learning and upcoming Technologies, it is resolved to change Artificial Intelligence from elective to core course.
- It is suggested to add the Graph theory concepts to the Data Structures Course.

All programs for 2013-14 has been framed to be in relevance to APIIC, Human Resource Development Policy, Govt. of India, National Skill Development Corporation, Govt. of India, Confederation of Indian Industries, ABET, NBA norms, O\*NET and AICTE statutory norms.

Thus, framed curriculum has been developed through framing of Program Educational Objectives (PEO's) which are mapped to the university Vision and Mission, which are there by disseminated into Student Outcomes (SO's) which thereby have been developed into relevant Course Outcomes (CO's).

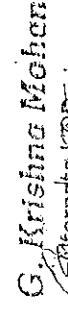
The resolutions are forwarded to BOS committee, for the approval.

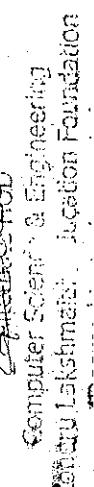
HOD-CSE  
DEPT OF  
Computer Science and Engineering  
K L UNIVERSITY  
VADDESWARAM-522 502, Guntur District

## DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

### R13 Annexure (B.Tech)-I

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	PSO Type	Rationale			
								a	b	c	d	e	f	g	h	i	j	k	l	m
1	13-HS-101	English	2-0-2	3	1	CO 1	Understand the concept of Group Discussion and listen and speak effectively during the discussion.											2		This course helps to gain knowledge on professional communication skills
					2	CO 2	Understand and improve learners' competency in competitive English and apply the principles of grammar in real life contexts.											2		
					3	CO 3	Understand Skimming & scanning, and apply the types of reasoning in comprehending the information.											1		
					4	CO 4	Understand the mechanics and application of presentation skills.											1		
					5	CO 1	Understand the method of identifying synonyms and antonyms and analyze the meaning of a word from the context.											2		
2	13-HS-102	Language and Reasoning Skills	2-0-2	3	6	CO 2	Analyze issues and arguments in the process of critical reasoning and apply grammar rules to correct sentences.											1		New Course is Added
					7	CO 3	Apply the Concepts of basic Algebra and their importance while solving the problems											1		
					8	CO 4	Apply the short-cut methods on the concepts of different models in Calendars, Clocks, Blood relations and various types of arrangements.										1			
					9	CO 1	Understand the importance of Environmental education and conservation of natural resources.										1			
					10	CO 2	Understand the importance of ecosystems and biodiversity.										1	2		
3	11-BS-105	Ecology & Environment	2-0-0	2																Modified from the previous version

  
 Dr. G. Krishna Nagar  
 Associate Prof.

  
 Computer Science & Engineering  
 Department Chairperson  
 Koneru Lakshmi Narayana Education Foundation

Sno	Course Code	Course Title	Credits L-T-P	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO	PSO Type	Rationale		
						a	b	c	d	e	f	g	h	i	j	k
4	13-JHS-104 Human Values	Linear Algebra and multivariate calculus	2-0-0 2	CO 3 CO1 CO2 CO3 CO 1 CO 2 CO 3 CO 4 CO 1 CO 2 CO 3 CO 4 CO 1 CO 2 CO 3 CO 4	Apply the environmental science knowledge on solid waste management, disaster management and E&A process.									1	2	Previous syllabus
					Understand and identify the basic aspiration of human beings									1		
					Envisage the roadmap to fulfill the basic aspiration of human beings.									2		This course helps to interact with other human resources humanly
					Analyze the profession and his role in this existence.									2		
					Determine extreme values for functions of several variables									2		
					Determine area, volume moment of inertia through multiple integrals in Cartesian or polar coordinates.									2		
					Apply the concepts of vector calculus to calculate the gradient, directional derivative, arc length, areas of surfaces and volume of solids in practical problems									2		
					Obtain analytical and numerical solutions of Heat and wave equations									2		
					Formulate physical laws and relations mathematically in the form of first order differential equations and identify a method for solving and interpreting the results.									1		
					Formulate physical laws and relations mathematically in the form of second/higher order differential equations and identify a method for solving and interpreting the results.									2		
5	13-BS -101	Differential Equations	3-0-2 4	CO 1 CO 2 CO 3 CO 4 CO 1 CO 2 CO 3 CO 4	Provide solutions for Fourier series of periodic/non-periodic phenomena in models involving differential equations.									1		
					Apply numeric solution methods for a system of linear algebraic equations and application oriented matrix eigenvalue problems.									1		
					Apply numeric solution methods for a system of linear algebraic equations and application oriented matrix eigenvalue problems.									1		
					Provide solutions for Fourier series of periodic/non-periodic phenomena in models involving differential equations.									1		
					Apply numeric solution methods for a system of linear algebraic equations and application oriented matrix eigenvalue problems.									1		
6	13-BS -102	Differential Equations	3-1-0 4	CO 3 CO 4	Provide solutions for Fourier series of periodic/non-periodic phenomena in models involving differential equations.									1		
					Provide solutions for Fourier series of periodic/non-periodic phenomena in models involving differential equations.									1		

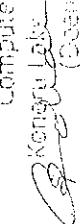
  
 Dr. B. Srinivasulu  
 Professor & Head  
 Department of Mathematics  
 Andhra University  
 Visakhapatnam  
 Andhra Pradesh  
 India  
 Pin: 530 003

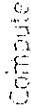
  
 Dr. Greenfield  
 Professor & Head  
 Department of Mathematics  
 Andhra University  
 Visakhapatnam  
 Andhra Pradesh  
 India  
 Pin: 530 003

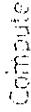
  
 Dr. K. Venkateswara Reddy  
 Professor & Head  
 Department of Mathematics  
 Andhra University  
 Visakhapatnam  
 Andhra Pradesh  
 India  
 Pin: 530 003

Sno	Course Code	Course Title	L.T.P	Credits	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO PSO Type	Rationale	
							a	b	c	d	e	f	g	h	
7	13-BS-103	Engineering Physics	3-0-2	4	23	CO-5	Verify the solution of problems through MATLAB.							1	
					24	CO 1	Understands structure of crystalline solids, kinds of crystal imperfections and appreciates structure-property relationship in crystals.	1						1	
					25	CO 2	Understands magnetic properties of materials and identifies their role in classification soft & hard magnetic materials having specific engineering applications.							1	Modified from the previous syllabus
					26	CO 3	Understands thermal and mechanical properties of materials, heat treatment methods for changing the microstructure of materials and responses of materials subjected to load.	1						1	This course helps to use principles of physics in computer science applications
					27	CO 4	Understands the role of electronic energy band structures of solids in governing various electrical and optical properties of materials.							1	
					28	CO 1	Describe some important design considerations in choosing a battery for a specific application.	1						1	
					29	CO 2	Predict potential complications from combining various chemicals or metals in an engineering setting.		1					1	
					30	CO 3	Examine water quality and select appropriate purification technique for intended problem.		1					1	Modified from the previous syllabus
					31	CO 4	Explain the role of chemical kinetics in the formation and destruction of ozone in the atmosphere and predict the connection between molecular behavior and observable physical properties.	1						1	
					32	CO-5	An ability to analyze & generate experimental skills.	1						1	
8	11-BS-104	Engineering Chemistry	3-0-2	4		CO 1	Apply the concept of sets, relations, functions, discrete structures, Sum rule and product rule,							2	D. G. Krishna Mohan
						CO 2									Dr. A. S. R. Rao

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale	
								a	b	c	d	e	f	g	h		
9	13-BS-206	Discrete Mathematics	3-0-0	3	34	CO 2	Apply Count discrete event occurrences; Apply Propositional logic and First order logic to solve Problems									Modified from the previous syllabus	This course helps to use mathematics for computer science applications
							Apply Advanced Counting Techniques,Formulate and solve recurrence relations;Apply Lattice theory										
					35	CO 3											
							Apply the concepts of graphs and trees										
					36	CO 4	Understand the concepts of crystallography and crystalline imperfections in order to determine crystal structures and to identify defects in crystals										
10	13-ES-103	Engineering Materials	3-0-0	3	37	CO 1										Modified from the previous syllabus	This course helps to use principles of materials in computer science applications
							Understand electrical and optical properties of materials and apply them to know various mechanisms involved in electrical, electronic, optical, optoelectronic devices.										
					38	CO 2											
							Understand mechanical and thermal properties of materials and apprehend their importance in identification of materials for specific engineering applications										
					39	CO 3											
41					40	CO 4	Understand magnetic properties of materials and apply them to know various mechanisms involved in magnetic memory devices and transformers.									Modified from the previous syllabus	This course helps to use principles of materials in computer science applications
							Understand various properties of materials and apply the knowledge to execute the related experiments to get hands on experience and also to develop some inter disciplinary projects.										
					41	CO 5											
							Understand and apply the fundamentals of measurement system, characteristics, and metrology using simulation and experimentation tools.										
					42	CO 1											

  
 Dr. K. Venkateswaran  
 (Chairman, Academic Council)  
 Green Fields Polytechnic

  
 Mr. S. R. Venkateswaran  
 (Secretary, Academic Council)

  
 Mr. A. N. S. Jayaram  
 (Secretary, Admin)

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course							Program Outcomes (POs)							Rationale
							a	b	C	d	e	f	g	h	i	j	k	l	m	n	
11	13-ES-102	Measurements	3-0-2	4	43	co-2	Understand various electrical & computer parameters, and apply different measuring techniques on various electrical parameters using simulation and experimentation tools.														This course helps in understanding basics of electrical engineering from the previous syllabus
					44	CO-3	Understand electronic & electro-physiological parameters, and apply measuring techniques on electronic parameters using simulation and experimentation tools.	2	2												
					45	CO-4	Understand and apply different measuring techniques on civil and mechanical parameters using simulation and experimentation tools.	2	2												
					46	CO-5	Apply the theoretical concepts to measure different parameters		2												2
					47	CO 1	Draft orthographic Projections, Isometric views, projection of planes, Manually and prepare Models in workshop by using drawings.														
12	11-ES-104	Engineering Graphics with CAD	0-0-4	2	48		Draft orthographic projections isometric views, projection of planes using AutoCAD. Draft projection of solids Manually and by using AutoCAD and prepare Models in workshop by using different workshop trades													Modified from the previous syllabus of engineering graphics in computer graphics skill development	
					49	CO 3	Draft Development of surfaces of solid and sections of solid Manually														
					50	CO 4	Practicing house wiring through Auto Cad														
					51	5	Develop 2D & 3D components using Auto Cad Software														
					52	CO 1	Hands on practice on wood working operation using hand tools														
13	13-ES-105	Workshop Practice	0-0-4	2	53	CO 2	Hands on practice on sheet metal working.														Modified from the previous syllabus helps in knowing fundamentals of workshop practice
					54	CO 3	Hands on practice on moulding by preparing a sand mould														
					55	CO 4	Hands on practice on Soldering by mounting electronic components														

Computer Aided Design  
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Sno	Course Code	Course Title	LTP	Credits	S NO	CO NO	Description of the Course Outcome						Program Outcomes (POs)						Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k	l		
14	13-ES-101	Problem Solving through Programming	3-0-2	4	56	CO 1	Illustrate how problems are solved using computers using operators and different number types, functions.									3			Modified from the previous syllabus	
					57	CO 2	Illustrate and use Control Flow Statements in C along with preprocessor directives and Storage classes.									3				
					58	CO 3	Interpret & Illustrate different formatted input and output along with arrays and pointers with arrays.									3				
					59	CO 4	Illustrate the use of Pointer Arithmetic along with arrays, Characters and Strings.									3				
							Apply the concept of forces, governing static equations and analyze planer system of forces. Apply different analytical methods on spatial system of forces and analyzing them									2			Modified from the previous syllabus	
							CO 1													
							60	Understanding the concepts of planar and non-planar system of parallel forces and analyzing them. estimate moment of inertia of lamina and material bodies								2				
							CO 2													
							61	Analyzing the rigid bodies under translation and rotation with and without considering forces.												
							CO 3													
15	13-ES-106	Engineering Mechanics	3-0-2	4			62	CO 4												Modified helps in understanding mechanics
							63	CO 5												
							64	CO 1												
							65	CO 2												
							66	CO 3												

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Sno	Course Code	Course Title	L-T-P	Cred S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO Type	Rationale	
							a	b	c	d	e	f	g		
16	13-ES-201	Thermodynamics	3-0-0	3	67	CO-3	Analyze various air standard cycles and their performance.	2						2	Course is Added helps in understanding thermodynamics and logic building
					68	CO-4	Evaluate the performance of fuels and combustion to various engines.		1					1	
						CO 5	Apply the theoretical concepts to conduct various experiments of thermodynamics practically and analyze the data.						1		
					69					2				2	
						70	CO 1	Understanding network theory	2					2	
17	13-IS-203	Network Theory	3-0-2	4		71	CO 2	Apply concepts of electrical networks	2					2	New Course is Added helps in understanding network theory and logic building
						72	CO 3	Analyse concepts of electrical networks	2					2	
						73	CO 4	Analyse concepts of electrical networks topologies	2					2	
								Demonstrate signals and their Spectra	2					2	
						74	CO 1							2	
18	13-ES-205	Signal Processing	3-0-2	4		75	CO 2	Analyze discrete time systems	2	2				2	New Course is Added helps in understanding signal analysis and logic building
						76	CO 3	Design filters to cater signal analysis needs						2	
						77	CO 4	Analyze non stationary signals in time						2	
						78	CO 5	Analyze non stationary signals in frequency domains						2	
								The student will be able to understand Basic Concepts of OOP, apply the concepts of classes and objects through Java Language.	2					2	
19	13 ES 202	Object Oriented Programming	3-0-2	4				CO1						3	New Course is Added Learning and Programming Language and helps in Skill Development
						79		The student will be able to apply the concepts of constructors, Overloading, parameter passing, access control, Inheritance.	2					3	
						80	CO2							3	
						81	CO3	The student will be able to apply Packages, Interfaces, Exception Handling.	2					3	
						82	CO4	The student will be able to apply I/O Streams and understand Basic Concepts of Multi - Threading	2					3	

*Dr. G. Krishna Mohan*  
Alternating CDD  
Computer Science & Engineering  
Guru Lakshman Jaya on Foundation  
Green

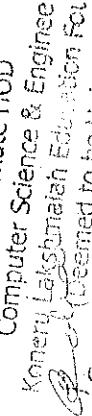
Sno	Course Code	Course Title	L-T-P Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO Type	Rationale			
							a	b	c	d	e	f	g	h	i	j	k	l
2013 ES 204	DATA STRUCTURES	DATA STRUCTURES	3-0-2	4	83	CO5	Students will be able to develop programs and projects in java.	2		2						3		
					84	CO1	apply measures of efficiency to algorithms and Compare various linear data structures like Stack ADT, Queue ADT, Linked lists.	2		2					3			
					85	CO2	analyze and compare linear data structures and analyze different searching and hashing techniques.	2		2					3			
					86	CO3	analyze and compare various non - linear data structures like Trees and Graphs.	2		2					3			
					87	CO4	analyze and compare various sorting algorithms, to select from a range of possible options, to provide justification for that selection, and to implement the algorithm in a particular context.	2		2					3			
					88	CO5	understand and execute lab experiments and develop a small project along with his/her team members.	2		2					3			
					89	CO1	illustrate the discussion with clients	1	1						2			
					90	CO2	develop paradigms for interaction	1		2					2			
					91	CO3	elucidate interface design rules	2		1					2			
					92	CO4	evaluate the interface principles	1							2			
2113 CS 202	Human computer interaction	Human computer interaction	3-0-2	4	93	CO5	demonstrate the usage of computer software to generate new layouts								2			
					94	CO1	Understand the basic concepts of operating system, OS structure and process concepts.	1		1					2			

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course Outcome				Program Outcomes (POs)						Rationale
							a	b	c	d	e	f	g	h	i	j	k
22 13 CS 203	Operating Systems	Operating Systems	3-0-2	4	95	CO2	Apply the concepts Process Scheduling algorithms and Process Synchronization Problems.									2	Basic management of computer system taught for skill development
							2									2	
					96	CO3	Solve the concept of the Deadlock, Memory Management and Virtual Memory Concepts.									2	New Course is Added
							2									2	
					97	CO4	Demonstrate file system interface, structure, file allocation methods, free space management and threads.									2	
							1									2	
					98	CO5	Create and develop a project along with his/her team members.									2	
							3									2	
					99	CO1	Explain the advantages of DBMS, its Characteristics, Concepts and ER-Model.									3	
							1									3	
					100	CO2	Demonstrate Relational Database using SQL detailing the role of Relational Algebra and Relational Calculus									3	
							2									3	
23 13 CS 204	Data Base Management System	Data Base Management System	3-0-2	4	101	CO3	Illustrate the normal forms of Relational DBMS detailing the process of normalization.									3	Modified from the previous syllabus
							101									3	
					102	CO4	Examine Transaction Management, Concurrency Control, File Organizations, Indexing, and Storing data									3	Coding and data retrieval used in application
							102									3	
							102									3	
					103	CO5	Create and Access Data Base for given Applications									3	
							2									3	
					104	CO1	Understand OSI and TCP/IP Models and basics of physical layer and their issues									2	
							1									2	
					105	CO2	Demonstrate Data Link layer issues and medium access control sub layers concepts									2	
							2									2	

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Sno	Course Code	Course Title	LTP	Cred its	S NO	CO NO	Description of the Course Outcome		Program Outcomes (POs)						PSO	PSO Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k
24	13 CS 205	Computer Networks	3-0-2	4	106	CO3	Analyze and implement the algorithms of network and transport layers and concerned services			2					2	New Course is Added	Basic principles of networking is taught for skill development
							Evaluate and execute the concepts of TCP, UDP and the application layer conceptions			3					2		
					107	CO4	Demonstrate the basic concepts of protocols and their design including client/server models, connection oriented and connection-less models										
										2					2		
					108	CO5	Describe and illustrate the concepts of HTML tags, and CSS through an application, DHTML, JavaScript functions			1					3		
							Describe Java fundamentals and inheritance property and polymorphism in java			1					3		
					109	CO6	Develop java programs using Encapsulation, property and Exception handling			1					3		
							Design java applications using multithreading, Applets, Design results processing application using JSP			1					3		
25	11 EM 301	Internet Programming	3-0-2	4	110	CO7	Design java applications using multithreading, Applets, Design results processing application using JSP			1					3		
										2					3		
					111	CO8	Design java programs in computer lab			1					3		
							Illustrate different phases involved in the software development			2					3		
					112	CO9	Explain the concepts of system modeling			1					3		
							Design the architecture III			2					3		
					113	CO10	Demonstrate the testing strategies			1					3		
							Examine the space and time complexities of basic algorithms			1					2		
26	13 cs 301	Software Engineering	3-0-2	4	114	CO11	Principles of software development taught for Skill Development										
							Explain the concepts of system modeling			2					3		
					115	CO12	Design the architecture III			1					3		
							Demonstrate the testing strategies			2					3		
					116	CO13	Demonstrate the testing strategies			1					3		
							Examine the space and time complexities of basic algorithms			1					3		
					117	CO14	Principles of software development taught for Skill Development										

  
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Sno	Course Code	Course Title	L-T-P	Cred S	CO NO	Description of the Course Outcome	Program Outcomes [POs]							PSO	PSO Type	Rationale		
							a	b	c	d	e	f	g	h	i	j	k	l
27	13 cs 302	Design and Analysis of Algorithms	3-0-2	4	119	CO2 Dynamic programming methodology for solving optimization problems								2			New Course is Added	
					120	CO3 Apply back tracking and branch and bound methodology for searching same state space trees								2				
					121	CO4 identify the purpose of NP-hard, NP-complete hard graph problems and illustrate PRAM algorithms	1							2				
					122	CO1 Understand various Number systems Codes and their conversion procedures and Complements of numbers used in Digital Systems	1							2				
					123	CO2 Apply Boolean identities for simplifying Boolean Expressions, Combinational and Sequential Circuits.								2				
					124	CO3 Understand the functionality and design the CPU functional units - control unit, registers, the arithmetic and logic unit, the instruction execution unit, and the interconnections among these components.								2				
					125	CO4 Understand, analyze and design main, cache and virtual memory organizations.								2				
					126	CO5 Demonstrate the basic concepts of Digital logic in the Laboratory								2				
					127	CO1 Illustrate and examine conventional cryptographic procedures	1							2				
					128	CO2 Illustrate and examine modern cryptographic and hash algorithms		1		2				2				
					129	CO3 demonstrate and study MAC and digital signature algorithms		1		2				2				
29	13 cs 303	Information Assurance and Security																

  
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Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO Type	Rationale			
								a	b	c	d	e	f	g	h	i	j	k	l
30 13 CS 304	Artificial Intelligence	3-0-2	4		130	CO4	demonstrate and study key management distributions	1	2	2						2			
							Students will able to apply PROLOG programming for the AI concepts		2							3			
							Students will be able to relate methods for encoding knowledge In computer systems									3			
							Students will be able to Interpret the Problems and search related to AI	1								3			
							Students will be able to infer Slot-and-filler structures and architecture of neural networks as connectionist models									3			
							CO3	1								3			
							CO4									3			
							133									3			
							134									3			
							135									3			
30 13 CS 304	Artificial Intelligence	3-0-2	4		CO5	CO5	Demonstrate the basic concepts of artificial intelligence in the Laboratory									3			
							136									2			
							137									2			

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Sno	Course Code	Course Title	L-R-P	Credits	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale	
							a	b	c	d	e	f	g	h	i	
31	13 CS 305	Distributed Computing	3-0-2	4	CO3	Utilize DSM model for inter process communication showing relationship between various types of shared objects and identify clock synchronization problem applying tight bounds to synchronize clocks.										New Course is Added
										2				3		
					CO4	Examine the process of realizing reliable fault tolerance in distributed system reflecting the specific type of faulty behavior and illustrate simulation that makes Byzantine failures appear to be crash failures										Based on previous year distributed software over networking environment is taught for skill development
										2				3		
					CO5	Experiment with laboratory programs and develop a small project along with his/her team members.					2					Based on previous year distributed software over networking environment is taught for skill development
										2				3		
					CO1	The Student will be able to define & represent finite Automata and its variations & construct Finite Automata for accepting different kinds of regular languages and their inter conversions										Based on previous year distributed software over networking environment is taught for skill development
										3	3			1		
					CO2	The student will be able to define regular sets, its properties and its rationale with pumping lemma of Regular Sets & Construct Finite Automata from regular languages and vice-versa										Based on previous year distributed software over networking environment is taught for skill development
										3	3			3		
					142											Based on previous year distributed software over networking environment is taught for skill development


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Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO Type	Rationale	
								a	b	c	d	e	f	g	h	i	
32	13 CS 306	Automata and Formal Languages	3-0-2	4	143	CO3	The Student will be able to describe grammars, its representation and the foundation for parsing mechanism of language semantics and constructing context free grammars for different languages									New Course is Added	system design concepts are taught for skill development
					144	CO4	The Student will be able to define & represent Push down Automata and its variations and Construct a PDA for real world problems and its justification with Grammars		3	3							
					145	CO5	The Student will be able to define Turing Machine and its variations & construct Turing Machine for unrestricted languages		3	3							
					146	CO1	Understand the overall compiler architecture and design of Lexical Analyzer		2							2	
					147	CO2	Construct the parser using the yacc tool		3	3						2	
					148	CO3	Analyze Syntax directed definition and its translations schemes, intermediate code		2	2						2	useful for the skill development, good to design new languages
					149	CO4	Apply the code optimization and generation techniques in the development of a compiler.		2	2						2	new course introduced
					150	CO5	Design of simple compiler using LEX and YACC tools									3	
					151	CO1	Understand the History and need of Simulation and Modeling with Examples.		1		1					2	
					152	CO2	Analyze Various general principles, Statistical and Queueing Models		2		2					2	

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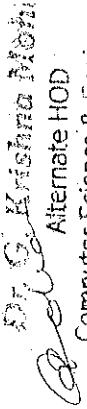
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VADDESWARAM-522 133

Sno	Course Code	Course Title	L-T-P	Credits	CO NO	Description of the Course Outcome	Program Outcomes [POs]							Type	Rationale	
							a	b	c	d	e	f	g	h	i	
34	13 CS 402	Simulation and modeling	3-0-2	4	153	Analyze Simulation of Input Modeling and Verification and Validation of the Models	2							2		new course introduced
						Apply the Simulation on Manufacturing and Material Handling Systems, Computer System and Computer Networks.			2							
						CO4				2						
						154										
						155	CO5	Develop the basic concepts of Simulation and Modeling	2			2				
35	13 CS 331	Data Warehousing and Mining	3-0-0	3	156	Student should be able to Understand the necessity of data preprocessing in construction of data warehouse.		1								New Course is Added
						CO1										
						157	CO2	Student should be able to Analyze multidimensional data using OLAP tools to facilitate effective data mining.	2	2		5				
						158	CO3	Student should be able to Apply the concepts of data analysis and clustering to postulate accurate classification model for a given problem.	2	2						
						159	CO4	Student should be able to Recommend a methodology for mining complex data types and detection of anomaly for the given Application.	3	3						
36	13 CS 332	Advanced Database Management Systems	3-0-0	3	160	Understand the fundamentals of query optimization and database recovery protocols.	1									modern databases are taught for employability
						161	CO1	Analyze emerging database technologies and distributed databases.	2							
						162	CO2	Discriminate object oriented and relational database systems.	2							
							CO3									

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Sno	Course Ccde	Course Title	L-T-P	Cred its	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO	PSO Type	Rationale		
							a	b	c	d	e	f	g	h	i		
37 11 CS 432	Big Data Analytics	3-0-0	3	3	163	CC04	Analyze multimedia databases.	2							3		
					164	CO01	Explain the big data that is emerging from multiple big data sources in terms of velocity, variety and veracity.								3	Latest concepts big data and its analysis is taught for employability and skill development  new course introduced	
					165	CO02	Illustrate the technologies, processes and methods for analyzing big data.								2		
					166	CO03	Demonstrate the key principles of data analysis using the R tool								3		
					167	CO04	Examine advanced Graphs, Regression, Forecasting and Time Series models using R analytical platform.								3		
					168	CO01	Understand the fundamentals of database security and security risks related to user administration								2		
					169	CO02	Apply password policies and security models								2		
					170	CO03	Analyze virtual private database using views in SQL Server 2000 and Oracle 10g and understand database auditing, auditing models								2	Helps for employability in securing the database  New Course is Added	
					171	CO04	Apply auditing techniques on the real world problems using Oracle 10g and SQL server 2000								2		
					172	CO01	Summarize distributed databases								3		
38 13 CS 333	Database Security	3-0-0	3	3	173	CO02	Analyze parallel database for searching, sorting, join and group by join.								3		

  
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Sno	Course Code	Course Title	L-T-P Credits	CO S NO	Description of the Course Outcome	Program Outcomes (POs)								PSO Type	Rationale	
						2	6	C	d	e	f	g	h	i		
39	13 CS 431	Distributed Databases	3-0-0	3	CO3 CO4 CO1 CO2 CO3 CO4	Apply parallel database for indexing; collection of join query, scheduling, optimizing, transactions in Distributed, Grid Databases and Grid Concurrency Control.									new course introduced	Enhance the skills in study towards distributed databases and enhance the option towards employability
						174										
						175										
						176										
						177										
						178										
						179										
						180										
						181										
						182										
41	13 CS 335	NETWORK PROGRAMMING	3-0-0	3	CO3										New Course is Added	Helps towards employability as networking experts

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course				Program Outcomes (POs)				PSO Type	Rationale	
							a	b	c	d	e	f	g	h	i	j	
42	13 CS 336	Routing Algorithms	3-0-0	3	183	CO4	Student will be able to construct multiple threads that communicate with each other using Sun RPC	1			1			2	3		
						CO1	Understand the need of Routing Algorithms, framework and principles of Network Flow Modelling	1						3			
						184	Analyze the routing algorithms with its working and comparison.										
						CO2	Understand the routing architectures and quality of service in routing.			2					3		
						185	CO3										
						186	CC44	Analyze the working structure of VOIP Routing			2				3		
						187	CO1	Understand the basics of light signals and different types of optical communication link methodologies			1			2			
						188	CO2	Understand the concepts of optical fibers and dispersion			1				2		
						189	CO3										
						190		Analyze the concepts of optical transmission and detectors, electro optic modulation and optical amplifier			2				2		
43	13 CS 433	High speed Optical Communication Networks	3-0-0	3	191	CO4	Analyze the concept of basic networks				2				2		
						192	CO1	The course will provide knowledge of information security technology and methods for communication systems that provide services for mobile users by wireless access networks.						2			

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Sno	Course Code	Course Title	L-T-P	Cred its	CO NO	CO NO Outcome	Program Outcomes (POs)										Type	Rationale	
							a	b	c	d	e	f	g	h	i	j			
44	13 CS 434	Wireless Communications and Networking	3-0-0	3	193	CO2	Knowledge and understanding of security mechanisms and protocols in wireless communication systems, such as the topical technologies of WLAN IEEE 802.11, WAN 802.16, GSM/UMTS/LTE, Ad-hoc and sensor networks.									2	New course introduced	Helps towards employability as networking experts	
45	13 CS 337	Object Oriented Analysis and Design	3-0-0	3	194	CO3	Knowledge about some of the models, design principles, mechanisms and solutions used in wireless network security to obtain authentication and key transport protocols.									2			
46	13 CS 338	Requirement Engineering	3-0-0	3	195	CO4	Students will gain an understanding of wireless networking, protocols, and standards, and security issues									2			
					196	CO1	Understanding the concepts of UML (Unified Modeling Language) and UP (Unified Processing)									1	3	New Course is Added	Helps towards employability as Software Engineering experts
					197	CO2	Analyze the requirements using UML									2	3		
					198	CO3	Create class and objects using UML									3	3		
					199	CO4	Design and implement the software using UML									3	3		
					200	CO1	Identify stakeholders and their influence on the system requirements.									2			
					201	CO2	Identify and classify non-functional requirements, influences and constraints.									1			
					202	CO3	Validate requirements and Document and trace requirements using computer-based tools.									1	2	New Course is Added	Helps towards employability as Software Engineering experts

Sno	Course Code	Course Title	L.T.P	Credits	S No	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO Type	Rationale	
								a	b	c	d	e	f	g	h	i	
47	13 CS 435	Software Reliability	3-0-0	3	203	CO4	Infer Practice the different roles in the requirement engineering process, by working in groups analysis	1								2	Helps towards employability as Software Engineering experts new course introduced
							Explain software Reliability measures viz., mean time to failure, Failure Rate Function,	1								2	
					204	CO1	Illustrate software verification, validation and their relation to software reliability	1								2	
							Demonstrate estimation of reliability using failure data of a software product and software cost model based on software reliability	1							2		
					205	CO3	CO4	Examine a suitable reliability model for the product								2	
							Ability to define software systems by using various testing principles followed by test processes by inferring test generation methods and FSM models.	1							2		
					207	CO1	CO4								2		
															2		
48	13 CS 339	Software Testing & Quality Assurance	3-0-0	3	208	CO2	Make test adequacy assessment with the help of various source tools and application of those techniques in commercial environment.	2								2	Helps towards employability as Software Engineering experts New Course is Added
																2	
					209	CO 3	Analyze and prepare quality management by considering governmental standards, pareto principles and up-front quality technique.	2								2	

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Sno	Course Code	Course Title	L-T-P	Cred its	SNO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	Type	Rationale					
								a	b	c	d	e	f	g	h	i	j	k	l	m		
49 13-CS-430	Software Project Management	Software Project Management	3-0-0	3	211	CO 4	Relate the concepts of software safety and its relation to software quality assurance for the development of small projects.															
							Ability of the students to Develop project plans for different types projects	1														
							Ability to estimate time, cost, effort, resource requirements and the quality	CO 2													Helps towards employability as Software Engineering experts	
							Ability to undertake risk management for a given project	CO 3													New course introduce d	
							Ability to handle different tools using which project management is undertaken	CO 4														
							Students will be able to Define the concept of Secure Systems Design, Security Goals , Secure Design Principles.	CO1														
							Students will be able to show the Client-State Manipulation with SQL Injection for Password Security and Cross-Domain Security in Web Applications	CO2														
							Students will be able to show the Client-State Manipulation with SQL Injection for Password Security and Cross-Domain Security in Web Applications	CO3														
							Students will be able to Find Static Analysis as Part of the Code Review Process and Buffer Overflow	CO4														
							Students will be able to List the process of Errors and Exceptions in Web Applications, XML and Web Services with the help of Privacy And Secrets Privileged Programs	CO4														
50 13 CS 340	SECURE PROGRAMMING	SECURE PROGRAMMING	3-0-0	3	219																	

  
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Sno	Course Code	Course Title	L-T-P	Credits	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO	PSO	Type	Rationale			
							a	b	c	d	e	f	g	h	i	j	k	l	m
51	13 CS 341	CRYPTANALYSIS	3-0-0	3	CO1	Understand the classic ciphers and world war II ciphers	1									3	New course introduce d from previous syllabus		
					CO2	Understand the Stream Ciphers and Block Ciphers.		2								3	Helps towards employability as Security and Forensics experts		
					CO3	Illustrate and Examine Hash Functions.			2							3			
					CO4	Describe the Public Key System and analyze the Attacks on Public Key System				2						3			
					2223														
					2224														
					2225	Understand the Torsion Points, Elliptic Curve Over Finite Fields		1		1						2	Helps towards employability as Security and Forensics experts		
					2226	Understand the Discrete Logarithm Problem, Elliptic Curve Cryptography			1	1						2			
52	13 CS 342	Elliptic curve Cryptography	3-0-0	3	CO1	Understand the Applications, Divisors, Hyper Elliptic Curves.			1	1						2			
					2227														
					2228														
					2229														

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Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course										Program Outcomes (POs)										Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	PSO	PSO				
53	13 CS 437	Cyber Security	3-0-0	3			Categorize Attacking Application Logic, Attacking Users: Cross-Site Scripting, Attacking Users: Other Techniques, Automating Customized Attacks, Exploiting Information Disclosure.																		introduce d	Security and Forensics experts		
							CO3	2																				
							CO4		Inspect Attacking Native Compiled Applications, Attacking Application Architecture, Attacking the Application Server, Finding Vulnerabilities in Source Code.																			
54	13 CS 438	Trust Worthy Computing	3-0-0	3			CO1		Students are able to understand importance of system reliability using common statistical distributions and the importance of reliability models.																New course introduce d	Helps towards employability as Security and Forensics experts		
							CO2		Students are able to analyze security risk by using quantitative models and stopping rules in software testing.																			
							CO3		Students are able to analyze availability modeling and investigate the reliability in simple and complex embedded systems. Introduction to Microsoft TWC.																			
							CO4		Students are able to understand applications of aspect-oriented programming in trustworthy computing.																			

Sno	Course Code	Course Title	L.T.P	Credits	S NO	CO NO	Description of the Course				Program Outcomes (POs)				Type	Rationale					
							a	b	c	d	e	f	g	h	i	j	k	l	m		
55 13 CS 343	Advanced Computer Architecture	Student will be able to Understand the Overview of von Neumann architecture and Pipelining.	236	3	CO1	1										2				Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies	
			237	3	CO2	1										2	New course introduced				
			238	3	CO3	1										2					
			239	3	CO4	1										2					
		Understand the performance improvements of uni-processor systems through pipelining, classify different parallel processing systems.			CO1	1										2					
					CO2	2										2	New course introduced				
					CO3	1										2					
					CO4	2										2					
56 13 CS 344	Parallel Computing	Differentiate shared memory and distributed memory systems, design parallel programs through shared memory programming API's	241	3	CO1	1										2					Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies
			242	3	CO2	2										2					
			243	3	CO3	1										2					
			244	3	CO4	2										2					
			245	3	CO1	1										2					
			246	3	CO2	1										2					
					CO3	2										2					
					CO4	2										2					
57 11 CS 435	Cloud Computing	Analyze the parallel programming concepts on FRAM computing model.	247	3	CO1	1										2					
			248	3	CO2	1										2					
					CO3	2										2					
					CO4	3										2					

Dr. G. Krishna M  
Alternate HOD

Computer Science & Engg  
Deemed to be under  
Green Fields, VADODARA  
Gandhi Nagar, Pimpri Chinchwad

Sno	Course Code	Course Title	L-T-P	Cred S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)						PSO Type	Rationale	
							a	b	c	d	e	f	g		
58	13 CS 343	Grid Computing	3-0-0	3	249	CO2	Apply the concepts of parallel programming using CORBA						2	2	New course introduce d
					250	CO3	Understand and analyze the concepts of cluster computing and its deployment	2	2				2	2	Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies
					251	CO4	Understand and integrate the resources and services in Metacomputing		2				2	2	
					252	CO1	Apply parallel programming algorithms						3	3	Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies
59	13 CS 446	High Performance Computing	3-0-0	3	253	CO2	Understand and apply the analytical modelling of parallel programs						3	3	New course introduce d
					254	CO3	Apply and analyze the GPU programming						3	3	Helps towards employability for expertized knowledge in Multi core, Grid and Cloud Technologies
					255	CO4	Apply parallel programming to heterogeneous computing						3	3	
					256	CO1	Students are able to understand two-dimensional Computer Graphics	1					3	3	Helps towards employability for expertized knowledge in Graphics and Visualization
60	13 CS 346	2D/3D Graphics	3-0-0	3	257	CO2	Students are able to solve mathematical methods for three dimensional computer graphics	2	2				3	3	New Course is Added
					258	CO3	Students are able to compare and contrast realistic rendering						2	2	
					259	CO4	Students are able to explain geometric modeling	1					3	3	
					260	CO1	Describe the uses of Digital Image Processing and its Applications, Image Acquisition and Image Enhancement	1					3	3	
61	13 CS 347	Digital Image Process	3-0-0	3	261	CO2	Analyze image enhancement algorithms such as histogram modification, contrast manipulation, edge detection and restoration	1	1				3	3	Helps towards employability for expertized knowledge in Graphics and Visualization
					262	CO1							3	3	Helps towards employability for expertized knowledge in Graphics and Visualization

Sno	Course Code	Course Title	L-T-P	Cred Its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	Type	Rationale	
								a	b	c	d	e	f	g	h	i		
62	13 CS 348	Animation	3-0-0	3	262	CO3	Inspect how Wavelet, Multi-resolution, Compression and Morphological Image Processing are realized		1	1						3	d	Graphics and Visualization
							Illustrate Image Segmentation, Representation and Description and Object Recognition process								3			
					263	CO4	Understand the basics and technical background of animation.								3	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							Analyze the techniques used for Motion capturing and types of Animations								2			
					264	CO1	Understand the basics and technical background of animation.								3	d	New course introduce	
							CO2								2			
					265	CO3	Understand the concepts of fluids and image modeling								1	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							Understand the various types of animation.								2			
					266	CO4	Understand the video formats and usage of video compression techniques.								1	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							CO1								1			
					267	CO2	Understand the video formats and usage of video compression techniques.								1	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							CO3								1			
63	13 CS 441	Video and Audio Streaming	3-0-0	3	268	CO1	Understand the video formats and usage of video compression techniques.								3	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							CO2								2			
					269	CO3	Analyze the audio compression techniques and introduction to streaming media								2	d	New course introduce	
							Understand and Analyze the concepts of audio and video encoding and preprocessing							1				
					270	CO4	Apply stream serving and live various files								2	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							CO1								2			
					271	CO2	Understand the framework and standards for multimedia communication								2	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							CO3								2			
64	13 CS 442	Multimedia Technologies	3-0-0	3	272	CO1	Analyze the application layer services for multimedia technologies								2	d	New course introduce	
							CO2								2			
					273	CO3	Understand the middleware layer streaming for media coding								1	d	Helps towards employability for expertized knowledge Graphics and Visualization	
							CO4								2			

Sno	Course Code	Course Title	L-T-P Cred Sits	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO Type	Rationale	
						a	b	c	d	e	f	g	h	i	
65	13 CS 349	Soft Computing	3-0-0	3	Apply and analyze the Network layer functionalities for multimedia technology	275	CO4							2	
					Explain soft computing differentiating hard and soft computing and enumerate briefly overview of fuzzy systems , neural networks and genetic algorithms	276	CO1							2	Helps towards employability for expertized knowledge in Artificial Intelligence and Neuralnetworks and fuzzy Logic
					Demonstrate a fuzzy controller using fuzzy logic systems	277	CO2							2	New Course is Added
					Interpret pattern recognition using artificial neural network	278	CO3							2	
					Interpret Genetic algorithms and operations.	279	CO4							2	
					Understand and apply the differences among the styles of learning: supervised, reinforcement, unsupervised and parametric methods	280	CO1							2	
					Comprehend probabilistic methods for learning and for classification	281	CO2							2	New Course is Added
					Analyze the non parametric methods and decision trees to take the proper decision making.	282	CO3							2	Helps towards employability for expertized knowledge in Artificial Intelligence and Neuralnetworks and fuzzy Logic
					Understand rule based knowledge and Kernel machines to reduce the cost of various statistical methods , Bayesian Estimation, HMM models	283	CO4							2	
					Understand the concept of Essential Information Theory , Linguistic Essentials and Statistical Inference n-gram models	284	CO1							3	
66	13 CS 350	Machine Learning	3-0-0	3											

  
 Dr. G. Krishnamoorthy  
 Head, Computer Science & Engineering  
 Department, Government College of Engineering & Technology,  
 Gurukulam, Vellore - 632014, Tamil Nadu  
 India  
 Date: 20/08/2021

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course Outcome				Program Outcomes (POs)				PSO	PSO	Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k	l
67	13 CS 351	Natural Language Processing	3-0-0	3	285	CO2	Analyze Word Sense Disambiguation ,HMM and CFG	2					2			3	New Course is Added	Helps towards employability for expertized knowledge in Artificial Intelligence and Neuralnetworks and fuzzy Logic
					286	CO3	Illustrate Text and Sentence Alignment, Clustering in detail.	2					2			3		
					287	CO4	Explain Information Retrieval and Text Categorization , Perceptron in detail.	2					2			3		
					288	CO1	Students will be able to compare and contrast different types of Agents	2					2			2		
					289	CO2	Students will be able to illustrate how agents interact with each other to perform tasks delegated to them	2					2			2		
					290	CO3	Students will be able to choose different methodologies for designing and developing an Agent	3					3			2		
					291	CO4	Students will be able to explain the various applications of Agents	2					2			2		
					292	CO1	Understand Image representation and modeling	1					1			2		
					293	CO2	Apply Image transformation methods						2			2		
					294	CO3	Interpret image processing algorithms	1					1			2		
					295	CO4	Understand face detection and recognition algorithms						1			2		
							Understand the fundamentals of database management systems including data models, database architectures, and database manipulations and be able to model ER-diagrams.											
69	13 CS 444	Computer Vision	3-0-0	3		CO1												2

*Dr. G. Krishna Mohan*  
Alternate HOD  
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Sno	Course Code	Course Title	L-T-P Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale	
							a	b	c	d	e	f	g	h		
70	13 OE 429	Fundamentals of Information Technology	3-0-0	3	CO2 CO3	Understand the theories and techniques in developing database applications and be able to write queries, functions and procedures with help of SQL									modified from previous syllabus	concepts of data engineering is taught for employability
						Understand the different normal forms and transaction issues and be familiar with managing database systems, new developments and trends in databases.										
71	12 OE 445	Fundamentals of DBMS	3-0-0	3	CO1 CO2 CO3	Understand the architectural design of a computer and various basic concepts of operating systems and programming fundamentals									modified from previous syllabus	overall picture of IT is taught for employability
						Analyze various software development methodologies and gain capability to design databases.										
						Designing various model diagrams using Unified modelling language and understand basic commands that come across in querying a database.										
72	13 OE 430	SELF DEVELOPMENT	3-0-0	3	CO1 CO2 CO3	Understanding Values, Behavior and Attitudes									New course introduced	Builds Personality ethics and Values and helps in employment
						Understand and observe Observation, Introspection, Contemplation, Meditation and Concentration, Schools of Meditation										
						Understand Stress Management, Tips for Self-Management										
73	ME	Management Elective	3-0-0	3	CO	To enhance the Management Skills and to learn Professional Ethics									Retained from previous curricula	Understand Professional Training Mohan Chaitanya & Engineering Management Skills

Sno	Course Code	Course Title	L-T-P	Credits	S NO	CO NO	Description of the Course						Program Outcomes (POs)						Type	Rationale
							a	b	c	d	e	f	g	h	i	j	k	l		
74	13-AC-201	Energy & Society	Audit course	nil	306	CO 1	To Understand various aspects of Energy and its Technology					2					1	Retained from previous curriculum	Explore skills on the society	
75	13-AC-202	Employability Skills	Audit course	nil	307	CO 2	To acquire Knowledge on the energy audits and enhance for energy estimation.					2					2	Introduced new course	Enhances communication which future helps in achieving Employability	
76	13-AC-301	Advanced Employability Skills	Audit course	nil	308	CO 1	Analyze one's own strength as a speaker/ Communicator and use discretion while listening.					2					1	Introduced new course	Enhances Skills in communication which future helps in achieving Employability	
77	13-IP-401	Term Paper	Minor project	0-0-4	2	CO 2	Apply and analyze various concepts of writing strategies in professional communication skills like, reports, resume and minutes of the meeting.					2					1	Introduced new course	Enhances Skills to compete in competitive exams	
78	13-MP401				310	CO 1	Understand the organization of the passage and also analyze the tone, attitude and style of the author.					2					2	Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability	
79	15CS512	Computational Complexity		3-0-2	311	CO 2	Acquire knowledge of and apply people skills in various social organizational and corporate ambiances.					2					2	Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability	
					312	CO	To enhance Practical exposure towards solving complex engineering problems in order to achieve Research Exposure					2					2	Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability	
					313	CO	To enhance Practical exposure towards solving complex engineering problems in order to achieve Research and Industrial Exposure					2					2	Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability	
					314	CO 1	Advances in Computing deals with the theoretical foundations of information and computation and their implementation and application in computer systems					2					2	Retained from previous curriculum	Enhances Practical exposure towards solving complex engineering problems in order to achieve employability	
					315	CO 2	It has also provided contributors with a medium in which they can explore their subjects in greater depth and breadth					2					2	New Course is Added	Useful for the skill development, good for Mohan design new software HOD Computer Science & Engineering Department, Lakshmi Education Foundation (Proposed to be University) Patel, VADODARA, GUJARAT, India, District, Ahmedabad	

Sno	Course Code	Course Title	L-T-P Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	PSO Type	Rationale			
							a	b	c	d	e	f	g	h	i	j	k	l	m
				316	CO3	That continue to be of significant, lasting value in this rapidly expanding field.													
				317	CO4	Software Environments for Distributed systems and clouds: Parallel and Distributed Programming Models	2								2				
80	15CSS513	Machine Intelligence	3-0-2	4	CO1	Explain the differences among the styles of learning: supervised, reinforcement, unsupervised, inductive and deductive learning.													
				318	CO2	Comprehend probabilistic methods for learning	2												
				319	CO3	Understand Multivariate regression and Classification													
				320	CO4	Understand rule based knowledge and Analyze clustering	2												
				321	CO1	Evaluate mathematical expressions by using different types of operations on numbers.													
				322	CO1	Simplify expressions and solve equations & inequations.													
				323	CO2	Apply different types of arithmetic expressions to solve given problems.													
				324	CO3	Apply methods to find areas , volumes and use graphs to reduce non-linear to linear forms.													
				325	CO4														
81	15CS514	Optimization Techniques	3-0-2	4	CO1	Understand the functionality and design the CPU functional units - control unit, registers, the arithmetic and logic unit, the instruction execution unit, and the interconnections among these components.													
				326	CO2	Understand, analyze and design main, cache and virtual memory organizations.													
				327	CO3	Understand, analyze and design different types of I/O transfer techniques													
				328	CO4														
82	15CSS515	Device Management	3-0-2	4															

Sno	Course Code	Course Title	L T P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes [POs]							PSO	Type	Rationale
								a	b	c	d	e	f	g	h		
83	15CSS16	Formal Methods	3-0-2	4	329	CO4	Understand the design issues of RISC and CISC CPUs and the design issues of pipeline architectures									2	
						CO1	Analyzing the design issues involved in various constructs of programming languages, Design top-down and bottom-up parsers	2								2	
					330	CO2	Develop syntax directed translation schemes, Design and Implementation LR parser									2	New Course is Added
						CO3	Use formal grammars to specify the Syntax of Languages									2	Useful for the skill development, good to design new languages
						CO4	Analyzing the methods and tools to define syntax and semantics of a language									2	
					331	CO1	Examine the space and time complexities of basic algorithms									2	
						CO2	Demonstrate Greedy and Dynamic programming methodology for solving optimization problems	1								2	
						CO3	Apply back tracking and branch and bound methodology for searching same state space trees									2	New Course is Added
						CO4	Identify the purpose of NP-hard, NP-complete hard graph problems and illustrate PRAM algorithms									2	Fine tuning and design of algorithms for the requirement for skill development
84	13OE456	Algorithm Design and Analysis	3-0-2	4	335	CO1	Understand the basic concepts of operating system, OS structure and process concepts.									2	
						CO2	Apply the concepts Process Scheduling algorithms and Process Synchronization Problems.	2								2	New Basic management of
					336	CO1										2	Alternate HOD
						CO2										2	Dr. Krishna Mohan
					337	CO3										2	Vaidika M A Raja
					338	CO1										2	
					339	CO2										2	
					Principles	CO1										2	

Sno	Course Code	Course Title	L-T-P	Cred Sits	CO NO	Description of the Course Outcome	Program Outcomes (POs)							Type	Rationale									
							a	b	c	d	e	f	g	h	i	j	k	l	m					
85	13OE455	Operating Systems	3-0-2	4	340	Solve the concept of the Deadlock, Memory Management and Virtual Memory Concepts.				2										Course is Added	Computer System taught for skill development			
						CO4 Demonstrate file system interface, structure, file allocation methods, free space management and threads.				1														
					341	Understand the overall compiler architecture and design of Lexical Analyzer										2								
						342 CO1 Construct the parser using the Yacc tool					2						2							
					343 CO2 Analyze Syntax directed definition and its translations schemes, intermediate code					2						2								
86	13OE457	Theory of Computation	3-0-2	4	344	CO3 Apply the code optimization and generation techniques in the development of a compiler.					2						2							
						345 CO4 Understand Algorithms and sorting networks										2								
						346 CO1 Ability to design and analyze parallel algorithms		1	2		3													
						347 CO2 Apply graph and search algorithms on sorting networks			2		3													
						348 CO3 Understand arithmetic and randomized computations			1		3													
						349 CO4 Acquire the ability to identify potential sources of data and distinguish between quantitative and qualitative data			2	2	3													
						350 CO1 Learn to identify and describe a variety of analysis tools that will assist in processing data.				1						2								
						351 CO2 Demonstrate basic data analysis techniques and show how this analysis can contribute to a business' future growth				2					2									
						352 CO3																		
88	13OE459	Data Analytics	3-0-2	4																				

*[Signature]*  
Computer Science & Engineering  
Alternate HOD  
Mr. S. V. S. Rao  
Computer Science & Engineering

*[Signature]*  
Karnataka State Board of Secondary Education  
(State Level Board of Examination)  
Ganesh Puram, Bengaluru - 560022  
Karnataka, India

Sno	Course Code	Course Title	L-T-P	Cred its	S NO	CO NO	Description of the Course Outcome	Program Outcomes (POs)							PSO	PSO	Type	Rationale
								a	b	c	d	e	f	g	h	i	j	k
					353	CO4	Learn how to effectively communicate the results of your analysis.											
39	13PW401	Final year Project	0-0-18	9		CO	To enhance Practical exposure towards solving complex engineering problems in order to achieve Research and Industry Exposure		2									
90	13PS401	Practice School	0-0-18	9	354	CO	To enhance Practical exposure towards solving complex engineering problems in order to achieve Industrial Exposure											
					355													

*B. Balasubramanian*  
HOD-CSE

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## K L University

(Koneru Lakshmaiah Education Foundation)

Deemed to be University, Estd. u/s 3 of UGC Act, 1956

Accredited by NAAC as 'A' Grade University Approved by AICTE : ISO 9001-2008 Certified

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### Department of Computer Science and Engineering

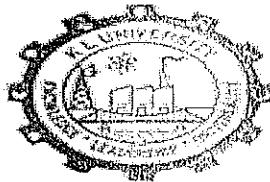
#### Alumni Feedback on Curriculum

Academic Year (2013-14) Sem 1

1. To increase (Inter Discipline) open electives from two to three to gain more fundamental knowledge in other department (or) general areas.
2. To recommend Term Paper as minor project and finally as major project to come up with publications to enhance more on Research and Publications.
3. To make Artificial Intelligence course as the core course.
4. To Introduce JAVA concepts in object oriented programming.

*[Signature]*  
HOD-CSE

PROFESSOR  
Department of Computer Engineering  
Sri Venkateswara University  
Tirupati, Guntur Distn



**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**MINUTES OF DEPARTMENT ACADEMIC COMMITTEE MEETING**

The Department Academic Committee Meeting was conducted in C408, Computer Science and Engineering, on 11<sup>th</sup> November 2013 at 1.00 PM.

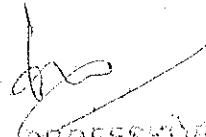
The following Agenda Items are discussed and the resolutions passed are marked against them:

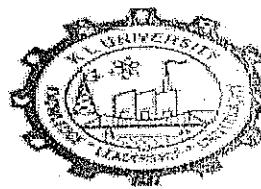
**Agenda:**

- To discuss feedback obtained from various stake holders.
- To discuss the syllabus and course structure of B.tech 2013 batch (Annexure-I).
- To discuss and formulate the guidelines for project based labs.

The following members were present:

1. Dr. V.Srikanth
2. Dr. V. CHANDRA PRAKASH.
3. Dr. T. V. Rao.
4. Prof. S. VENKATESWARLU.
5. Dr. K. SUBRAHMANYAM.
6. Dr. M. R. NARASING RAO.
7. Dr. D. RAJESWARA RAO.
8. Dr. M.S.R PRASAD.
9. Dr. K. V. V. SATYANARAYANA
10. Dr. V. RAMA KRISHNA
11. Dr. K. RAJA SEKHAR.
12. Mr. M. VISHNUVARDHAN.
13. Mr. K. V. D. KIRAN.
14. Naga Sabarinath (10100416)
15. V. Alakananda (10100242)
16. Himaja (10100325)

  
PROFESSOR  
Computer Science and Engineering  
KL UNIVERSITY  
KONERU LAKSHMANIAH DISTRICT



# K L University

u/s 3 of UGC Act, 1956  
Koneru Lakshmaiah Education Foundation

The following points were discussed and resolved:

- Up on discussing the feedback from DAC members, it is resolved to change the course OOP through C++ to JAVA in order incorporate core JAVA skills for student.
- Up on discussion regarding project based labs, In order to enhance practical knowledge in core courses, three Mini projects are removed from Y12 Batch and resolved to include Capstone Design Project to every core course(15 courses).

All programs for 2013-14 has been framed to be in relevance to APIIC, Human Resource Development Policy, Govt. of India, National Skill Development Corporation, Govt. of India, Confederation of Indian Industries, ABET, NBA norms, O\*NET and AICTE statutory norms. Thus, framed curricuhum has been developed through framing of Program Educational Objectives (PEO's) which are mapped to the university Vision and Mission, which are there by disseminated into Student Outcomes (SO's) which thereby have been developed into relevant Course Outcomes (CO's).

The resolutions are forwarded to BOS committee, for the approval.

HOD-CSE  
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VADDERSWARAM-522 502, Guntur District



## **K L University**

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Approved by A.I.C.T.E ± Accredited by N.B.A.± ISO 9001-2000 Certified

### **CONSOLIDATED REPORT ON FEEDBACK GIVEN BY ACADEMIC PEERS**

**2013-14**

Sno	Date	Feedback	Resource person name
1	25 Apr 2014	Introduce new M.Tech. program on cloud computing.	A.S.N.Chakravarthy Professor, Dept. of CSE, JNTUK.
2	25 Apr 2014	Suggestions on new M.Tech. CSE curriculum and approved M.Tech(CSE) structure.	P.S.Avadhani, Prof. & Vice principal, AU.

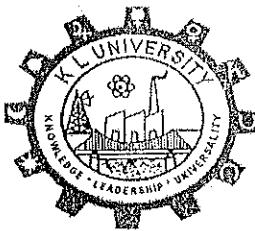
**Dr. V. SRIKANTH**

Head of the Department

Computer Science and Engineering

KL UNIVERSITY

VADDESWARAM-522 502, Guntur Dt.



**K L University**

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## CONSOLIDATED REPORT ON FEEDBACK GIVEN BY ACADEMIC PEERS

2013-14

	Excellent	Very Good	Good	Average	Total
Feed back(in %)	0	25	75	0	100

*Uth*  
Dr. V. SRIKANTH  
Head of the Department  
Computer Science and Engineering  
KL UNIVERSITY  
VADDESWARAM-522 502, Guntur Dt.

KL UNIVERSITY  
 DEPARTMENT OF CSE  
 Industry personnel feedback on the curriculum  
 SUMMARY REPORT - A.Y. 2013-14

S No	Date	Feedback	Industry person	Industry
1	14-06-2013	Informed the importance of Computer vision in IT industry and suggested to start a course in that	Mr. S. Siva Prasad	FactSet
2	03-07-2013	Give emphasis for Animation technologies like Maya	Mr. Ankit	CTS
3	20-12-2013	Informed the importance of Fundamentals of Information technology to all the Engineering students, He strongly recommended to start a course to non IT students for which the syllabi and material will be provided by Infosys	Mr. Pramod	Infosys
4	04-04-2014	Introduce video and audio streaming in game and graphics programming. It can be introduced as a separate course	Mr. P Ram	Wipro
5	25-04-2014	Described the cloud computing emphasis and recommended to start a new stream in M.Tech	Mr. A. Srinivasa Rao	Tech Mahindra



HOD-CSE

2013



**K L University**

(Koneru Lakshmaiah Education Foundation)

Estd. u/s 3 of UGC Act 1956

Green Fields, Vaddeswaram, (via) K.C. Works P.O. - 522 502, Guntur District, A.P.

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Constituent College-KLCE Accredited by NAAC with CGPA 3.76/4.00

Approved by A.I.C.T.E ± Accredited by N.B.A.± ISO 9001-2000 Certified

## CONSOLIDATED REPORT ON FEEDBACK GIVEN BY PARENTS

2013-14

SNo	Date	Feedback	Parent Name
1	2.11.2013	Counselling the students regularly is good	Mrs.M.Bhanu Rekha
2	2.11.2013	In Laboratory more no of faulty is available to clear the doubts my ward is happy	Mr.K.Soma Sekhara-varma
3	2.11.2013	Discipline is good	Mr.V.V.Koteshwra Rao
4	2.11.2013	Existing Standards of Curriculam is Good	Mrs.B.Vijaya
5	4.07.2014	My ward is feeling difficult of data structures to get pass marks. Requesting to reduce the burden of course	Mr.O.Kanaka Durga
6	5.11.2014	Please introduce java course instead of oops through C++	Mrs.M.Lavanya
7	4.07.2014	Library is Good	Mr.N.Rambabu
8	5.11.2014	Please see that the student get enough support from faculty when they are practicing in the class also	Mr.M.Subba Rao

Uth

HOD-CSE

Dr. M. Senthil Kumar

Head of the Department

Computer Science and Engineering

KL UNIVERSITY

VADDESWARAM-522 502, Guntur Di.



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Deemed to be University, Estd. u/s 3 of UGC Act, 1956

Accredited by NAAC as 'A' Grade University ~ Approved by AICTE ~ ISO 9001-2008 Certified

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### Department of Computer Science and Engineering

#### Alumni Feedback on Curriculum

Academic Year (2013-14) Sem 2

1. Give more emphasis on coding and practice which will give hand during placements.
2. New stream can be included in M.Tech stream explicitly covering Cloud computing domain.

HOD-CSE

PROFESSOR  
Computer Science and Engineering  
KL UNIVERSITY, Guntur  
Andhra Pradesh, India