



BOARD OF STUDIES MEETING – 2019-20
K.S.R.M COLLEGE OF ENGINEERING
AUTONOMOUS

Minutes of the Meeting

Date	28.12.2019	Day	Monday
Time	11:30 AM	Venue	Computer Lab in Main Block
Dept./SS	H&S	Convener	Dr. B.Rama Bhupal Reddy


Members Present:08				Members Absent: 00		
S.No	Name	Designation	Signature	S.No	Name	Designation
1.	Prof. G.Sankara Sekhar Raju	Prof., JNTU, Pulivendula.				
2.	Dr. Y.Bhavani Kumar	Prof., SVU, Tirupati.				
3.	Dr. D.Krishna Mohan Raju	Prof., Annamacharya, Tirupati.				
4.	Dr. B.Rama Bhupal Reddy	Prof., KSRMCE.	<i>B. Ramu</i>			
5.	Sri. Y. Satheesh Kumar Reddy	Assistant Prof., KSRMCE.	<i>Y. Satheesh</i>			
6.	Smt. G. Radha	Assistant Prof., KSRMCE.	<i>G. Radha</i>			
6.	Sri. G. Sreedhar	Assistant Prof., KSRMCE.	<i>G. Sreedhar</i>			
7.	Sri. B.Veera Sankar	Assistant Prof., KSRMCE.	<i>B. Veera</i>			
8.	Dr. V.Ramachandra Reddy	Assistant Prof., KSRMCE.	<i>Ramachandra</i>			

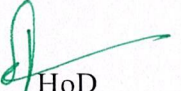
Dr. B.Rama Bhupal Reddy welcomed all the members to the meeting and presented the agenda of the meeting.

The resolutions are:

	To do item	Discussion	Resolution	Coordinator/in-charge
1.	Approval of UG I, II, III and IV Semester syllabus COs & POs for R18UG Regulation.	The chairman presented the syllabus and COs & POs designed by the faculty of Mathematics after taking the feedback from all stakeholders and by comparing with premier institute syllabus.	The committee members discussed UG I, II, III&IV semesters syllabus COs & POs and finalized as per the suggestions of the members. Suggested some text books and reference books for prescribed syllabus.	Prof. B.Rama Bhupal Reddy
2.	Approval of UG I & II Semesters Aptitude syllabus for R18UG Regulation.	The chairman presented the syllabus designed by the faculty of Mathematics after taking the feedback from all stakeholders and by comparing with premier institute syllabus	The committee members discussed UG I-semester common to CE, ME & EEE branches & II-semester common to ECE & CSE branches syllabus and finalized as per the suggestions of the members. Suggested some text books and reference books for prescribed syllabus.	Prof. B.Rama Bhupal Reddy

The Head of the Department have proposed the Vote of thanks and concluded the meeting.


Convenor


HoD
Dr. I. SREEVANI M.Sc.,Ph.D
Head of Humanities & Sciences
K.S.R.M College of Engineering
KADAPA 516 005

UG Programs in Civil Engineering (R18 UG)


Curriculum

3rd Semester

Subject Code	Subject Category	Subject Title	L	T	P	IM	EM	CR
1823301	BSC	Biology for Engineers	2	0	0	30	70	2
1821302	BSC	Numerical Methods, Probability & Statistics	2	1	0	30	70	3
1803303	ESC	Basic Mechanical Engineering	2	1	0	30	70	3
1801304	PCC	Engineering Mechanics	3	1	0	30	70	4
1801305	PCC	Surveying and Geomatics	2	1	0	30	70	3
1801306	PCC	Building Materials and Construction	2	1	0	30	70	3
1801307	PCC	Computer Aided Civil Engineering Drawing Lab	0	0	4	50	50	2
1801308	PCC	Surveying and Geomatics Lab	0	0	2	50	50	1
1801309	PCC	Civil Engineering Workshop	0	0	2	50	50	1
Total			13	5	8	330	570	22

4th Semester

Subject Code	Subject Category	Subject Title	L	T	P	IM	EM	CR
1825401	OEC 1	Managerial Economics & Financial Analysis	3	0	0	30	70	3
1824402	HSMC	Effective Technical Communication	2	1	0	30	70	3
1801403	PCC	Engineering Geology	2	0	0	30	70	2
1801404	PCC	Fluid Mechanics	3	1	0	30	70	4
1801405	PCC	Solid Mechanics – 1	3	1	0	30	70	4
1801406	PCC	Disaster Preparedness & Planning Management	2	0	0	30	70	2
18994M1	MC 1	Environmental Studies	2	0	0	30	0	0
1801407	PCC	Engineering Geology Lab	0	0	2	50	50	1
1801408	PCC	Fluid Mechanics Lab	0	0	3	50	50	1.5
1801409	PCC	Solid Mechanics Lab	0	0	3	50	50	1.5
Total			17	3	8	360	570	22


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Detailed Course Structure
Department of EEE

B. Tech – III Semester (Theory - 6, Lab - 3)

S. No.	Subject Code	SUBJECT	SC	L	T	P	IM	EM	CR
1	1823301	Biology for Engineers	BSC	2	0	0	30	70	2
2	1814302	Electronics Devices & Circuits	PCC	3	0	0	30	70	3
3	1802303	Electrical Circuit Analysis	PCC	3	1	0	30	70	4
4	1802304	Electromagnetic Fields	PCC	3	0	0	30	70	3
5	1802305	Electrical Machines - I	PCC	3	1	0	30	70	4
6	1802306	Power Systems - I	PCC	3	0	0	30	70	3
7	1802307	Electrical Circuit Analysis Lab	PCC	0	0	2	50	50	1
8	1814308	Electronics Devices & Circuits Lab	PCC	0	0	2	50	50	1
9	1824309	Soft Skills Lab	HSMC	0	0	2	50	50	1
Total				17	02	06	330	570	22

B. Tech – IV Semester (Theory - 6, Lab - 3)

S. No.	Subject Code	SUBJECT	SC	L	T	P	IM	EM	CR
1	1821401	Mathematics - III	BSC	3	0	0	30	70	3
2	1814402	Digital System Design	PCC	3	0	0	30	70	3
3	1802403	Electrical Measurements	PCC	3	0	0	30	70	3
4	1802404	Control Systems	PCC	3	0	0	30	70	3
5	1802405	Electrical Machines - II	PCC	3	0	0	30	70	3
6	1802406	Power Systems - II	PCC	3	0	0	30	70	3
7	1802407	Electrical Measurements Lab	PCC	0	0	2	50	50	1
8	1802408	Electrical Machines - I Lab	PCC	0	0	2	50	50	1
9	1805409	Python Programming Lab	ESC	0	0	4	50	50	2
10	18994M1	Environmental Science	MC	2	0	0	30	00	0
Total				20	00	08	360	570	22

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**UG Programs in Mechanical Engineering (R18 UG)
Curriculum**

Semester III [Second year]

S. N O	Course Code	Subject code	Course Title	Hours per week			IM	EM	Total contact hours	credits
				L	T	P				
1	BSC 301	1823301	Biology for Engineers	3	0	0	30	70	3	3
2	BSC	1821302	Numerical methods, probability and statics	2	0	0	30	70	2	2
3	ESC 301	1801303	Engineering Mechanics	3	0	0	30	70	3	3
4	PCC- ME	1803304	Manufacturing Process	3	0	0	30	70	3	3
5	PCC- ME	1803305	Strength of materials	3	0	0	30	70	3	3
6	PCC- ME	1803306	Material science and engineering	3	0	0	30	70	3	3
7	PCC- ME	1803307	Thermodynamics	3	0	0	30	70	3	3
8	PCC	1803308	Material science, Mechanics of solids Lab	0	0	3	50	50	3	1
9	PCC	1803309	Manufacturing technology Lab	0	0	3	50	50	3	1
									Total credits	22
									Total Hours	26


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Detailed Course Structure
Department of ECE

III Semester

S. No.	Subject Code	Subject	Category	L	T	P	IM	EM	Credits
1	1821301	Mathematics – III	BSC	3	1	0	30	70	4
2	1825307	Managerial Economics and Financial Analysis	HSMC	3	0	0	30	70	3
3	1804303	Electronic Devices and Circuits	EC	3	0	0	30	70	3
4	1804304	Digital System Design	EC	3	0	0	30	70	3
5	1804305	Signals And Systems	EC	3	0	0	30	70	3
6	1804306	Network Theory	EC	3	0	0	30	70	3
7	1805307	Python Programming	ESC	0	0	3	50	50	1.5
8	1804308	Electronic Devices and Circuits Lab	EC	0	0	3	50	50	1.5
9	18993M1	Environmental Science	MC	2	0	0	30		0
		Total:							22

IV Semester

S. No.	Subject Code	Subject	Category	L	T	P	IM	EM	Credits
1	1823401	Biology for Engineers	BSC	2	0	0	30	70	2
2	1804402	Probability Theory and Stochastic Processes	EC	3	0	0	30	70	3
3	1804403	Analog and Digital Circuits	EC	3	0	0	30	70	3
4	1804404	Control Systems	EC	3	0	0	30	70	3
5	1804405	Linear IC Applications	EC	3	0	0	30	70	3
6	1804406	Electromagnetic Theory and Transmission lines	EC	3	0	0	30	70	3
7	1804407	LABVIEW Programming Lab	ESC	0	0	3	50	50	1.5
8	1804408	Analog and Digital Circuits Lab	EC	0	0	3	50	50	1.5
9	1824410	Advanced English Communication Skills lab	HS	0	0	4	50	50	2
		Total:							22


Detailed Course Structure
COMPUTER SCIENCE AND ENGINEERING

III Semester

Subject Code	Subject Category	Course Name	L	T	P	IM	EM	CR
18993M1	MC	Environmental Science (Mandatory Course-1)	2	0	0	30	--	0
1804302	PN	Basics of Electronics Engineering	3	0	0	30	70	3
1805303	PCC	Data Structures	3	0	0	30	70	3
1805304	PCC	Discrete Mathematics	3	0	0	30	70	3
1805305	PCC	Digital Logic Design	3	0	0	30	70	3
1805306	PCC	Python Programming	3	0	0	30	70	3
1825307	HSMC	Managerial Economics and Financial Accounting	3	0	0	30	70	3
1814311	PN	Basics of Electronics Engineering Lab	0	0	2	50	50	1
1805309	PCC	Data Structures Lab	0	0	3	50	50	1.5
1805310	PCC	Python Programming Lab	0	0	3	50	50	1.5
		TOTAL	20	0	8	360	570	22

IV SEMESTER

Subject Code	Subject Category	Course Name	L	T	P	IM	EM	CR
1823401	BSC	Biology for Engineers	2	0	0	30	70	2
1821402	BSC	Probability & Statistics	3	0	0	30	70	3
1805403	PCC	Computer Organization	3	0	0	30	70	3
1805404	PCC	Operating Systems	3	0	0	30	70	3
1805405	PCC	Design and Analysis of Algorithms	3	0	0	30	70	3
1805406	PCC	Java Programming	3	0	0	30	70	3
1805407	PCC	Formal Languages and Automata Theory	3	0	0	30	70	3
1805408	PCC	Java Programming lab	0	0	2	50	50	1
1805410	PCC	Operating Systems Lab	0	0	2	50	50	1
		TOTAL	20	0	4	310	590	22


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Course Title	NUMERICAL METHODS, PROBABILITY AND STATISTICS					B. Tech. III Sem (Common to CE & ME Branches)		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1821302	BSC	L	T	P	C	Continuous Internal Assessment	End Exams	Total
		3	0	--	3	30	70	100
Mid Exam Duration: 2Hrs					End Exam Duration: 3Hrs			
Course Objectives: The objective of this course is to familiarize the students with numerical methods of solving the non-linear equations, interpolation. Also to impart knowledge in basic concepts and few techniques in probability and statistics in relation to the engineering applications.								
Course Outcomes: On successful completion of this course, the students will be able to								
CO 1	Determine the roots of polynomial and transcendental equations by different methods. (L3)							
CO 2	Estimate an unknown quantity by using related known values.(L4)							
CO 3	Apply discrete and continuous probability distributions.(L3)							
CO 4	Demonstrate the components of a classical hypothesis test. (L3)							
CO 5	Infer the statistical inferential methods based on small and large sampling tests. (L4)							

UNIT I

Solution of algebraic and transcendental equations: Bisection method – False - position method – Newton – Raphson method.

Solution of System of equations: Jacobi's iteration method – Gauss- Seidel iteration method.

Learning Outcomes:

After completion of this unit student able to

- find approximate roots of an equation by using different numerical methods
- find solution of system of equations by using different numerical methods

UNIT II: Interpolation

Finite differences – Forward differences – Backward differences – Newton's forward and backward difference formulae for interpolation – Lagrange's formula for unequal intervals- Inverse interpolation.

Learning Outcomes:

After completion of this unit student able to

- explain various discrete operators and find the relation among operators
- apply Newton's forward and backward formulas for equal intervals
- apply Lagrange's formula to find inverse interpolation

UNIT III: Probability

Course Title	MATHEMATICS – III					B. Tech. III Sem ECE		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1821301	BSC	L	T	P	C	Continuous Internal Assessment	End Exams	Total
		3	1	--	4	30	70	100
Mid Exam Duration: 2Hrs					End Exam Duration: 3Hrs			
Course Objectives:								
The objective of this course is to familiarize the students Bessel functions, Legendre's equations and the concepts of complex variables to equip the students to solve application problems in their disciplines.								
Course Outcomes: On successful completion of this course, the students will be able to								
CO 1	Solve Bessel and Legendre's equations in terms of polynomials(L3)							
CO 2	Define analytic function, singularities, poles and residues (L1)							
CO 3	Determine the differentiation of complex functions used in engineering problems and analyze images from z-plane to w-plane.(L4)							
CO 4	Discuss the various special transformations.(L2)							
CO 5	Analyze real definite integrals in definite regions.(L4)							

UNIT I

Bessel functions –Introduction – Recurrence formulae for $J_n(x)$ – Generating function for $J_n(x)$ – Jacobi series – Orthogonality of Bessel functions – Legendre's equation – Rodrigue's formula, Legendre Polynomials – Generating function for $P_n(x)$ – Recurrence formulae for $P_n(x)$ – Orthogonality of Legendre polynomials.

Learning Outcomes:

- After completion of this unit student able to solve Bessel and Legendre's equations in terms of polynomials.

UNIT II

Functions of a complex variable – Limit – Continuity –Differentiability – Analytic function – Properties – Cauchy – Riemann equations in Cartesian and polar coordinates – Harmonic and Conjugate harmonic functions. Construction of analytic function using Milne's Thomson method.

Learning Outcomes:

After completion of this unit student able to

- define continuity and differentiability for complex functions.
- apply Cauchy-Riemann equations to complex functions in order to determine whether a given continuous function is analytic.

UNIT III

Conformal Mapping: Some standard transforms – translation, rotation, magnification, inversion and reflection. Bilinear transformation – invariant points. Special conformal transformations: $w = e^z$, z^2 , $\sin z$ and $\cos z$.

Learning Outcomes:

- After completion of this unit student able to analyze images from z-plane to w-plane.

UNIT IV

Complex integration: Line integral – Evaluation along a path – Cauchy’s theorem – Cauchy’s integral formula – Generalized integral formula. Singular point – Isolated singular point – Simple pole, Pole of order m – Essential singularity.

Learning Outcomes:

- After completion of this unit student able to make use of integration concepts for complex functions.

UNIT V

Residues: Evaluation of residues by formula. Cauchy’s residue theorem – Evaluation of the real definite integrals of the type (i) Integration around the unit circle (ii) integration around a small semi circle

Learning Outcomes:

After completion of this unit student able to


- make use of the Cauchy residue theorem to evaluate certain integrals.
- analyze real definite integrals in definite regions.

Text Books:

1. Higher Engineering Mathematics, Dr. B.S Grewal, Khanna Publishers-42 edition.
2. Advanced Engineering Mathematics, Erwin Kreyszig, Willey Publications, 9th edition- 2013.
3. Advanced Engineering Mathematics, Greenberg Michael D, Cengage Publishers.
4. Advanced Engineering Mathematics, Neil Opeter V

Reference Books:

1. Higher Engineering Mathematics, B.V.Ramana, Mc.Graw Hill Education (India) Private Limited.
2. Advanced Engineering Mathematics by N. Bali, M Goyal, Firewall Media 7th edition.
3. Engineering Mathematics, Volume – III, E. Rukmangadachari & E. Keshava Reddy, Pearson Publisher.
4. Calculus an introduction to applied Mathematics, Greenspan Harvey P Benney David J Turner James E


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Course Title	MATHEMATICS – III					B. Tech. IV Sem EEE		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1821401	BSC	L	T	P	C	Continuous Internal Assessment	End Exams	Total
		3	--	--	3	30	70	100
Mid Exam Duration: 2Hrs					End Exam Duration: 3Hrs			
Course Objectives: The objective of this course is to familiarize the students Bessel functions, Legendre's equations and the concepts of complex variables to equip the students to solve application problems in their disciplines.								
Course Outcomes: On successful completion of this course, the students will be able to								
CO 1	Solve Bessel and Legendre's equations in terms of polynomials(L3)							
CO 2	Define analytic function, singularities, poles and residues (L1)							
CO 3	Determine the differentiation of complex functions used in engineering problems and analyze images from z-plane to w-plane.(L4)							
CO 4	Discuss the various special transformations.(L2)							
CO 5	Analyze real definite integrals in definite regions.(L4)							

UNIT I

Bessel functions –Introduction – Recurrence formulae for $J_n(x)$ – Generating function for $J_n(x)$ – Jacobi series – Orthogonality of Bessel functions – Legendre's equation – Rodrigue's formula, Legendre Polynomials – Generating function for $P_n(x)$ – Recurrence formulae for $P_n(x)$ – Orthogonality of Legendre polynomials.

Learning Outcomes:

- After completion of this unit student able to solve Bessel and Legendre's equations in terms of polynomials.

UNIT II

Functions of a complex variable – Limit – Continuity –Differentiability – Analytic function – Properties – Cauchy – Riemann equations in Cartesian and polar coordinates – Harmonic and Conjugate harmonic functions. Construction of analytic function using Milne's Thomson method.

Learning Outcomes:

After completion of this unit student able to

- define continuity and differentiability for complex functions.
- apply Cauchy-Riemann equations to complex functions in order to determine whether a given continuous function is analytic.

UNIT III

Conformal Mapping: Some standard transforms – translation, rotation, magnification, inversion and reflection. Bilinear transformation – invariant points. Special conformal transformations: $w = e^z$, z^2 , $\sin z$ and $\cos z$.

Learning Outcomes:

- After completion of this unit student able to analyze images from z-plane to w-plane.

UNIT IV

Complex integration: Line integral – Evaluation along a path – Cauchy’s theorem – Cauchy’s integral formula – Generalized integral formula. Singular point – Isolated singular point – Simple pole, Pole of order m – Essential singularity.

Learning Outcomes:

- After completion of this unit student able to make use of integration concepts for complex functions.

UNIT V

Residues: Evaluation of residues by formula. Cauchy’s residue theorem – Evaluation of the real definite integrals of the type (i) Integration around the unit circle (ii) integration around a small semi circle

Learning Outcomes:

After completion of this unit student able to

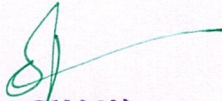
- make use of the Cauchy residue theorem to evaluate certain integrals.
- analyze real definite integrals in definite regions.

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1. Higher Engineering Mathematics, Dr. B.S Grewal, Khanna Publishers-42 edition.
2. Advanced Engineering Mathematics, Erwin Kreyszig, Willey Publications, 9th edition- 2013.
3. Advanced Engineering Mathematics, Greenberg Michael D, Cengage Publishers.
4. Advanced Engineering Mathematics, Neil Opeter V

Reference Books:

1. Higher Engineering Mathematics, B.V.Ramana, Mc.Graw Hill Education (India) Private Limited.
2. Advanced Engineering Mathematics by N. Bali, M Goyal, Firewall Media 7th edition.
3. Engineering Mathematics, Volume – III, E. Rukmangadachari & E. Keshava Reddy, Pearson Publisher.
4. Calculus an introduction to applied Mathematics, Greenspan Harvey P Benney David J Turner James E


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Course Title	PROBABILITY AND STATISTICS					B. Tech. IV Sem CSE		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1821402	BSC	L	T	P	C	Continuous Internal Assessment	End Exams	Total
		3	--	--	3			
Mid Exam Duration: 2Hrs					End Exam Duration: 3Hrs			
Course Objectives:								
<ul style="list-style-type: none"> To help the students in getting a thorough understanding of the fundamentals of probabilities. To help the students in getting a thorough understanding and usage of statistical techniques like testing of hypothesis and statistical control. 								
Course Outcomes: On successful completion of this course, the students will be able to								
CO 1	Understand the concepts of Probability. (L2)							
CO 2	Interpret the properties of probability distributions and their applications. (L3)							
CO 3	Analyze the problems of engineering and industry using the techniques of testing of hypothesis for large samples.(L4)							
CO 4	Analyze the problems of engineering and industry using the techniques of testing of hypothesis for small samples.(L4)							
CO 5	Apply statistical quality control and draw appropriate inferences for engineering problems.(L3)							

UNIT I

Random variables: Discrete random variables – Continuous random variables –Probability distribution function – Discrete and continuous probability distribution – Mathematical Expectation, Variance and standard deviation of probability distribution.

Learning Outcomes:

At the end of this unit, the student will be able to

- explain the notion of random variable, distribution functions and expected value

UNIT II

Discrete distributions: Binomial and Poisson distributions with related properties.

Continuous distributions: Uniform and Normal distributions with related properties.

Learning Outcomes:

At the end of this unit, the student will be able to

- apply Binomial and Poisson distributions for real data to compute probabilities, theoretical frequencies
- interpret the properties of normal distribution and its applications

UNIT III

Testing of Hypothesis: Formulation of null hypothesis, critical regions, level of significance. Large sample tests. Tests based on normal distribution – z -test for means and proportions.

Learning Outcomes:

At the end of this unit, the student will be able to

- explain the concept of estimation, interval estimation and confidence intervals
- apply the concept of hypothesis testing for large samples

UNIT IV

Small samples: t-test for one sample, two samples problems and paired t-test. F-test – Chi-square test (testing of goodness of fit and independence).

Learning Outcomes:

At the end of this unit, the student will be able to

- apply the concept of testing hypothesis for small samples to draw the inferences
- estimate the goodness of fit

UNIT V

Statistical Quality Control: Concept of quality of a manufactured product – defect and defectives – Causes of variation – Random and assignable causes – The principle of Shewhart control chart – Charts for attributes and variable quality characteristics – Construction and operation of \bar{X} -bar chart and R-chart, p-chart and c-chart.

Learning Outcomes:

At the end of this unit, the student will be able to

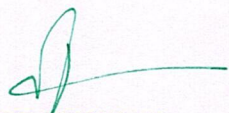
- apply the concept of statistical quality control to draw different charts and draw the inferences from them.

Text Books:

1. Higher Engineering Mathematics, Dr. B.S.Grewal, Khanna Publishers-42 edition.
2. Probability and Statistics for Engineers and Scientists, Walpole and Myers, Seventh edition, Pearson Education Asia, 2002
3. Probability and Statistics for Engineers, Johnson, Fifth edition, Prentice Hall of India.
4. An Introduction to Probability theory and its applications, William Feller

Reference Books:

1. Probability and Statistics by E. Rukmangadachari & E. Keshava Reddy, Pearson Publishers.
2. Statistical Methods by S.P.Gupta, S Chand Publications.
3. Probability & Statistics, Mendenhall Beaver, Beaver
4. Advanced Engineering Mathematics, Erwin Kreyszig, Wiley Publications, 9th edition-2013


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