JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA

KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF CIVIL ENGINEERING

COURSE STRUCTURE AND SYLLABUS

For

B. TECH CIVIL ENGINEERING

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA

KAKINADA - 533 003, Andhra Pradesh, India

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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF CIVIL ENGINEERING

I Year – I SEMESTER

Sl. No	Course Code	Subjects	L	T	P	Credits
1	BS1101	Mathematics – I	3	0	0	3
2	BS1102	Mathematics – II	3	0	0	3
3	BS1108	Engineering Physics	3	0	0	3
4	ES1104	Engineering Mechanics	3	1	0	4
5	ES1103	Engineering Drawing	1	0	3	2.5
6	HS1102	English Lab	0	0	3	1.5
7	BS1109	Engineering Physics Lab	0	0	3	1.5
8	PR1101	Engineering Exploration Project	0	0	2	1
		Total Credits	**16**	**0**	**12**	**19.5**

I Year – II SEMESTER

Sl. No	Course Code	Subjects	L	T	P	Credits
1	HS1201	English	3	0	0	3
2	BS1203	Mathematics – III	3	0	0	3
3	BS1210	Engineering Chemistry	3	0	0	3
4	ES1201	Programming for problem Solving Using C	3	0	0	3
5	ES1207	Computer Aided Engineering Drawing	1	0	3	2.5
6	ES1202	Programming for problem Solving Using C Lab	0	0	3	1.5
7	BS1211	Engineering Chemistry Lab	0	0	3	1.5
8	HS1203	Communications Skills Lab	0	0	3	1.5
9	ES1219	Workshop Practice Lab	0	0	3	1.5
10	MC1201	Environmental Science	3	0	0	0
		Total Credits	**15**	**0**	**11**	**20.5**

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DEPARTMENT OF CIVIL ENGINEERING

I YEAR: I- SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	BS301	Complex Variables and Statistical Methods	3	0	0	3
2	PC301	Strength of Materials-I	3	0	0	3
3	PC302	Fluid Mechanics	3	0	0	3
4	ES301	Surveying and Geometrics'	3	0	0	3
5	PC303	Building Materials, Construction and Planning	3	0	0	3
6	PC304	Transportation Engineering-I	3	0	0	3
7	PC305	Strength of Materials Lab	0	0	3	1.5
8	PC306	Surveying Field Work – I	0	0	3	1.5
9	MC301	Constitution of India	2	0	0	0
		Total Credits				**21**

II YEAR: II- SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	PC401	Strength of Materials-II	3	0	0	3
2	PC402	Hydraulics and Hydraulic Machinery	3	0	0	3
3	ES401	Engineering Geology	3	0	0	3
4	PC403	Transportation Engineering - II	3	0	0	3
5	PC404	Environmental Engineering - I	3	0	0	3
6	PC405	Engineering Geology Lab	0	0	2	1
7	PC406	Transportation Engineering Lab	0	0	3	1.5
8	PC407	Fluid Mechanics & Hydraulics Machinery Lab	0	0	3	1.5
9	MC401	Essence of Indian Traditional Knowledge/ Professional Ethics and Human Values	2	0	0	0
		Total Credits				**19**

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III YEAR: I- SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	PC501	Structural Analysis	3	0	0	3
2	PC502	Concrete Technology	2	0	0	2
3	PC503	Water Resources Engineering - I	3	0	0	3
4	PC504	Environmental Engineering - II	3	0	0	3
5	PE501	Program Elective – I	3	0	0	3
6	OE501	Open Elective – I	3	0	0	3
7	PC506	Concrete Technology Lab	0	0	3	1.5
8	PC507	Surveying Field Work - II	0	0	3	1.5
		Total Credits				**20**

III YEAR: II- SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	PC601	Design & Drawing of Reinforced Concrete Structures	3	0	0	3
2	PC602	Water Resources Engineering – II	3	0	0	3
3	PC603	Geotechnical Engineering - I	3	0	0	3
4	HS601	Managerial Economics &Financial Analysis	3	0	0	3
5	PE601	Program Elective – II	3	0	0	3
6	OE601	Open Elective – II	3	0	0	3
7	PC604	CAD Lab	0	0	3	1.5
8	PC605	Environmental Engineering Lab	0	0	3	1.5
9	PR601	Socially Relevant Project	0	0	2	1
10	MC601	Employability Skills	0	0	2	0
		Total Credits				**22**

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DEPARTMENT OF CIVIL ENGINEERING

IV YEAR: I- SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	PC701	Design & Drawing of Steel Structures	3	0	0	3
2	PC702	Geotechnical Engineering - II	3	0	0	3
3	PC703	Remote Sensing & GIS	3	0	0	3
4	PE701	Program Elective – III	3	0	0	3
5	OE701	Open Elective – III	3	0	0	3
6	PC704	Remote Sensing & GIS Lab	0	0	3	1.5
7	PC705	Geotechnical Engineering Lab	0	0	3	1.5
8	PR701	Industrial Training/ Internship or Seminar	0	0	3	1
9	PR702	Project Work Phase-I	0	0	4	2
		Total Credits				**21**

IV YEAR: II- SEMESTER

Sl. No.	Course Code	Course Title	L	T	P	Credits
1	PC801	Estimation Specifications and Contract	3	0	0	3
2	PE801	Program Elective - IV	3	0	0	3
3	PE802	Program Elective – V	3	0	0	3
4	PR801	Project Work Phase-II	0	0	16	8
		Total Credits				**17**

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Open Electives	Professional Elective-I	Professional Elective-II	Professional Elective-III	Professional Elective-IV	Professional Elective-V
a) Disaster Management	a) Repair & Rehabilitation of Buildings	a) Pre-stressed Concrete	a) Bridge Engineering	a) Finite Element Methods	a) Advanced Structural Analysis
b) Environmental Pollution & Control	b) Environmental Impact Assessment	b) Watershed Management	b) Industrial Waste Water Treatment	b) Design & Drawing of Irrigation Structures	b) Urban Hydrology
c) Elements of Civil Engineering	c) Reinforced Soil Structures	c) Advanced Foundation Engineering	c) Earth & Rock-fill Dams	c) Soil Dynamics and Machine Foundations	c) Ground Improvement Techniques
d) Green Technology	d) Traffic Engineering	d) Urban Transportation Planning	d) Intelligent Transportation Systems	d) Road Safety Engineering	d) Pavement Management Systems
e) Smart Cities	e) Construction Technology & Management	e) Architecture and Town Planning	e) Building Services	e) Disaster Management & Mitigation	e) Low-cost Housing
f) Project Management				f)SWAYAM / NPTEL /MOOCS COURSES (12 weeks duration)	f) SWAYAM / NPTEL /MOOCS COURSES (12 weeks duration)
g) Traffic Safety					
h) Geo-Spatial Technologies					
i) Waste Water Treatment					

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For

B. Tech COMPUTER SCIENCE &ENGINEERING

(Applicable for batches admitted from 2019-2020)

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE STRUCTURE - R19

I Year – I SEMESTER

S. No	Course Code	Subjects	L	T	P	Credits
1	HS1101	English	3	0	0	3
2	BS1101	Mathematics - I	3	0	0	3
3	BS1106	Applied Chemistry	3	0	0	3
4	ES1112	Fundamentals of Computer Science	3	0	0	3
5	ES1103	Engineering Drawing	1	0	3	2.5
6	HS1102	English Lab	0	0	3	1.5
7	BS1107	Applied Chemistry Lab	0	0	3	1.5
8	ES1105	IT Workshop	0	0	3	1.5
9	MC1101	Environmental Science	3	0	0	0
		Total Credits	**16**	**0**	**12**	**19**

I Year – II SEMESTER

S. No	Course Code	Subjects	L	T	P	Credits
1	BS1202	Mathematics – II	3	0	0	3
2	BS1203	Mathematics – III	3	0	0	3
3	BS1204	Applied Physics	3	0	0	3
4	ES1201	Programming for Problem Solving using C	3	0	0	3
5	ES1213	Digital Logic Design	3	0	0	3
6	BS1205	Applied Physics Lab	0	0	3	1.5
7	HS1203	Communication Skills Lab	0	1	2	2
8	ES1202	Programming for Problem Solving using C Lab	0	0	3	1.5
9	PR1201	Engineering Exploration Project	0	0	2	1
10	MC1204	Constitution of India	3	0	0	0
		Total Credits	**18**	**1**	**10**	**21**

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II Year – I SEMESTER

S.No	Course Code	Courses	L	T	P	Credits
1	CS2101	Mathematical Foundations of Computer Science	3	1	0	4
2	CS2102	Software Engineering	3	0	0	3
3	ES2101	Python Programming	3	0	0	3
4	CS2103	Data Structures	3	0	0	3
5	CS2104	Object Oriented Programming through C++	3	0	0	3
6	CS2105	Computer Organization	3	0	0	3
7	ES2102	Python Programming Lab	0	0	3	1.5
8	CS2106	Data Structures through C++ Lab	0	0	3	1.5
9	MC2101	Essence of Indian Traditional Knowledge	2	0	0	0
10	MC2102	Employability Skills- I*	2	0	0	0
		Total	23	1	6	22
*Internal Evaluation through Seminar / Test for 50 marks						

II Year – II SEMESTER

S.No	Course Code	Courses	L	T	P	Credits
1	BS2201	Probability and Statistics	3	0	0	3
2	CS2201	Java Programming	2	1	0	3
3	CS2202	Operating Systems	3	0	0	3
4	CS2203	Database Management Systems	3	1	0	4
5	CS2204	Formal Languages and Automata Theory	3	0	0	3
6	CS2205	Java Programming Lab	0	0	3	1.5
7	CS2206	UNIX Operating System Lab	0	0	2	1
8	CS2207	Database Management Systems Lab	0	0	3	1.5
9	MC2201	Professional Ethics & Human Values	3	0	0	0
10	PR2201	Socially Relevant Project*	0	0	2	1
		Total	17	2	10	21
*Internal Evaluation through Seminar for 50 marks						

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III Year – I SEMESTER

S.No	Course Code	Courses	L	T	P	Credits
1	CS3101	Data Warehousing and Data Mining	3	0	0	3
2	CS3102	Computer Networks	3	0	0	3
3	CS3103	Compiler Design	3	0	0	3
4	CS3104	Artificial Intelligence	3	0	0	3
5	PE3101	**Professional Elective- I** 1. Computer Graphics 2. Principles of Programming Languages 3. Advanced Data Structures 4. Software Testing Methodologies 5. Advanced Computer Architecture	3	0	0	3
6	CS3105	Computer Networks Lab	0	0	2	1
7	CS3106	AI Tools & Techniques Lab	0	0	3	1.5
8	CS3107	Data Mining Lab	0	0	3	1.5
9	MC3101	Employability Skills -II*	2	0	0	0
		Total	17	0	8	19
*Internal Evaluation through Seminar / Test for 50 marks						

III Year – II SEMESTER

S.No	Course Code	Courses	L	T	P	Credits
1	CS3201	Web Technologies	3	0	0	3
2	CS3202	Distributed Systems	3	0	0	3
3	CS3203	Design and Analysis of Algorithms	3	0	0	3
4	PE3201	**Professional Elective -II** (NPTEL/SWAYAM) **Duration: 12 Weeks Minimum** ***Course/subject title can't be repeated**	3	0	0	3
5	OE3201	**Open Elective- I** (Inter Disciplinary)	3	0	0	3
6	HS3201	Managerial Economics and Financial Accountancy	3	0	0	3
7	CS3204	Web Technologies Lab	0	0	4	2
9	PR3201	Industrial Training / Skill Development Programmes / Research Project in higher learning institutes	0	0	0	1
		Total	18	0	4	21

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IV Year – I SEMESTER

S.No	Course Code	Courses	L	T	P	Credits
1	CS4101	Cryptography and Network Security	3	0	0	3
2	CS4102	UML & Design Patterns	3	0	0	3
3	CS4103	Machine Learning	3	0	0	3
4	OE4101	**Open Elective -II** (Inter Disciplinary)	3	0	0	3
5	PE4101	**Professional Elective- III** 1. Mobile Computing 2. Data Science 3. NoSQL Databases 4. Internet of Things 5. Software Project Management	3	0	0	3
6	PE4102	**Professional Elective- IV** 1. Web Services 2. Cloud Computing 3. Mean Stack Technologies 4. Ad-hoc and Sensor Networks 5. Cyber Security & Forensics	3	0	0	3
7	CS4104	UML Lab #	0	0	2	1
8	PR4101	Project- I	0	0	0	2
9	MC4101	IPR & Patents	3	0	0	0
		Total	21	0	2	21
# Relevant theory to be taught in the lab						

IV Year – II SEMESTER

S.No	Course Code	Courses	L	T	P	Credits
1	HS4201	Management and Organizational Behavior	3	0	0	3
2	OE4201	**Open Elective- III** (Inter Disciplinary)	3	0	0	3
3	PE4201	**Professional Elective-V** 1. Deep Learning 2. Quantum Computing 3. DevOps 4. Blockchain Technologies 5. Big Data Analytics	3	0	0	3
4	PR4201	Project- II	0	0	0	7
		Total	9	0	0	16

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Open Electives to be offered by CSE for Other Branches:

Open Elective I:	Open Elective II:
1. Data Structures	1. Problem Solving using Python
2. Java Programming	2. Web Technologies
3. Data Base Management Systems	3. Machine Learning
4. C++ Programming	4. Distributed Computing
5. Operating Systems	5. AI Tools & Techniques
6. Internet of Things	6. Data Science
Open Elective III:	
1. Big Data	
2. Image Processing	
3. Mobile Application Development	
4. Cyber Security	
5. Deep Learning	
6. Blockchain Technologies	

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE STRUCTURE AND SYLLABUS

For

B. TECH ELECTRONICS AND COMMUNICATION ENGINEERING

(Applicable for batches admitted from 2019-2020)

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

I Year – I SEMESTER

Sl. No	Course Code	Subjects	L	T	P	Credits
1	HS1101	English	3	0	0	3
2	BS1101	Mathematics - I	3	0	0	3
3	BS1106	Applied Chemistry	3	0	0	3
4	ES1101	Programming for Problem Solving Using C	3	0	0	3
5	ES1103	Engineering Drawing	1	0	3	2.5
6	HS1102	English Lab	0	0	3	1.5
7	BS1107	Applied Chemistry Lab	0	0	3	1.5
8	ES1102	Programming for Problem Solving Using C Lab	0	0	3	1.5
9	MC1101	Environmental Science	3	0	0	0
		Total Credits	**16**	**0**	**12**	**19**

I Year – IISEMESTER

Sl. No	Course Code	Subjects	L	T	P	Credits
1	BS1202	Mathematics – II	3	0	0	3
2	BS1203	Mathematics – III	3	0	0	3
3	BS1204	Applied Physics	3	0	0	3
4	ES1209	Network Analysis	3	0	0	3
5	ES1211	Basic Electrical Engineering	3	0	0	3
6	ES1215	Electronic workshop	0	0	2	1
7	ES1208	Basic Electrical Engineering Lab	0	0	3	1.5
8	BS1205	Applied Physics Lab	0	0	3	1.5
9	HS1203	Communication Skills Lab	0	0	2	1
10	PR1201	Engineering Exploration Project	0	0	2	1
			15	**0**	**12**	**21**

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II Year – ISemester

S. No.	Course	Category	L	T	P	Credits
1	Electronic Devices and Circuits	PC	3	0	0	3
2	Switching Theory and Logic Design	PC	3	0	0	3
3	Signals and Systems	PC	3	0	0	3
4	Random Variables and Stochastic Processes	PC	3	0	0	3
5	Object Oriented Programming through Java	ES	3	0	0	3
6	Managerial Economics & Financial Analysis	HS	3	0	0	3
7	Electronic Devices and Circuits - Lab	LC	0	0	3	1.5
8	Switching Theory and Logic Design - Lab	LC	0	0	3	1.5
9	Constitution of India	MC	3	0	0	0
			Sub-Total			**21**

II Year – IISemester

S. No.	Course	Category	L	T	P	Credits
1	Electronic Circuit Analysis	PC	3	0	0	3
2	Linear Control Systems	PC	3	0	0	3
3	Electromagnetic Waves and Transmission Lines	PC	3	0	0	3
4	Analog Communications	PC	3	0	0	3
5	Computer Architecture and Organization	ES	3	0	0	3
6	Management and Organizational Behavior	HS	3	0	0	3
7	Electronic Circuit Analysis - Lab	LC	0	0	3	1.5
8	Analog Communications - Lab	LC	0	0	3	1.5
			Sub-Total			**21**

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III Year – I Semester

S. No.	Course	Category	L	T	P	Credits
1	Linear Integrated Circuits and Applications	PC	3	0	0	3
2	Microprocessor and Microcontrollers	PC	3	0	0	3
3	Digital Communications	PC	3	0	0	3
4	Electronic Measurements & Instrumentation	PC	3	0	0	3
5	Professional Elective (PE 1)	PE	3	0	0	3
6	Linear Integrated Circuits and Applications - Lab	LC	0	0	3	1.5
7	Digital Communications Lab	LC	0	0	3	1.5
8	Microprocessor and Microcontrollers - Lab	LC	0	0	3	1.5
9	Mini Project with Hardware Development	PR	0	0	3	1.5
10	Essence of Indian Traditional Knowledge	MC	3	0	0	0
				Sub-Total		**21**

III Year – IISemester

S. No.	Course	Category	L	T	P	Credits
1	Wired and Wireless Transmission Devices	PC	3	0	0	3
2	VLSI Design	PC	3	0	0	3
3	Digital Signal Processing	PC	3	0	0	3
4	Professional Elective (PE2)	PE	3	0	0	3
5	Open Elective (OE1)	OE	3	0	0	3
6	Internet of Things	PC	3	0	0	3
7	VLSI Lab	LC	0	0	3	1.5
8	Digital Signal Processing Lab	LC	0	0	3	1.5
9	Intellectual Property Rights (IPR) & Patents	MC	3	0	0	0
				Sub-Total		**21**

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IV Year – ISemester

S. No.	Course	Category	L	T	P	Credits
1	Microwave and Optical Communication Engineering	PC	3	0	0	3
2	Data Communications & Computer networks	PC	3	0	0	3
3	Digital Image and Video Processing	PC	3	0	0	3
4	Professional Elective (PE3)	PE	3	0	0	3
5	Professional Elective (PE4)	PE	3	0	0	3
6	Internet of Things Lab	LC	0	0	3	1.5
7	Microwave and Optical Communication Engineering LAB	LC	0	0	3	1.5
8	Project - Part I	PR	0	0	6	3
					Sub-Total	**21**

IV Year – II Semester

S. No.	Course	Category	L	T	P	Credits
1	Professional Elective (PE5)	PE	3	0	0	3
2	Open Elective (OE2)	OE	3	0	0	3
3	Project - Part II	PR	0	0	18	9
					Sub-Total	**15**
					Total	**160**

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PROFESSIONAL ELECTIVES 1:

1. Information Theory &Coding
2. Digital System Design usingHDL
3. Data structures andAlgorithms
4. Soft computing techniques and Pythonprogramming
5. Simulation& MathematicalModeling

PROFESSIONAL ELECTIVES 2:

1. Cellular & Mobile Communication
2. Digital ICDesign
3. Business Intelligence &Analytics
4. PatternRecognition
5. Robotics andAutomation

PROFESSIONAL ELECTIVES 3:

1. Communication Standards andProtocols
2. Analog ICDesign
3. SmartSensors
4. Advanced Digital SignalProcessing
5. AugmentedReality

PROFESSIONAL ELECTIVES 4:

1. SoftwareRadio
2. Low power VLSIDesign
3. EmbeddedSystems
4. DSP processors andArchitectures
5. Multi MediaCommunication

PROFESSIONAL ELECTIVES 5:

1. WirelessCommunication
2. VLSI Testing &Testability
3. Machine Learning & ArtificialIntelligence
4. SpeechProcessing
5. Industrial Internet ofThings

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OPEN ELECTIVES FOR ECE:

Open Elective 1:

1. DataMining
2. PowerElectronics
3. MEMS and itsapplications
4. Artificial NeuralNetworks

Open Elective 2:

1. 3D Printing
2. Block chainTechnology
3. Cyber Security &Cryptography

OPEN ELECTIVES OFFERED BY ECE:

OE 1   Principles of communication
OE 2   Embedded Systems

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COURSE STRUCTURE-R19

COURSE STRUCTURE AND SYLLABUS

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

I Year – I SEMESTER

Sl. No	Course Code	Subjects	L	T	P	Credits
1	HS1101	English	3	0	0	3
2	BS1101	Mathematics - I	3	0	0	3
3	BS1106	Applied Chemistry	3	0	0	3
4	ES1101	Programming for Problem Solving Using C	3	0	0	3
5	ES1103	Engineering Drawing	1	0	3	2.5
6	HS1102	English Lab	0	0	3	1.5
7	BS1107	Applied Chemistry Lab	0	0	3	1.5
8	ES1102	Programming for Problem Solving Using C Lab	0	0	3	1.5
9	MC1101	Environmental Science	3	0	0	0
		Total Credits	**16**	**0**	**12**	**19**

I Year – II SEMESTER

Sl. No	Course Code	Subjects	L	T	P	Credits
1	BS1202	Mathematics – II	3	0	0	3
2	BS1203	Mathematics – III	3	0	0	3
3	BS1204	Applied Physics	3	0	0	3
4	ES1212	Fundamentals of Computers	3	0	0	3
5	ES1217	Electrical Circuit Analysis - I	3	0	0	3
6	ES1218	Electrical Engineering Workshop	0	0	3	1.5
7	BS1205	Applied Physics Lab	0	0	3	1.5
8	HS1203	Communication Skills Lab	0	1	2	2
9	PR1201	Engineering Exploration Project	0	0	2	1
		Total Credits	**15**	**1**	**10**	**21**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

II Year – I SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Electrical Circuit Analysis - II	EE	3	--	--	3
2		Electrical Machines-I	EE	3	--	--	3
3		Electronic Devices and Circuits	ES	3	--	--	3
4		Electro Magnetic Fields	EE	3	--	--	3
5		Thermal and Hydro Prime movers	ES	3	--	--	3
6		Managerial Economics & Financial Analysis	BS	3	--	--	3
7		Thermal and Hydro Laboratory	ES	--	--	3	1.5
8		Electrical Circuits Laboratory	EE	--	--	3	1.5
9		Essence of Indian Traditional Knowledge	MC	3	--	--	0
Total Credits				**24**	**0**	**6**	**21**

II Year – II SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Electrical Measurements & Instrumentation	EE	3	--	--	3
2		Electrical Machines-II	EE	3	--	--	3
3		Digital Electronics	ES	3	--	--	3
4		Control Systems	EE	3	--	--	3
5		Power Systems-I	EE	3	--	--	3
6		Signals and Systems	EE	3	--	--	3
7		Electrical Machines -I Laboratory	EE	--	--	3	1.5
8		Electronic Devices & Circuits Laboratory	EE	--	--	3	1.5
9		Professional Ethics and Human Values	MC	3	0	0	0
Total Credits				**21**	**0**	**6**	**21**

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III Year – I SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Power Systems-II	EE	3	--	--	3
2		Power Electronics	EE	3	--	--	3
3		Linear IC Applications	ES	3	--	--	3
4		Digital Signal Processing	EE	3	--	--	3
5		Microprocessors and Microcontrollers	EE	3	--	--	3
6		Electrical Machines-II Laboratory	EE	--	--	3	1.5
7		Control Systems Laboratory	EE	--	--	2	1
8		Electrical Measurements & Instrumentation Laboratory	EE	--	--	3	1.5
9		Socially Relevant Projects	MC	--	--	1	1
		Total Credits		**15**	**0**	**9**	**20**

III Year – II SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Electric Drives	EE	3	--	--	3
2		Power System Analysis	EE	3	--	--	3
3		Data Structures	ES	3	--	--	3
4		Digital Control Systems	EE	3	--	--	3
5		Elective - I	EL	3	--	--	3
6		Open Elective - I	OE	3	--	--	3
7		Power Electronics Laboratory	EE	--	--	3	1.5
8		Microprocessors & Microcontrollers Laboratory	EE	--	--	3	1.5
9		Employability Skills	MC	3	--	--	0
		Total Credits		**18**		**6**	**21**

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COURSE STRUCTURE-R19

IV Year – I SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Switchgear & Protection	EE	3	--	--	3
2		OOPs through JAVA	ES	3	--	--	3
3		Renewable Energy Systems	EE	3	--	--	3
4		Elective – II	EL	3	--	--	3
5		Elective - III	EL	3	--	--	3
6		Linear & Digital IC Applications Laboratory	ES	--	--	2	1
7		Power Systems& Simulation Laboratory	EE	--	--	2	1
		Industrial Training /Skill Development Programmes / Research Project	Project	--	--	2	1
8		Project-I	Project			4	2
Total Credits				**15**	**0**	**10**	**20**

IV Year – II SEMESTER

S. No	Course Code	Subjects	Category	L	T	P	Credits
1		Power System Operation & Control	EE	3	--	--	3
2		Open Elective - II	OE	3	--	--	3
3		Elective - IV	EL	3	--	--	3
4		Project-II	Project	--	--	16	8
Total Credits				**09**		**16**	**17**

BS – Basic Sciences   **EE – Electrical Engineering**
HS – Humanity Sciences   **OE – Open Elective   Proj- Project**
ES – Engineering Sciences   **EL – Elective   MC–Mandatory Course**

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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

Elective – I:

1. Digital IC Applications
2. Communication Systems
3. Computer Networks
4. Internet of Things applications to Electrical Engineering
5. VLSI Design
6. Cloud Computing

Elective – II:

1. Utilization of Electrical Energy
2. Data Base Management System
3. Advanced Control Systems
4. Electrical Machine Design
5. Hybrid Electric Vehicles
6. Swayam Course

Elective – III:

1. Operating Systems
2. Neural Networks &Fuzzy Logic
3. High Voltage Engineering
4. Energy Auditing and Demand Side Management
5. Data Analytics with Python
6. Swayam Course

Elective – IV:

1. Electrical Distribution Systems
2. HVAC & DC Transmission
3. Flexible Alternating Current Transmission Systems
4. Power Quality
5. Smart Grid
6. Special Electrical Machines

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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

Open Electives offered by EEE Department for Other Branches(Except for EEE Branch)

Open Elective-I:

1. Renewable Energy Sources
2. Essentials of Analog and Digital Electronics
3. Electrical Estimation and Costing
4. Power Electronic Devices & Circuits
5. Fundamentals of Electrical Machines

Open Elective-II:

1. Measurements & Instrumentation
2. Fundamentals of Utilization of Electrical Energy
3. Concepts of Power System Engineering
4. Basics of Control Systems
5. Energy Audit

A Project report

On

Artificial Intelligence Robot

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

A.SUNIL	**157Z1A0401**
A.PRAMEELA	**157Z1Z0404**
A.CHANDRA VATHI	**157Z1A0405**
B.MALLIKARJUNA	**157Z1A0409**
C.NAGAMIAH	**157Z1A0410**

Under the esteemed Guidance of

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Assoc. Professor

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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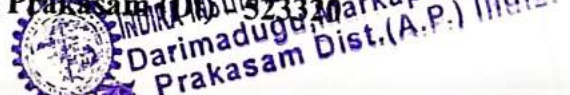
CERTIFICATE

This is to certify that the thesis entitled "**ARTIFICIAL INTELLIGENCE ROBOT**"that is being submittedby**A.SUNIL(157Z1A0401),A.PRAMEELA(157Z1A0404),A.CHANDRAVATH I(157Z1A0405),B.MALLIKARJUNA(157Z1A0409),C.NAGAMIAH (167Z1A0410)** in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

The results embodied in this project work have not been submitted to any other university or institute for the award of any degree.

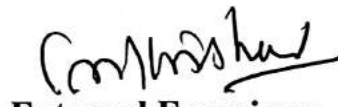**Internal Guide**

Y.Saraswathi ,M.Tech

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A Project report

On

Solar Power LED Street light

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

D.BEULA	**157Z1A0411**
D.PEDDA KULAI	**157Z1Z0414**
K.MALLIKARJUNA	**157Z1A0424**
K.R.TULASI	**157Z1A0428**
K.KALIMMAA	**157Z1A0431**
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This is to certify that the thesis entitled "**SOLAR POWER LED STREET LIGHT**"that is being submittedby**D.BEULA(157Z1A0411),D.PEDDAKULAI(157Z1A0414),K.MALLIKARJU NA(157Z1A0424),K.R.TULASI(157Z1A0428),K.KALIMMAA(157Z1A0431),M.LALLI KRISHNA(157Z1A0433)** in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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Assoc. Professor

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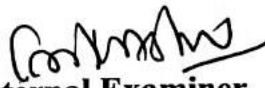Darimadugu,Markapur-523 316
Prakasam Dist.(A.P.) India.

A Project report

On

Spying Robot

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

M.UDAY KUMAR	157Z1A0436
N.GIRISH NAIK	157Z1Z0414
N.RUPA DEVI	157Z1A0439
P.SRUTHII	157Z1A0441
P.VENKATESWARI	157Z1A0422

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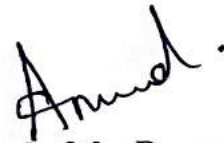
This is to certify that the thesis entitled "SPYING ROBOT"that is being submittedbyM.UDAY KUMAR(157Z1A0436),N.GIRISHNAIK(157Z1A0438),N.RUPADEVI(157Z1A0439),P. SRUTH(157Z1A0441),P.VENKATESWARI(157Z1A0422)in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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Professor

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A Project report

On

Solar Charger

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

P.NARESH	157Z1A0444
P.VENUGOPAL	157Z1Z0447
S.ARUNA	157Z1A0454
S.PAVAN KUMAR	157Z1A0455
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This is to certify that the thesis entitled "**SOLAR CHARGER**"that is being submittedby**P.NARRSH(157Z1A0444),P.VENUGOPAL(157Z1A0447),S.ARUNA(157Z1A0454),S.PAVAN KUMAR(157Z1A0455),V.CHANDRAKALA DEVI(157Z1A0460)**in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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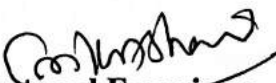**Internal Guide**

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A Project report

On

Metal Detector

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

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Y.NAVEEN	157Z1Z0463
M.SRIHARI	157Z1A0464
G.ANJANEYULU	157Z1A0465
B.MALLESH	167Z5A0401

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This is to certify that the thesis entitled "METAL DETECTOR" that is being submittedbyE.VENKATESH(157Z1A0462),Y.NAVEEN(157Z1A0463),M.SRIHARI(157 Z1A0464),G.ANJANEYULU (157Z1A0465),B.MALLESH(167Z5A0401)in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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A Project report

On

Forest Fire Detection

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

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B.SRINIVASULU	167Z1A0403
B.HIMA BINDU	167Z1A0404
B.PAVAN KALYAN	167Z1Z0405
CH.ARUNA	167Z1A0406

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This is to certify that the thesis entitled **"FOREST FIRE DETECTION"** that is being submittedby**B.NAVEENA(167Z1A0402).B.SRINIVASULU(167Z1A0403),B.HIMABIND U(167Z1A0404),B.PAVAN KALYAN(167Z1A0405),CH.ARUNA(167Z1A0406)** in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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Internal Guide

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A Project report

On

Automatic Light Control

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

D.JAYA RAMIREDDY BHARATHI	**167Z1A0407**
D.VEERA VASNTHA RAYUDU	**167Z1Z0408**
D.HARIKANTHA	**167Z1A0409**
G.TULASI	**167Z1A0411**
I.SPANDANA	**167Z1A0412**

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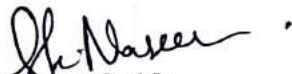(Approved by AICTE Affiliated to J N T UNIVERSITY, KAKINADA, A.P, INDIA)
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This is to certify that the thesis entitled "**AUTOMATIC LIGHT CONTROL**" that is being submittedby**D.JAYARAMIREDDYBHARATHI(167Z1A0407),D.VEERA VASANTHA RAYUDU(167Z1A0408),D.HARIKANTHA(167Z1A0409),G.TULASI(167Z1A0411),I.S PANDANA(167Z1A0412)** in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING inINDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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Sk.Wahid Basha ,M.Tech

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Head of the Department

DR.Rajiv kumar Anand,Ph.D

Professor

External Examiner`

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Prakasam Dist.(A.P.) India.

A Project report

On

Solar Tracking System

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

K.KULLAYAMMA	167Z1A0413
K.PARUSHA RAMUDU	167Z1Z0415
M.MADHU	167Z1A0416
MANJULA VENNELA	167Z1A0417
M.SRIKANTH REDDY	167Z1A0420

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CERTIFICATE

This is to certify that the thesis entitled "**SOLAR TRACKER SYSTEM**" that is being submittedby**K.KULLAYAMMA(167Z1A0413),K.PARUSHARAMUDU(167Z1A0415),M .MADHU(167Z1A0416),MANJULAVENNELA(167Z1A0417),M.SRIKANTHREDDY(1 67Z1A0420)** in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATIONENGINEERING inINDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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A Project report

On

Advanced Security System

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

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This is to certify that the thesis entitled "**ADVANCED SECURITY SYSTEM**" that is being submittedby**P.KIRAN(167Z1A0422),T.SIVANAGALAKSHMI(167Z1A0423),U.RADHA MMA(167Z1A0424),V.MOHAN(167Z1A0427),V.SURESH YADAV(167Z1A0428)** in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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A Project report

On

Automatic Intensity Control

Submitted in partial fulfillment of the requirement for the award of the degree of

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A Project report

On

Virtual reality -Based system for flood rescue Mnagement

Submitted in partial fulfillment of the requirement for the award of the degree of

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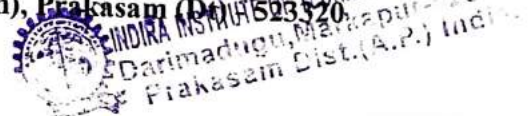
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This is to certify that the thesis entitled "VIRTUAL REALITY BASED SYSTEM FOR FLOOD RESCUE`MANAGEMENT"thatsubmittedbyE.VENKATESH(157Z1A0462),Y.NAVEEN(157Z1A0463),M. SRIHARI(157Z1A0464),G.ANJANEYULU (157Z1A0465),B.MALLESH(167Z5A0401)in the partial fulfillment for the award of the degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING in INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316 (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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A Project report

On

Vehicle-vehicle communication using LI-FI technology

Submitted in partial fulfillment of the requirement for the award of the degree of

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This is to certify that the thesis entitled "VEHICLE -VEHICLE COMMUNICATIOM USING LI-FI TECHNOLOGY"thatsubmittedbyC.SRAVANI(187Z1A0408),C.GEETHANJALI(187Z1A0409),D.VIJAY KUMAR(187Z1A0410),D.V.LAKSHMI (187Z1A0411),D.RAJENDRA KUMAR(187Z5A0412)in the partial fulfillment for the award of the degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING in   INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316 (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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A Project report

On

Driver state analysis using AI to avoid accidents

Submitted in partial fulfillment of the requirement for the award of the degree of

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IN

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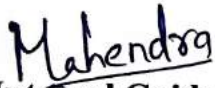Darimadugu (v), Markapur (m), Prakasam (Dt) - 523320
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A Project report

On

RASPBERRY PI BASED VEHICLE NUMBER PLATE RECOGNIZITION USING OCR

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

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A Project report

On

FIRE DETECTION AND PREVENTION SYSTEM USING MACHINE LEARNING

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

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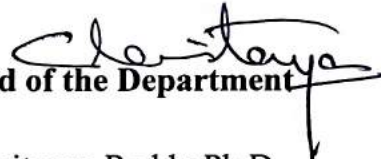Darimadugu (v), Markapur (m), Prakasam (Dt) - 523320

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A Project report

On

OIL SPILL DETECTION ON SEA SURFACE BY USING SENTINAL-1 SAR IMAGE

Submitted in partial fulfillment of the requirement for the award of the degree of

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IN

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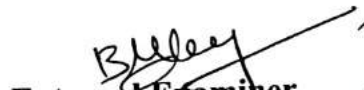
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A Project report

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DRIVE STATE ANALYSIS USING AI TO AVOID ACCIDENTS

Submitted in partial fulfillment of the requirement for the award of the degree of

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IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

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A Project report

On

SMART FARMING SYSTEM USING IOT FOR EFFECTIVE CROP GROWTH

Submitted in partial fulfillment of the requirement for the award of the degree of

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IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

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A Project report

On

MODELLING E-WASTE MANAGEMENT DATA IN SMART CITIES

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

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Darimadugu,Markapur-523316
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A Project report

On

HARD WARE ROOT OF TRUST FOR IOT SECURITY IN SMART HOME SYSYTEMS

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

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CH.THARUN KUMAR	**197Z1A0407**
G.PAVAN KUMAR	**197Z1A0408**
G.NAYAK	**197Z1A0409**
J.JYOTHI	**197Z1A0410**

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This is to certify that the thesis entitled "HARD WARE ROOT OF TRUST FOR IOT SECURITY IN SMART HOME SYSTEMS that's ubmittedby CH.MAHENDRA(197Z1A0406), CH.THARUN KUMAR(197Z1A0472),G.PAVANKUMAR(197Z1A0408),G.NAYAK(197Z1A0409),J.JYOTHI(197Z1A0 410)in the partial fulfillment for the award of the degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING in INDIRAINSTITUTE OF TECHNOLOGY AND SCIENCE MARKAPUR-523316 (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision

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A Project report

On

MULTI FUNCTIONAL BLIND STICK FOR VISUALLY IMPAIRED PEOPLE

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

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A Project report

On

REAL TIME WIRELESS EMBEDDED ELECTRONICS FOR SOILDER SECURITY

Submitted in partial fulfillment of the requirement for the award of the degree of

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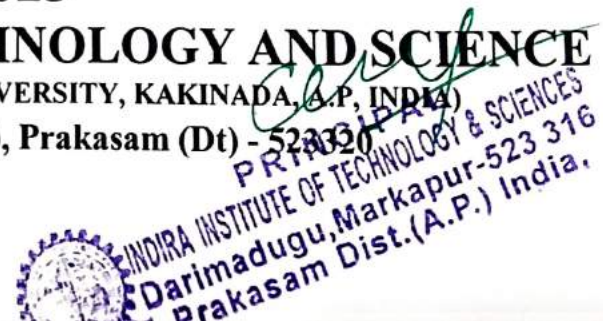Darimadugu (v), Markapur (m), Prakasam (Dt) - 523320
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A Project report

On

SMART DOOR USING BIOMETRIC NFC BAND AND OTP BASED METHODS

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

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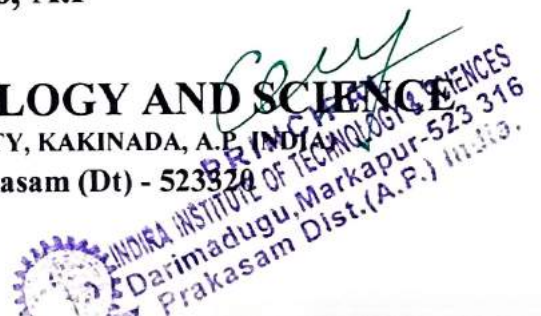## INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE
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A Project report

On

IOT BASED REAL-TIME REMOTE PATIENT MONITERING SYSTEM

Submitted in partial fulfillment of the requirement for the award of the degree of

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IN

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A Project report

On

IOT BASED WIRELESS SENSOR NETWORK FOR AIR POLLUTION MONITERING

Submitted in partial fulfillment of the requirement for the award of the degree of

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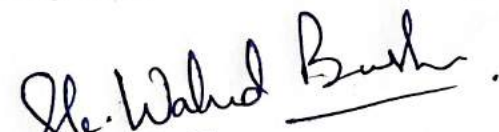## 2019-2023

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A Project report

On

Water Level Indicator

Submitted in partial fulfillment of the requirement for the award of the degree of

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IN

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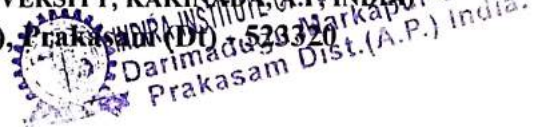Darimadugu (v), Markapur (m), Prakasam (Dt) - 523320

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A Project report

On

Smart Card Technology

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This is to certify that the thesis entitled "**SMART CARD TECHNOLOGY**" that is being submittedby**K.PRAVEENA(177Z1A0421),N.SHIRISHA(177Z1A0423),S.GOVINDU(177Z1A042 5),S.ANKI REDDY (177Z1A0426),** in the partial fulfillment for the award of the degree of Bachelor of Technology in **ELECTRONICS AND COMMUNICATION ENGINEERING** in **INDIRA INSTITUTE OF TECHNOLOGY AND SCIENCE, MARKAPUR-523316** (Affiliated to Jawaharlal Nehru Technological University, KAKINADA) is a record of bonafide work carried out by them under our guidance and supervision.

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A Project report

On

Railway Gate Control

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