BOARD OF STUDIES MEETING – 2019-20

K.S.R.M COLLEGE OF ENGINEERING

AUTONOMOUS

Minutes of the Meeting

Date	**28-12-2019**	**Day**	**Saturday**
Time	**10.30 AM – 12.00 PM**	**Venue**	**Main Block Computer Lab**
Dept./SS	**Humanities and Sciences (Biology)**	**Convener**	**Dr. I. Sreevani**

Members Present: 05

S. No	Name	Designation	Signature
1.	Dr.I. Sreevani	Associate Prof., HOD, Dept. of H&S, KSRMCE	
2.	Dr. M. C. Venkata Subbiah	Reader in Zoology, Govt. College, Kadapa	
3.	Dr. P. Chandramathi Shankar	Professor & HOD, Biology, Y.V. University, Kadapa	
4.	Smt. B. Prashanthi	Assistant Professor, K.S.R.M.C.E	
5.	Dr. K. Venkata Ramana	Assistant Professor, K.S.R.M.C.E	

Members Absent: 00

S. No	Name	Designation

Dr. I. Sreevani, 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	To finalize the syllabus of Biology for Engineers for III & IV Sem under R18UG Regulations.	The Board of Chairman has presented the syllabus designed by the faculty after taking the feedback from all stakeholders and comparing with premier institute syllabus.	The BOS members suggested 6-7% variation in prepared syllabus & finally approved the syllabus.	Dr. I. Sreevani

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

Convener

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

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**

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

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

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

UG Programs in Mechanical Engineering (R18 UG)
Curriculum

Semester III [Second year]

S. NO	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**

Dr. I. SREEVANI M.Sc,,Ph.D
Head of Humanities & Sciences
K[illegible] College of Engineering
K[illegible]

UG Programs in Mechanical Engineering (R18 UG)
Curriculum

Semester IV (Second Year)

S. NO	Course Code	Subject code	Course Title	Hours per week			IM	EM	Total contact hours	credits
				L	T	P				
1	PCC-ME	**1803401**	Applied Thermodynamics	3	0	0	30	70	3	3
2	PCC-ME	**1803402**	Fluid Mechanics &Fluid Machinery	3	0	0	30	70	3	3
3	PCC-ME	**1803403**	Kinematics of Machinery	3	0	0	30	70	3	3
4	**ESC**	**1814404**	**Basic Electronic Engineering**	**3**	**1**	**0**	**30**	**70**	**4**	**4**
5	PCC-ME	**1803405**	Instrumentation and control systems	3	0	0	30	70	3	3
6	PCC-ME	**1803406**	Computer Aided Machine Drawing	1	0	2	50	50	3	2
7	**ESC**	**1803407**	**Basic Electronics & MOF Lab**	0	0	3	50	50	3	1.5
8	MC-I	**18994M1**	Environmental Science	2	0	0	30	0	2	0
9	PCC – ME	**1803408**	Seminar/Industrial Training	0	0	1	100	0	1	1
10	HMSC-	**1824409**	Advanced English communication Lab	0	0	3	50	50	03	1.5
								Total credits		**22**
								Total Hours		**27**

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

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 CircuitsLab	EC	0	0	3	50	50	1.5
9	1824410	Advanced English Communication Skills lab	HS	0	0	4	50	50	2
		Total:							22

Dr. I. SREEVANI M.Sc.,Ph.D.
Head of Humanities & Sciences
K.S.R.M. College of Engineering
KADAPA-516 003

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**

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

Course Title	BIOLOGY FOR ENGINEERS				B. Tech. CE,ME & EEE -III Sem ECE & CSE - IV Sem			
Course Code	Category	Hours/Week			Credits	Maximum Marks		
1823301/ 1823401	BSC	L	T	P	C	Continuous Internal Assessment	End Exams	Total
		2	--	--	2	30	70	100
Mid Exam Duration: 2Hrs					End Exam Duration: 3Hrs			

Course Objectives:

- Introduction to Basics of Biology which includes cell, the unit of life, Different types of cells and classification of living organisms.
- Understanding what are biomolecules present in a cell, their structure function and their role in a living organism. Application of certain bio molecules in Industry.
- Brief introduction to human physiology, which is essential for bioengineering field.
- Understanding the hereditary units, that is genes and genetic materials (DNA and RNA) present in living organisms and how they replicate and pass and preserve vital information in living organisms.
- How biology can be applied in our daily life using different technology, for production of medicines to transgenic plants and animals to designing new biotechnological products.

Course Outcomes: On successful completion of this course, the students will be able to

CO 1	**Define** the cells, its structure and function, and Different types of cells and basis for Classification of living organisms.
CO 2	**Explain** about biomolecules its structure and function and their role in a living organism How biomolecules are useful in Industry & explain about human physiology.
CO 3	**Demonstrate** the concept of biology and its uses in combination with different technologies for production of medicines and production of transgenic plants and animals.
CO 4	**Illustrate** about genes and genetic materials (DNA & RNA) present in living organisms and how they replicate, transfer & preserve vital information in living organisms.
CO 5	**Understand the** importance of transgenic plants and animals in synthesis of proteins .

UNIT-I

Introduction to Basic Biology (5 hrs)

Cell: Cell theory, Cell shapes, structure of a Cell, The Plant Cell and animal Cell, Cell cycle, types of chromosomes, prokaryotic and eukaryotic Cell, Plant Tissue and Animal Tissue. Brief introduction to five kingdoms of classification.

Learning Outcomes:

After completing this unit, the student will be able to

- Summarize the basis of life.
- Understand the difference between lower organisms (prokaryotes) from higher organisms (eukaryotes).
- Understand how organisms are classified based.

UNIT-II

Introduction to Bio-molecules(6 hrs)

Classification of carbohydrates, proteins and their structures, Amino acid, nucleic acid (DNA and RNA) and their types, types of enzymes. Large scale production of enzymes by

Fermentation.

Learning Outcomes:

After completing this unit, the student will be able to

Understand what are biomolecules? Their role in living cells their structure function and how they are produced.

- Interpret the relationship between the structure and function of nucleic acids.
- Summarize the applications of enzymes in industry.
- Understand what is fermentation and its applications of fermentation in industry.

UNIT-III

Human Physiology(6 hrs)

Nutrition (Classes of nutrients or food substances), Digestive systems, Respiratory system (two kinds of respiration – aerobic and anaerobic), Respiratory organs, Excretory system.

Learning Outcomes:

After completing this unit, the student will be able to

- Understand what nutrients are
- Understand the mechanism and process of important human functions

UNIT-IV

Genes, Replication of DNA, And Introduction to recombinant DNA Technology(6 hrs)

Prokaryotic gene and Eukaryotic gene structure, gene replication, Transcription and Translation in Prokaryote and Eukaryote and synthesis of protein in Eukaryotes. Recombinant DNA technology (Insulin production).

Learning Outcomes:

After completing this unit, the student will be able to

- Understand and explain about gene structure and replication in prokaryotes and Eukaryotes.
- How genetic material is replicated and also understands how proteins are synthesized.
- Understand about recombinant DNA technology and its application in different fields.
- Explain what is cloning.

UNIT-V

Application of Biology(5 hrs)

Genetic Engineering-production of vaccines, its components, types of vaccines, Enzymes and their application in industry, protein synthesis, type of antibodies, transgen and transgenic, transgenic plants (BT cotton) and animal (Dolly), Cloning in plants and animals. Biosensors-characteristic, basic principles, biological applications. Tissue-engineering-objective/goals, components, applications. Bio engineering- introduction to bio engineering.

Learning Outcomes:

After completing this unit, the student will be able to Understand.

- How biology is applied for production of useful products for mankind.
- What are biosensors.
- Understand Transgenic plants and animals.

Text Books:

1. Applied cell and Molecular Biology for Engineers, 1ST Edition , Gabi Nindl Waite , Lee R. Waite ISBN-13:978-0071472425,ISBN-10:0071472428 .
2. Biology for Engineers, S.ThyagaRajan, N . Selvamurugan, M.P. Rajesh, R.A.Nazeer, Richard W. Thilagaraj , S.Barathi , M.K.Jaganathan. MCGrawHill custom publishing,ISBN-13:978-1-12-143993-1.

3. Biology for Engineers , 2nd Edition, Arthur T.Johnson , CRC press Taylor & Francis group.
4. Biology for Engineers , Wiley precise Textbook series ISBN :9788126576340.

Reference Books:

1. Cell and Molecular Biology-P.K.Gupta, Rastogi publications, 2005. ISBN 9788171338177
2. AlbertsEt.Al. The molecular biology of the cell, 6/e, Garland Science, 2014
3. John Enderle and Joseph Bronzino Introduction to Biomedical Engineering, 3/e, 2012
4. Introductory Microbiology. 1995, by Trevor Gross.

Faculty In-charge

HOD/H&S

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

Course Title	Environmental Science					B. Tech. ECE & CSE (III Sem) CE, ME, EEE (IV Sem)		
Course Code	Category	Hours/Week			Credits	Maximum Marks		
18993M1/ 18994M1	BSC	L	T	P	C	Continuous Internal Assessment	End Exams	Total
		2	0	0	0	30	-	30
Mid Exam Duration: 2Hrs								

Course Objectives:

- To make the students to get awareness on importance of environment in our life.
- To understand the importance of protecting natural resources, ecosystems for future generations and pollution causes due to the day to day activities of human life to save earth from the inventions by the engineers.

Course Outcomes: On successful completion of this course, the students will be able to

CO 1	**Influence** the society in proper utilization of Natural resources
CO 2	**Understand** the interconnection of human dependence on this ecosystem.
CO 3	**Recall** the concepts of biodiversity & gain knowledge on distribution at different levels.
CO 4	**Analyze** the impact of environmental pollution on environment & solving environmental problems
CO 5	**Discuss** environmental laws & analyze the environmental concerns and follow sustainable developmental activities.

UNIT I: Introduction to Environmental Studies- Natural Resources

Multi-disciplinary nature of environmental studies. Scope and Importance.

Natural resources and associated problems – Renewable and non-renewable Resources

(a) Forest resources –Deforestation: Causes and impacts due to mining, dams – benefits and problems

(b) Water resources – Use and over utilization of surface and ground water – Floods, drought, and conflicts over water

(c) Energy resources –Renewable and Non-Renewable energy resources, use of alternate energy resource

(d) Land resources -Soil erosion and desertification, Land degradation.

Role of an individual in conservation of natural resources.

Learning Outcomes:

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

- to understand the multidisciplinary nature of the environment
- understand the importance of natural resources
- analyze the problems associated with excess usages of natural resources
- understand role of individual in protection of environment

UNIT II: ECOSYSTEMS

Ecosystem- Definition – Structure and function of an ecosystem – Energy flow in the ecosystem –Food chains, food webs, Ecological succession.

Introduction, types, characteristic features of the following ecosystem:

(a)Forest ecosystem, (b)Grassland ecosystem, (c)Desert ecosystem, (d)Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Learning Outcomes:

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

- articulate the basic structure and functions of ecosystem
- provides knowledge on interrelationship of one organism with other organism
- get awareness on different types of ecosystems present in our surroundings and their importance.

UNIT III: BIODIVERSITY AND ITS CONSERVATION

Levels of Biodiversity: genetic, species and ecosystem diversity – Bio-geographical classification of India – Hotspots. Value of biodiversity: consumptive use, Productive use, social, ethical, aesthetic and option values – India as a mega-diversity nation – Endangered and endemic species. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts – Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Learning Outcomes:

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

- explains the concept of genetic diversity
- explain endangered and endemic species of India.
- identify the threats to biodiversity due to human involvement
- Provides knowledge on conservation of biodiversity.

UNIT IV: ENVIRONMENTAL POLLUTION

Definition, Cause, effects and control measures of (a) Air Pollution, (b)Water pollution, (c)Soil pollution (d)Noise pollution. Nuclear hazards –Risks to human health. Solid waste management: Control measures of urban and industrial wastes. Pollution case studies. Global Warming, Ozone layer depletion, acid rains and impacts on human communities and environment. Disaster management: floods, earthquakes, cyclones

Learning Outcomes:

At the end of this unit student will be able to

- understand Cause, effects and control measures of air pollution.
- understand soil, noise & water pollution.
- get awareness on impact of global warming and acid rains on humans and environment.
- get knowledge on management of solid waste.
- explain disaster management cycle in India.

UNIT V:

Environmental policies

Environment Protection Act – Air (Prevention and Control of Pollution) Act. – Water (Prevention and control of Pollution) Act – Wildlife Protection Act – Forest Conservation Act .International agreements: Montreal and Kyoto protocols and conservation on Biological Diversity (CBD).

Human communities and Environment

Human population and growth: impacts on environment, human health and welfares.
Environmental movements: Chipko, silent valley.
Environmental Ethics: Role of individual in environmental conservation. Public awareness.

Learning Outcomes:

At the end of this unit student will be able to

- explain the enforcement of Environmental legislation
- get awareness on punishments associated with destruction of environment
- Understand the impact of growing population on welfare of society
- get knowledge on how to increase public awareness on protection of environment.

FIELD WORK: Visit to a local area to document environmental assets River/forest grassland/hill/mountain – Visit to a local polluted site-Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds – Study of simple ecosystems-pond, river, hill slopes, etc..

Text Books:

1. Text book of Environmental Studies for Undergraduate Courses by Erach Bharucha for University Grants Commission, Universities Press.
2. Environmental studies by Benny Joseph, Mc, Graw Hill Publications.
3. Principles and a basic course of Environmental science for under graduate course by Kousic, KouShic.
4. Text book of Environmental science and Technology by M. Anji Reddy,BS Publication.

Reference Books:

1. Environmental sciences and engineering – J. Glynn Henry and Gary W. Heinke – Printice hall of India Private limited.
2. Environmental Studies by Anindita Basak – Pearson education.
3. Introduction to Environmental engineering and science by Gilbert M. Masters and Wendell P. Ela - Printice hall of India Private limited.
4. Environmental Science, A Global Concerns, William P. Cunningham, Mary Ann Cunningham, Mc Graw Hill publications

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