The following are the syllabus copy as per Anna University Curriculam and experiential learning document

1.3.2

COURSES THAT INCLUDE EXPERIENTIAL LEARNING THROUGH PROJECT WORK/ FIELD WORK/ INTERNSHIP DURING 2022-2023

1.3.2 AVERAGE PERCENTAGE OF COURSES THAT INCLUDE EXPERIENTIAL LEARNING THROUGH PROJECT WORK/FIELD WORK/INTERNSHIP DURING 2022-2023

S.NO	Programme offering	Name of the course	Course Code	Project/ Field work/ Internship	Page No
1.	B.E-Computer Science & Engineering	Problem Solving and Python Programming	GE3151	Industrial Visit	3
2.	B.E-Computer Science & Engineering	Physics For Information Science	PH3256	Industrial Visit	20
3.	B.E-Computer Science & Engineering	Basic Electrical Electronics and Measurement Engineering	BE3251	Industrial Visit	37
4.	B.E-Computer Science & Engineering	Programming In C	CS3251	Industrial Visit	54
5.	B.E-Computer Science & Engineering	Digital Principles and Computer Organization	CS3351	Internship	71
6.	B.E-Computer Science & Engineering	Foundations of Data Science	CS3352	Field work	74
7.	B.E-Computer Science & Engineering	Data Structures	CS3301	Field work	77
8.	B.E-Computer Science & Engineering	Object Oriented Programming	CS3391	Internship	80
9.	B.E-Computer Science & Engineering	Theory Of Computation	CS3452	Field work	83
10.	B.E-Computer Science & Engineering	Artificial Intelligence and Machine Learning	CS3491	Project	86
11.	B.E-Computer Science & Engineering	Database Management Systems	CS3492	Project	92
12.	B.E-Computer Science & Engineering	Algorithms	CS3401	Field work	98
13.	B.E-Computer Science & Engineering	Introduction to Operating Systems	CS3451	Field work	101
14.	B.E-Computer Science & Engineering	Computer Networks	CS8591	Internship	104
15.	B.E-Computer Science & Engineering	Microprocessors and Microcontrollers	EC8691	Project	107
16.	B.E-Computer Science & Engineering	Theory of Computation	CS8501	Field work	113
17.	B.E-Computer Science & Engineering	Object Oriented Analysis and Design	CS8592	Field work	116

18.	B.E-Computer Science & Engineering	Internet Programming	CS8651	Field work	119
19.	B.E-Computer Science & Engineering	Artificial Intelligence	CS8691	Project	122
20.	B.E-Computer Science & Engineering	Mobile Computing	CS8601	Project	128
21.	B.E-Computer Science & Engineering	Compiler Design	CS8602	Internship	134
22.	B.E-Computer Science & Engineering	Distributed systems	CS8603	Field work	137
23.	B.E-Computer Science & Engineering	Cryptography and Network Security	CS8501	Project	139
24.	B.E-Computer Science & Engineering	Cloud Computing	CS8791	Project	145
25.	B.E-Computer Science & Engineering	Software Project Management	IT8075	Field work	151
26.	B.E-Computer Science & Engineering	Robotics	OIE751	Field work	154
27.	B.E-Computer Science & Engineering	Professional Ethics in Engineering	GE8076	Field work	157
28.	B.E-Computer Science & Engineering	Green Computing	CS8078	Internship	160
29.	B.E-Computer Science & Engineering	Project work	CS8811	Project	162

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GE3151 **PROBLEM SOLVING AND PYTHON PROGRAMMING** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To understand the basics of algorithmic problem solving.
- To learn to solve problems using Python conditionals and loops.
- To define Python functions and use function calls to solve problems.
- To use Python data structures - lists, tuples, dictionaries to represent complex data.
- To do input/output with files in Python.

UNIT I COMPUTATIONAL THINKING AND PROBLEM SOLVING 9

Fundamentals of Computing – Identification of Computational Problems -Algorithms, building blocks

ofalgorithms (statements, state, control flow, functions), notation (pseudo code, flow chart, programming language), algorithmic problem solving, simple strategies for developing algorithms (iteration, recursion). Illustrative problems: find minimum in a list, insert a card in a list of sorted cards, guess an integer number in a range, Towers of Hanoi.

UNIT II DATA TYPES, EXPRESSIONS, STATEMENTS 9

Python interpreter and interactive mode, debugging; values and types: int, float, boolean, string, a nd list; variables, expressions, statements, tuple assignment, precedence of operators, comments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distancebetween two points.

UNIT IIICONTROL FLOW, FUNCTIONS, STRINGS 9

Conditionals: Boolean values and operators, conditional (if), alternative (if-else),chained conditional (if- elif-else);Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters,

local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binarysearch.

UNIT IV LISTS, TUPLES, DICTIONARIES 9

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters;

Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods; advanced list processing - list comprehension; Illustrative programs: simple sorting, histogram, Students marks statement, Retail bill preparation.

UNIT V FILES, MODULES, PACKAGES 9

Files and exceptions: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count, copy file, Voter's age validation, Marks range validation (0-100).

TOTAL : 45 PERIODS

COURSE OUTCOMES:

Upon completion of the course, students will be able to

CO1: Develop algorithmic solutions to simple computational problems.

CO2: Develop and execute simple Python programs.

CO3: Write simple Python programs using conditionals and loops for solving problems.

CO4: Decompose a Python program into functions.

CO5: Represent compound data using Python lists, tuples, dictionaries etc.

CO6: Read and write data from/to files in Python programs.

TEXT BOOKS:

1. Allen B. Downey, "Think Python: How to Think like a Computer Scientist", 2nd Edition, O'Reilly Publishers, 2016.
2. Karl Beecher, "Computational Thinking: A Beginner's Guide to Problem Solving and Programming", 1st Edition, BCS Learning & Development Limited, 2017.

REFERENCES:

1. Paul Deitel and Harvey Deitel, "Python for Programmers", Pearson Education, 1st Edition, 2021.
2. G Venkatesh and Madhavan Mukund, "Computational Thinking: A Primer for Programmers and Data Scientists", 1st Edition, Notion Press, 2021.
3. John V Guttag, "Introduction to Computation and Programming Using Python: With Applications to Computational Modeling and Understanding Data", Third Edition, MIT Press, 2021
4. Eric Matthes, "Python Crash Course, A Hands - on Project Based Introduction to Programming", 2nd Edition, No Starch Press, 2019.
5. https://www.python.org/
6. Martin C. Brown, "Python: The Complete Reference", 4th Edition, Mc-Graw Hill, 2018.

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Industrial Visit to VEI Technologies, Chennai

PERMISSION LETTER

From

Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology,Natham,
Dindigul – 624 401.

To

The Administrative Office,
NPR Group of Institutions,
Natham,
Dindigul – 624 401.

Through Proper Channel

Sub: Requesting permission for Industrial visit – Reg.

Respected Sir,

I am writing to formally request permission for an industrial visit to VEI Technologies for our 1st Year students. The visit is scheduled to take place on two days, as outlined below:

I Batch - Departments: CSE A, CSE B, and EEE on 20.06.2023

II Batch - Departments: ECE, AI & DS, MECH and IT on 21.06.2023

We are planning for a total of 270 students from the 1st Year, consisting of 180 boys and 90 girls, accompanied by 6 staff members. The staff members accompanying the students are Dr. P.S. Satheesh Kumar, Prof/Physics, Dr. N. Kavitha, ASP/Physics, Dr. P. Rani, ASP/Maths, Dr. P. Shanmuga Priya, ASP/English, Dr. N. Prabakaran, ASP/Chemistry and Mrs. C. Yogitha, AP/Maths.

We assure you that all necessary arrangements regarding transportation, supervision, and safety measures will be diligently taken care of throughout the visit.

We kindly request your approval for this industrial visit, as it will significantly contribute to the academic and professional development of our students.We eagerly await your favorable response.

Yours Faithfully,

Natham,
12.06.2023

(Dr. P. S. Satheesh Kumar)

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
Natham, Dindigul Dist.

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Industrial Visit to VEI Technologies, Chennai

REQUISITION LETTER

From,
Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology, Natham,
Dindigul – 624 401.

To,
Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

Dear Sir,
Greetings!
I hope this letter finds you in good health and high spirits. I am writing on behalf of NPR College of Engineering and Technology, situated in Natham, Dindigul district. Our institution is dedicated to the personal and professional development of students from rural backgrounds, offering a range of UG and PG courses.

It has been a longstanding practice in our Science and Humanities Department to organize industrial visits for our students every semester, aiming to provide them with practical exposure and industry insights. In line with this, we have planned an industrial visit to VEI Technologies for our 270 first year students and 6 accompanying staff members. The visit is scheduled for two days, with two batches visiting on 20/6/23 and 21/6/23, respectively.
We assure you, sir, that our students will adhere strictly to safety protocols and will not disrupt your regular operations during their visit.

We humbly request your esteemed organization to grant us permission for this industrial visit. We would greatly appreciate if you could confirm the permission through a formal letter or email correspondence.

We look forward to the opportunity for our students to benefit from this valuable learning experience at VEI Technologies.

Natham,
12.06.23

Yours faithfully,

(Dr. P. S. Satheesh Kumar)

NPR COLLEGE OF ENGG. & TECHNOLOGY * NATHAM

Industrial Visit to VEI Technologies, Chennai

CONFIRMATION LETTER FROM INDUSTRY

Gmail

Inbox

info@veitechnologies.com Wed, JUNE 14,2023, 12.28 PM

To:

hodmathematicsnprcet@gmail.com

Dear Sir,

We are happy to give permission for the industrial visit to your wards in VEI Technologies, Chennai. Kindly remind us one day in advance for the visit schedule also send the original letter copy with your hand during the visit.

Thanks and Regards,

Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

BATCH-I STUDENT PARTICIPANTS LIST-I YEAR

Date: 20.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
1.	920822104001	Abarna T	CSE- A	Female
2.	920822104002	Adaikalaraj S	CSE- A	Male
3.	920822104003	Adhithya K	CSE- A	Male
4.	920822104004	Afzal Khan M	CSE- A	Male
5.	920822104005	Ahilesh V	CSE- A	Male
6.	920822104006	Ajay Prajan S	CSE- A	Male
7.	920822104007	Ajitha Carmel J	CSE- A	Female
8.	920822104008	Akash S	CSE- A	Male
9.	920822104009	Akshal R	CSE- A	Male
10.	920822104011	Alwin Kirubakaran Y	CSE- A	Male
11.	920822104012	Anusuya S	CSE- A	Female
12.	920822104013	Anwarsha K	CSE- A	Female
13.	920822104014	Arul Hariharan S	CSE- A	Male
14.	920822104015	Ashima Nishara D	CSE- A	Female
15.	920822104016	Asim Sumaiya J	CSE- A	Female
16.	920822104017	Aswanthwin Fried S	CSE- A	Male
17.	920822104018	Balamurugan D	CSE- A	Male
18.	920822104019	Bharath Kumar V	CSE- A	Male
19.	920822104020	Bismi Farhana A	CSE- A	Female
20.	920822104021	Cibi Raj C	CSE- A	Male
21.	920822104022	Deepadharshini G	CSE- A	Female
22.	920822104023	Ellin Arock Celcia J	CSE- A	Female
23.	920822104024	Giri Ganesh K	CSE- A	Male
24.	920822104025	Gokula Kannan T	CSE- A	Male
25.	920822104026	Gokula Praveen N	CSE- A	Male
26.	920822104027	Gowtham P	CSE- A	Male
27.	920822104028	Gowthavamoorthy S	CSE- A	Male
28.	920822104029	Hariharan D	CSE- A	Male
29.	920822104030	Indira J	CSE- A	Female
30.	920822104031	Iswarya K	CSE- A	Female
31.	920822104032	Janani Priyadharshini V	CSE- A	Female
32.	920822104033	Jawahar S	CSE- A	Male
33.	920822104034	Jeeviha S	CSE- A	Female
34.	920822104035	Jerald Reeganraj I	CSE- A	Male
35.	920822104036	Jeya Arthi S	CSE- A	Female
36.	920822104037	Jeyadeva M	CSE- A	Female

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Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
37.	920822104038	Joel Rajan	CSE- A	Male
38.	920822104039	Kalaiselvan A	CSE- A	Male
39.	920822104040	Kanthalarasi K	CSE- A	Female
40.	920822104041	Karthiga B	CSE- A	Female
41.	920822104042	Kishore P	CSE- A	Male
42.	920822104043	Kowsalya S	CSE- A	Female
43.	920822104044	Kumaresan S	CSE- A	Male
44.	920822104045	Leo Aandrew G	CSE- A	Male
45.	920822104046	Madhan P	CSE- A	Male
46.	920822104047	Mahalakshmi K	CSE- A	Female
47.	920822104048	Mahalakshmi S	CSE- A	Female
48.	920822104049	Mahasri M	CSE- A	Female
49.	920822104050	Mallesh T	CSE- A	Male
50.	920822104051	Manikandan R	CSE- A	Male
51.	920822104052	Marikumar G	CSE- A	Female
52.	920822104053	Marshal John Raj L	CSE- A	Male
53.	920822104054	Meenakshi K	CSE- A	Female
54.	920822104055	Mohamed Azardeen M	CSE- A	Male
55.	920822104056	Mohamed Faizal Khan A	CSE- A	Male
56.	920822104057	Mohamed Sayeef S	CSE- A	Male
57.	920822104058	Muthukrishnan V	CSE- A	Male
58.	920822104059	Muthu Mahalakshmi V	CSE- A	Female
59.	920822104060	Naga Arjun B	CSE- A	Male
60.	920822104061	Naveen J	CSE- A	Male
61.	920822104062	Naveena V	CSE- A	Female
62.	920822104063	Nevin Nehal R S	CSE- A	Male
63.	920822104064	Nirmala R	CSE- A	Female
64.	920822104065	Nishanth K	CSE- B	Male
65.	920822104066	Nithish R	CSE- B	Male
66.	920822104067	Nithish Manickam S	CSE- B	Male
67.	920822104068	Nivetha P	CSE- B	Female
68.	920822104069	Palanimurugan V	CSE- B	Male
69.	920822104070	Partheeban A	CSE- B	Male
70.	920822104071	Pavatharani S	CSE- B	Female
71.	920822104072	Perumal Kumar V	CSE- B	Male
72.	920822104073	Ponnalagar V	CSE- B	Male
73.	920822104074	Pooja Shree A	CSE- B	Female
74.	920822104075	Pooja Shri M	CSE- B	Female

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S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
75.	920822104076	Poornisha R	CSE- B	Female
76.	920822104077	Pradeepan M	CSE- B	Male
77.	920822104078	Pragatheeswaran A	CSE- B	Male
78.	920822104079	Praveenkumar S	CSE- B	Male
79.	920822104080	Priyadharshini G	CSE- B	Female
80.	920822104081	Priyadharshini R	CSE- B	Female
81.	920822104082	Rajamannar N G	CSE- B	Male
82.	920822104083	Rakesh V	CSE- B	Male
83.	920822104084	Ravikrishnan R	CSE- B	Male
84.	920822104085	Rexton George R	CSE- B	Male
85.	920822104086	Rohini T	CSE- B	Female
86.	920822104087	Rubinesh C	CSE- B	Male
87.	920822104088	Sabari Anandh M	CSE- B	Male
88.	920822104089	Sabura Shifana J	CSE- B	Female
89.	920822104090	Sakthivel P	CSE- B	Male
90.	920822104091	Sanjay T	CSE- B	Male
91.	920822104092	Sanjay Raj J	CSE- B	Male
92.	920822104093	Santhiya S	CSE- B	Female
93.	920822104094	Sarguna Gokul R	CSE- B	Male
94.	920822104095	Saru Malini R	CSE- B	Female
95.	920822104096	Sathish S	CSE- B	Male
96.	920822104097	Shalima S	CSE- B	Female
97.	920822104098	Shrini Prabu A	CSE- B	Male
98.	920822104099	Sivaraj Kumar M	CSE- B	Male
99.	920822104100	Sofiga R	CSE- B	Female
100	920822104101	Sona S	CSE- B	Female
101	920822104102	Sree Yogeswari S	CSE- B	Female
102	920822104103	Sri Kunguma Raja Surya V	CSE- B	Male
103	920822104104	Sri Prasath N K	CSE- B	Male
104	920822104105	Subash Rayan S	CSE- B	Male
105	920822104106	Subha Sri R	CSE- B	Female
106	920822104107	Sujithra B	CSE- B	Female
107	920822104108	Sulaika P	CSE- B	Female
108	920822104109	Surekha M	CSE- B	Female
109	920822104110	Suriya Prabha K	CSE- B	Female
110	920822104111	Surjith K	CSE- B	Male
111	920822104112	Syed Ali Fathima N	CSE- B	Female
112	920822104113	Tharini Priya J	CSE- B	Female

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S.No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113	920822104114	Veera Ramana M	CSE- B	Male
114	920822104115	Vibin Dipak K	CSE- B	Male
115	920822104116	Vignesh M	CSE- B	Male
116	920822104117	Vignesh R	CSE- B	Male
117	920822104118	Vijayalakshmi A	CSE- B	Female
118	920822104119	Vijayan S	CSE- B	Male
119	920822104120	Vimal Sanjay A	CSE- B	Male
120	920822104121	Visali S	CSE- B	Female
121	920822104122	Vishnupriya D	CSE- B	Female
122	920822104123	Viswa B	CSE- B	Male
123	920822104124	Yagavarman S	CSE- B	Male
124	920822104125	Yoganth M	CSE- B	Male
125	920822104126	Yohith Kumar Nagarajan	CSE- B	Male
126	920822105001	Abhin Krishna U V	EEE	Male
127	920822105002	Abirami P	EEE	Female
128	920822105003	Ajay S	EEE	Male
129	920822105004	Ariyadharshini B	EEE	Female
130	920822105005	Atheeswaran M	EEE	Male
131	920822105006	Chellan P	EEE	Male
132	920822105007	Deenadhayalan T	EEE	Male
133	920822105008	Dhanushkumar K	EEE	Male
134	920822105009	Dharani M	EEE	Female
135	920822105010	Dharani Daran M	EEE	Male
136	920822105011	Dhinesh Prasad S	EEE	Male
137	920822105012	Eswara Pandi R	EEE	Male
138	920822105013	Hari Haran G	EEE	Male
139	920822105014	Harini R	EEE	Female
140	920822105015	Kaja Mohaideen S	EEE	Male
141	920822105016	Karuppaiah C	EEE	Male
142	920822105017	Mohammed Hanif H	EEE	Male
143	920822105018	Nikeelash Bala M	EEE	Male
144	920822105019	Pandi Manikandan N	EEE	Male
145	920822105020	Premkumar K	EEE	Male
146	920822105021	Raghul Kanna S	EEE	Male
147	920822105022	Rajapandian R	EEE	Male
148	920822105023	Sakthi Vignesh S	EEE	Male

HOD-I Year
(Dr. P. S. Sathees Kumar)

Dr. J.SUNDARARAJAN, M.E., M.Tech., Ph.D.,
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Industrial Visit to VEI Technologies, Chennai

DEPARTMENT OF SCIENCE AND HUMANITIES

BATCH-II STUDENTS PARTICIPANTS LIST- I YEAR

Date: 21.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
1.	920822106001	Aajip S	ECE	Male
2.	920822106002	Archana A R	ECE	Female
3.	920822106003	Arunachalam R	ECE	Male
4.	920822106004	Arun Kumar S	ECE	Male
5.	920822106005	Athikundhan G	ECE	Male
6.	920822106006	Azhagu Selvam S	ECE	Male
7.	920822106007	Babitha N	ECE	Female
8.	920822106008	Balamurugan P	ECE	Male
9.	920822106009	Bala Sowndharya M	ECE	Male
10.	920822106010	Bazir Ahamed M	ECE	Male
11.	920822106011	Bhava Dharani S	ECE	Male
12.	920822106012	Dharshan V	ECE	Male
13.	920822106013	Divyadharshini M	ECE	Female
14.	920822106014	Divyadharshini U	ECE	Female
15.	920822106015	Geerthana T	ECE	Female
16.	920822106016	Giruthika R	ECE	Female
17.	920822106017	Gokulakrishnan P	ECE	Male
18.	920822106018	Gokul Krishnan R	ECE	Male
19.	920822106019	Hariharan S P	ECE	Male
20.	920822106020	Harimadesh S	ECE	Male
21.	920822106021	Hemalatha K	ECE	Female
22.	920822106022	Janagan A	ECE	Male
23.	920822106023	Janarthanan A S	ECE	Male
24.	920822106024	Jeeva T	ECE	Male
25.	920822106025	Jeeva Rexline A	ECE	Female
26.	920822106026	Jenifer R	ECE	Female
27.	920822106027	Jeyan James Raj A	ECE	Male
28.	920822106028	Jeyasri P	ECE	Female
29.	920822106029	Kevin Agath A	ECE	Male
30.	920822106030	Kohila K	ECE	Female
31.	920822106031	Lakshmi S	ECE	Female
32.	920822106032	Lalith Kishore M	ECE	Male
33.	920822106033	Lieyander A B	ECE	Male
34.	920822106034	Loganath S	ECE	Male
35.	920822106035	Mahesh Karthick M	ECE	Male
36.	920822106036	Maheswaran S	ECE	Male

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DEPARTMENT OF SCIENCE AND HUMANITIES
INDUSTRIAL VISIT TO VEI TECHNOLOGIES, CHENNAI

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
37.	920822106037	Mani N	ECE	Male
38.	920822106038	Maragathalakshmi B	ECE	Male
39.	920822106039	Mohamed Shameer S M	ECE	Male
40.	920822106040	Muraliprasanth A	ECE	Male
41.	920822106041	Preetha S	ECE	Female
42.	920822106042	Priya Dharshini S V	ECE	Female
43.	920822106043	Rishikesh K	ECE	Male
44.	920822106044	Ruthramoorthy M	ECE	Male
45.	920822106045	Sadhaa Sivam S	ECE	Male
46.	920822106046	Sakthivel N K	ECE	Male
47.	920822106047	Sanjay M	ECE	Male
48.	920822106048	Santhiya V	ECE	Female
49.	920822106049	Sarvesh T	ECE	Male
50.	920822106050	Sathan B	ECE	Male
51.	920822106051	Shivaramakrishnan N	ECE	Male
52.	920822106052	Sivanesan S	ECE	Male
53.	920822106053	Sivaranjini A	ECE	Female
54.	920822106054	Sri Mithra M	ECE	Male
55.	920822106055	Srinithiswari O G	ECE	Female
56.	920822106056	Tamilkodi K	ECE	Female
57.	920822106057	Thirumalainathan P	ECE	Male
58.	920822106058	Thrishma Bharathi G	ECE	Female
59.	920822106059	Varsha R	ECE	Female
60.	920822106060	Venkatesh K	ECE	Male
61.	920822106061	Vimalkumar K	ECE	Male
62.	920822106062	Vinoth P	ECE	Male
63.	920822106063	Viswanathan V	ECE	Male
64.	920822243001	Aaron S	AI&DS	Male
65.	920822243002	Abinaya Sree A	AI&DS	Female
66.	920822243003	Aishuwarya Dharshini V	AI&DS	Female
67.	920822243004	Akash S	AI&DS	Male
68.	920822243005	Alen Thomas	AI&DS	Female
69.	920822243006	Anandhapranesh P	AI&DS	Male
70.	920822243007	Aririthissh A M	AI&DS	Male
71.	920822243008	Arunkumar N	AI&DS	Male
72.	920822243009	Aswin Raj H	AI&DS	Male
73.	920822243010	Balaguru B	AI&DS	Male
74.	920822243011	Balavijay M	AI&DS	Male

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DEPARTMENT OF SCIENCE AND HUMANITIES
Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
75.	920822243012	Bavatharani K	AI&DS	Female
76.	920822243013	Bharath Bagavathi R	AI&DS	Male
77.	920822243014	Daranee Daran R	AI&DS	Male
78.	920822243015	Deepak Indirajith M C	AI&DS	Male
79.	920822243016	Gokulprasanna V	AI&DS	Male
80.	920822243017	Guru Hariprasath R	AI&DS	Male
81.	920822243018	Guruprasath M	AI&DS	Male
82.	920822243019	Issac Sunil	AI&DS	Male
83.	920822243020	James Allwin S J	AI&DS	Male
84.	920822243021	Janani S	AI&DS	Female
85.	920822243022	Jegatheesh M	AI&DS	Male
86.	920822243023	Jeyasurya S	AI&DS	Male
87.	920822243024	Joseph Boweenraj A	AI&DS	Male
88.	920822243025	Karthick J P	AI&DS	Male
89.	920822243026	Krisha C R	AI&DS	Female
90.	920822243027	Krithick P	AI&DS	Male
91.	920822243028	Lakshmana Perumal S	AI&DS	Male
92.	920822243029	Leena Sri S	AI&DS	Female
93.	920822243030	Loga Hariharan V G	AI&DS	Female
94.	920822243031	Logeshwaran S	AI&DS	Male
95.	920822243032	Mayil Vaganan R	AI&DS	Male
96.	920822243033	Mohamed Bisail M	AI&DS	Male
97.	920822243034	Mono Balaji D	AI&DS	Male
98.	920822243035	Nagarajan M	AI&DS	Male
99.	920822243036	Nanthagobalakrishnan M	AI&DS	Male
100.	920822243037	Niranjana S	AI&DS	Female
101.	920822243038	Padmesh M	AI&DS	Male
102.	920822243039	Prasanth J	AI&DS	Male
103.	920822243040	Prithiviraj R	AI&DS	Male
104.	920822205001	Aadharsh R D	IT	Male
105.	920822205002	Bhuvaneshwari S	IT	Female
106.	920822205003	Deepadharshini D	IT	Female
107.	920822205004	Divya D	IT	Female
108.	920822205005	Gowthamkishore V	IT	Male
109.	920822205006	Hari Haran K	IT	Male
110.	920822205007	Hari Haran T	IT	Male
111.	920822205008	Harini Devi B	IT	Female
112.	920822205009	Harshavarthan B	IT	Male

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Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113.	920822114001	Abdul Ajees A	MECH	Male
114.	920822114002	Alaguraja V	MECH	Male
115.	920822114003	Arvinth Nagarathinam B J	MECH	Male
116.	920822114004	Bala K	MECH	Male
117.	920822114005	Bala N	MECH	Male
118.	920822114015	Muthuvel S	MECH	Male
119.	920822114016	Nandhagopal C	MECH	Male
120.	920822114017	Naveen Kumar M	MECH	Male
121.	920822114018	Riswanth S	MECH	Male
122.	920822114019	Sabariganapathy S	MECH	Male

HOD- I Year
(Dr. P. S. Satheesh Kumar)

PRINCIPAL
Dr. J.SUNDARARAJAN,
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Principal
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Industrial Visit to VEI Technologies, Chennai

Feedback Summary

Sl.no.	Particulars	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
1	The place of visit is relevant tothe course/courses of the programme.	210	50	10	-	-	270
2	Purpose of the visit was explained in prior.	220	30	20	-	-	270
3	Travel plan was good and thejourney was comfortable.	230	30	-	10	-	270
4	Safety precautions were instructed before the field visitby the officials/Faculty	260	08	02	-	-	270
5	Faculty accompanied the students and explained in addition to the industry officials	200	50	20	-	-	270
6	The Faculty / Industry officials clarified the doubts raised by students during the visit.	250	15	05	-	-	270
7	The visit was useful to strengthen the technical knowledge gathered in lectures	250	16	04	-	-	270
8	Scope for doing project is available in the industry/plant	200	50	20	-	-	270
9	Opportunity is available for getting internship/ industrial training	190	60	20	-	-	270
10	The visit was well planned and organized	250	10	10	-	-	270

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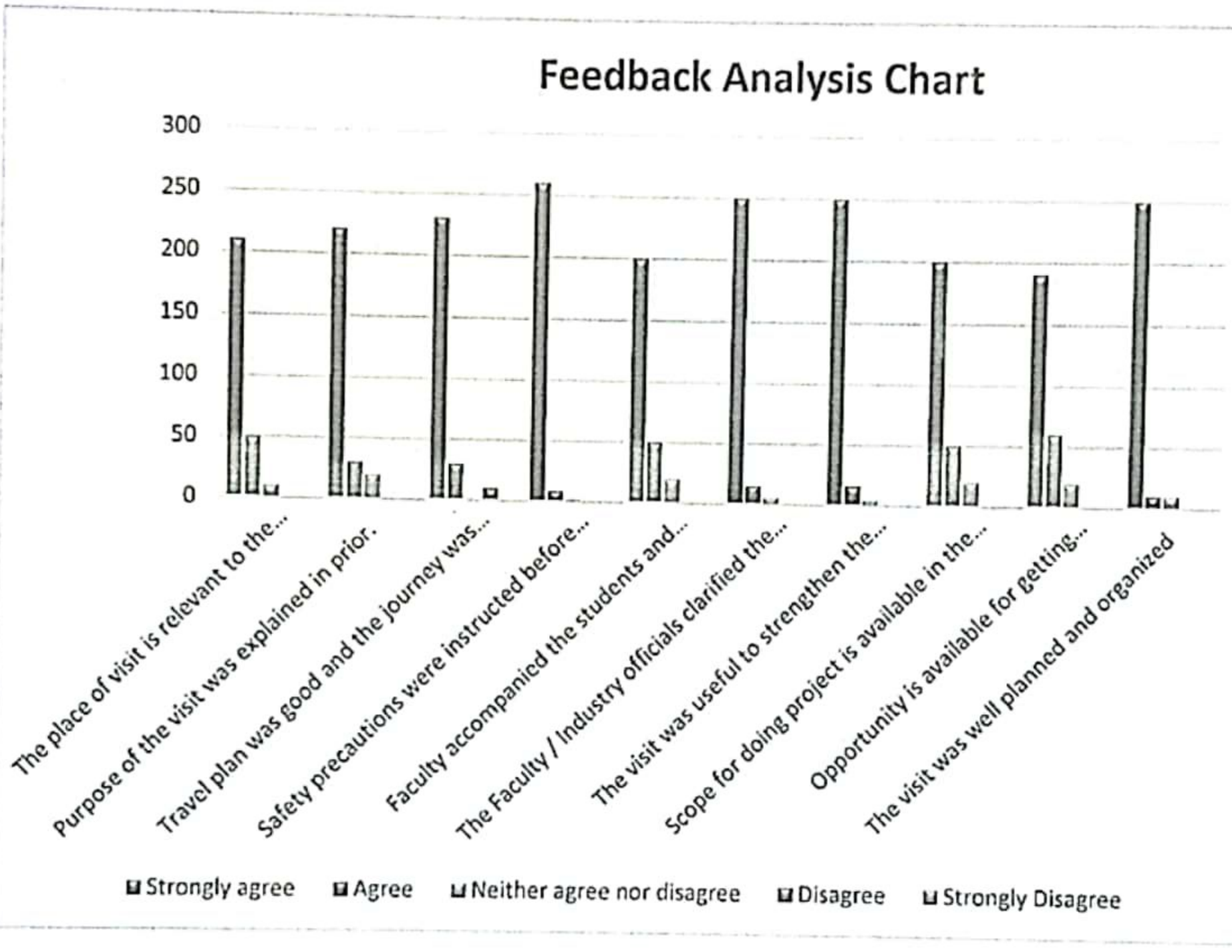
Industrial Visit to VEI Technologies, Chennai

Feedback Analysis



HOD-I YEAR
Dr. P. S. Satheesh Kumar

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Industrial Visit to VEI Technologies, Chennai

PHOTO GALLERY

Date:20/6/23 & Date: 21/6/23

I Year students are standing in front of VEI Technologies

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

Summary Report

Date: June 20th, 2023 (I Batch) and June 21st, 2023 (II Batch)
Venue: VEI Technologies, Poonamallee, Chennai

Purpose: The industrial visit to VEI Technologies aimed to offer students from NPRCET a practical insight into industry operations and various departments. It provided an opportunity for 270 first-year students (90 girls and 180 boys) in two batches, accompanied by six staff members, to gain valuable knowledge about the functioning of an R&D company specializing in web development and software solutions.

Schedule:

- **Departure:** Students were picked up from NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 9:30 pm and traveled by bus to Chennai.
- **Arrival:** The group reached Chennai at 6:00 am the following day.
- **Visit to VEI Technologies:** From 9:00 am to 12:00 pm, students toured the facility, gaining insights into the company's various departments and operations.
- **Meeting with Director:** Students had the opportunity to meet Mr. Babu Ezhilavan, the Director of VEI Technologies, who provided information about the company's services, including web application development, website designing, e-commerce solutions, and more. They also learned about value-added courses offered by the company in areas such as IoT, Java and Python.
- **Leisure Activities:** After lunch at a nearby restaurant from 12:00 p.m to 1:00 p.m, students visited the planetarium from 1:00 p.m to 3:00 p.m, followed by a visit to the zoo from 3:00 p.m to 5:00 p.m, and a trip to the beach from 5:00 p.m to 6:30 p.m.
- **Return:** The students began their return journey at 8:00 p.m and reached NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 5:00 a.m the next day.

Outcome: The industrial visit provided students with a practical understanding of industry operations and exposed them to various aspects of web development and software solutions. The interaction with staff and the Director of VEI Technologies enhanced the students' knowledge about the industry and its potential career paths. Additionally, the inclusion of leisure activities ensured a well-rounded experience for the students.

Conclusion: The visit to VEI Technologies was a valuable learning experience for the students, allowing them to bridge the gap between theoretical knowledge and practical application in the industry. The well-organized itinerary balanced educational insights with recreational activities, making it a memorable and enriching trip for all participants.

On completion of this industrial visit, the following Pos and PSOs were enabled.

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
√				√		√		√	√	√	√			

FACULTY CO-ORDINATORS
(Dr. P. Rani, ASP/Maths)

HOD
Dr. P S Satheesh Kumar

IQAC

Dr. J.SUNDARARAJAN, B.E.,M.Tech., Ph.D.,
PRINCIPAL
Principal
NPR College of Engineering & Technology
Natham

PH3256 **PHYSICS FOR INFORMATION SCIENCE**

L	T	P	C
3	0	0	3

COURSE OBJECTIVES:

- To make the students understand the importance in studying electrical properties of materials.
- To enable the students to gain knowledge in semiconductor physics
- To instill knowledge on magnetic properties of materials
- To establish a sound grasp of knowledge on different optical properties of materials, optical displays and applications
- To inculcate an idea of significance of nano structures, quantum confinement, ensuing nano device applications and quantum computing.

UNIT I ELECTRICAL PROPERTIES OF MATERIALS 9

Classical free electron theory - Expression for electrical conductivity – Thermal conductivity, expression - Wiedemann-Franz law – Success and failures - electrons in metals – Particle in a three dimensional box – degenerate states – Fermi- Dirac statistics – Density of energy states – Electron in periodic potential – Energy bands in solids – tight binding approximation - Electron effective mass – concept of hole.

UNIT II SEMICONDUCTOR PHYSICS 9

Intrinsic Semiconductors – Energy band diagram – direct and indirect band gap semiconductors – Carrier concentration in intrinsic semiconductors – extrinsic semiconductors - Carrier concentration in N-type & P-type semiconductors – Variation of carrier concentration with temperature – variation of Fermi level with temperature and impurity concentration – Carrier transport in Semiconductor: random motion, drift, mobility and diffusion – Hall effect and devices
– Ohmic contacts – Schottky diode.

UNIT III MAGNETIC PROPERTIES OF MATERIALS 9

Magnetic dipole moment – atomic magnetic moments- magnetic permeability and susceptibility - Magnetic material classification: diamagnetism – paramagnetism – ferromagnetism – antiferromagnetism – ferrimagnetism – Ferromagnetism: origin and exchange interaction-saturation magnetization and Curie temperature – Domain Theory- M versus H behaviour – Hard and soft magnetic materials – examples and uses– Magnetic principle in computer data storage –
Magnetic hard disc (GMR sensor).

UNIT IV OPTICAL PROPERTIES OF MATERIALS 9

Classification of optical materials – carrier generation and recombination processes - Absorption emission and scattering of light in metals, insulators and semiconductors (concepts only) - photo currentin a P-N diode – solar cell - LED – Organic LED – Laser diodes – Optical data storage techniques.

UNIT V NANO DEVICES AND QUANTUM COMPUTING 9

Introduction - quantum confinement – quantum structures: quantum wells, wires and dots – band gap of nanomaterials. Tunneling – Single electron phenomena: Coulomb blockade - resonant-tunneling diode – single electron transistor – quantum cellular automata - Quantum system for information processing - quantum states – classical bits – quantum bits or qubits –

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Principal
N.P.R. College of Engineering & Technology
Natham, Dindigul (Dt) - 624 401.

CNOT gate - multiple qubits – Bloch sphere – quantum gates – advantage of quantum computing over classical computing.

TOTAL :45 PERIODS

COURSE OUTCOMES:

At the end of the course, the students should be able to

- gain knowledge on classical and quantum electron theories, and energy band structures
- acquire knowledge on basics of semiconductor physics and its applications in various devices
- get knowledge on magnetic properties of materials and their applications in data storage,
- have the necessary understanding on the functioning of optical materials for optoelectronics
- understand the basics of quantum structures and their applications and basics of quantum computing

TEXT BOOKS:

1. Jasprit Singh, "Semiconductor Devices: Basic Principles", Wiley (Indian Edition), 2007.
2. S.O. Kasap, Principles of Electronic Materials and Devices, McGraw-Hill Education (Indian Edition), 2020.
3. Parag K. Lala, Quantum Computing: A Beginner's Introduction, McGraw-Hill Education (Indian Edition), 2020

REFERENCES:

1. Charles Kittel, Introduction to Solid State Physics, Wiley India Edition, 2019.
2. Y.B.Band and Y.Avishai, Quantum Mechanics with Applications to Nanotechnology and Information Science, Academic Press, 2013.
3. V.V.Mitin, V.A. Kochelap and M.A.Stroscio, Introduction to Nanoelectronics, Cambridge Univ.Press, 2008.
4. G.W. Hanson, Fundamentals of Nanoelectronics, Pearson Education (Indian Edition) 2009
5. B.Rogers, J.Adams and S.Pennathur, Nanotechnology: Understanding Small Systems, CRC Press, 2014

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Industrial Visit to VEI Technologies, Chennai

PERMISSION LETTER

From

Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology,Natham,
Dindigul – 624 401.

To

The Administrative Office,
NPR Group of Institutions,
Natham,
Dindigul – 624 401.

Through Proper Channel

Sub: Requesting permission for Industrial visit – Reg.

Respected Sir,

I am writing to formally request permission for an industrial visit to VEI Technologies for our 1st Year students. The visit is scheduled to take place on two days, as outlined below:

I Batch - Departments: CSE A, CSE B, and EEE on 20.06.2023

II Batch - Departments: ECE, AI & DS, MECH and IT on 21.06.2023

We are planning for a total of 270 students from the 1st Year, consisting of 180 boys and 90 girls, accompanied by 6 staff members. The staff members accompanying the students are Dr. P.S. Satheesh Kumar, Prof/Physics, Dr. N. Kavitha, ASP/Physics, Dr. P. Rani, ASP/Maths, Dr. P. Shanmuga Priya, ASP/English, Dr. N. Prabakaran, ASP/Chemistry and Mrs. C. Yogitha, AP/Maths.

We assure you that all necessary arrangements regarding transportation, supervision, and safety measures will be diligently taken care of throughout the visit.

We kindly request your approval for this industrial visit, as it will significantly contribute to the academic and professional development of our students.We eagerly await your favorable response.

Yours Faithfully,

Natham,
12.06.2023

(Dr. P. S. Satheesh Kumar)

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
Natham, Dindigul Dist.

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Industrial Visit to VEI Technologies, Chennai

REQUISITION LETTER

From,
Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology, Natham,
Dindigul – 624 401.

To,
Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

Dear Sir,
Greetings!
I hope this letter finds you in good health and high spirits. I am writing on behalf of NPR College of Engineering and Technology, situated in Natham, Dindigul district. Our institution is dedicated to the personal and professional development of students from rural backgrounds, offering a range of UG and PG courses.

It has been a longstanding practice in our Science and Humanities Department to organize industrial visits for our students every semester, aiming to provide them with practical exposure and industry insights. In line with this, we have planned an industrial visit to VEI Technologies for our 270 first year students and 6 accompanying staff members. The visit is scheduled for two days, with two batches visiting on 20/6/23 and 21/6/23, respectively.
We assure you, sir, that our students will adhere strictly to safety protocols and will not disrupt your regular operations during their visit.

We humbly request your esteemed organization to grant us permission for this industrial visit. We would greatly appreciate if you could confirm the permission through a formal letter or email correspondence.

We look forward to the opportunity for our students to benefit from this valuable learning experience at VEI Technologies.

Natham,
12.06.23

Yours faithfully,

(Dr. P. S. Satheesh Kumar)

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Industrial Visit to VEI Technologies, Chennai

CONFIRMATION LETTER FROM INDUSTRY

Gmail

Inbox

info@veitechnologies.com Wed, JUNE 14,2023, 12.28 PM

To:

hodmathematicsnprcet@gmail.com

Dear Sir,

We are happy to give permission for the industrial visit to your wards in VEI Technologies, Chennai. Kindly remind us one day in advance for the visit schedule also send the original letter copy with your hand during the visit.

Thanks and Regards,

Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

BATCH-I STUDENT PARTICIPANTS LIST-I YEAR

Date: 20.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
1.	920822104001	Abarna T	CSE- A	Female
2.	920822104002	Adaikalaraj S	CSE- A	Male
3.	920822104003	Adhithya K	CSE- A	Male
4.	920822104004	Afzal Khan M	CSE- A	Male
5.	920822104005	Ahilesh V	CSE- A	Male
6.	920822104006	Ajay Prajan S	CSE- A	Male
7.	920822104007	Ajitha Carmel J	CSE- A	Female
8.	920822104008	Akash S	CSE- A	Male
9.	920822104009	Akshal R	CSE- A	Male
10.	920822104011	Alwin Kirubakaran Y	CSE- A	Male
11.	920822104012	Anusuya S	CSE- A	Female
12.	920822104013	Anwarsha K	CSE- A	Female
13.	920822104014	Arul Hariharan S	CSE- A	Male
14.	920822104015	Ashima Nishara D	CSE- A	Female
15.	920822104016	Asim Sumaiya J	CSE- A	Female
16.	920822104017	Aswanthwin Fried S	CSE- A	Male
17.	920822104018	Balamurugan D	CSE- A	Male
18.	920822104019	Bharath Kumar V	CSE- A	Male
19.	920822104020	Bismi Farhana A	CSE- A	Female
20.	920822104021	Cibi Raj C	CSE- A	Male
21.	920822104022	Deepadharshini G	CSE- A	Female
22.	920822104023	Ellin Arock Celcia J	CSE- A	Female
23.	920822104024	Giri Ganesh K	CSE- A	Male
24.	920822104025	Gokula Kannan T	CSE- A	Male
25.	920822104026	Gokula Praveen N	CSE- A	Male
26.	920822104027	Gowtham P	CSE- A	Male
27.	920822104028	Gowthavamoorthy S	CSE- A	Male
28.	920822104029	Hariharan D	CSE- A	Male
29.	920822104030	Indira J	CSE- A	Female
30.	920822104031	Iswarya K	CSE- A	Female
31.	920822104032	Janani Priyadharshini V	CSE- A	Female
32.	920822104033	Jawahar S	CSE- A	Male
33.	920822104034	Jeeviha S	CSE- A	Female
34.	920822104035	Jerald Reeganraj I	CSE- A	Male
35.	920822104036	Jeya Arthi S	CSE- A	Female
36.	920822104037	Jeyadeva M	CSE- A	Female

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DEPARTMENT OF SCIENCE AND HUMANITIES
Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
37.	920822104038	Joel Rajan	CSE- A	Male
38.	920822104039	Kalaiselvan A	CSE- A	Male
39.	920822104040	Kanthalarasi K	CSE- A	Female
40.	920822104041	Karthiga B	CSE- A	Female
41.	920822104042	Kishore P	CSE- A	Male
42.	920822104043	Kowsalya S	CSE- A	Female
43.	920822104044	Kumaresan S	CSE- A	Male
44.	920822104045	Leo Aandrew G	CSE- A	Male
45.	920822104046	Madhan P	CSE- A	Male
46.	920822104047	Mahalakshmi K	CSE- A	Female
47.	920822104048	Mahalakshmi S	CSE- A	Female
48.	920822104049	Mahasri M	CSE- A	Female
49.	920822104050	Mallesh T	CSE- A	Male
50.	920822104051	Manikandan R	CSE- A	Male
51.	920822104052	Marikumar G	CSE- A	Female
52.	920822104053	Marshal John Raj L	CSE- A	Male
53.	920822104054	Meenakshi K	CSE- A	Female
54.	920822104055	Mohamed Azardeen M	CSE- A	Male
55.	920822104056	Mohamed Faizal Khan A	CSE- A	Male
56.	920822104057	Mohamed Sayeef S	CSE- A	Male
57.	920822104058	Muthukrishnan V	CSE- A	Male
58.	920822104059	Muthu Mahalakshmi V	CSE- A	Female
59.	920822104060	Naga Arjun B	CSE- A	Male
60.	920822104061	Naveen J	CSE- A	Male
61.	920822104062	Naveena V	CSE- A	Female
62.	920822104063	Nevin Nehal R S	CSE- A	Male
63.	920822104064	Nirmala R	CSE- A	Female
64.	920822104065	Nishanth K	CSE- B	Male
65.	920822104066	Nithish R	CSE- B	Male
66.	920822104067	Nithish Manickam S	CSE- B	Male
67.	920822104068	Nivetha P	CSE- B	Female
68.	920822104069	Palanimurugan V	CSE- B	Male
69.	920822104070	Partheeban A	CSE- B	Male
70.	920822104071	Pavatharani S	CSE- B	Female
71.	920822104072	Perumal Kumar V	CSE- B	Male
72.	920822104073	Ponnalagar V	CSE- B	Male
73.	920822104074	Pooja Shree A	CSE- B	Female
74.	920822104075	Pooja Shri M	CSE- B	Female

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S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
75.	920822104076	Poornisha R	CSE- B	Female
76.	920822104077	Pradeepan M	CSE- B	Male
77.	920822104078	Pragatheeswaran A	CSE- B	Male
78.	920822104079	Praveenkumar S	CSE- B	Male
79.	920822104080	Priyadharshini G	CSE- B	Female
80.	920822104081	Priyadharshini R	CSE- B	Female
81.	920822104082	Rajamannar N G	CSE- B	Male
82.	920822104083	Rakesh V	CSE- B	Male
83.	920822104084	Ravikrishnan R	CSE- B	Male
84.	920822104085	Rexton George R	CSE- B	Male
85.	920822104086	Rohini T	CSE- B	Female
86.	920822104087	Rubinesh C	CSE- B	Male
87.	920822104088	Sabari Anandh M	CSE- B	Male
88.	920822104089	Sabura Shifana J	CSE- B	Female
89.	920822104090	Sakthivel P	CSE- B	Male
90.	920822104091	Sanjay T	CSE- B	Male
91.	920822104092	Sanjay Raj J	CSE- B	Male
92.	920822104093	Santhiya S	CSE- B	Female
93.	920822104094	Sarguna Gokul R	CSE- B	Male
94.	920822104095	Saru Malini R	CSE- B	Female
95.	920822104096	Sathish S	CSE- B	Male
96.	920822104097	Shalima S	CSE- B	Female
97.	920822104098	Shrini Prabu A	CSE- B	Male
98.	920822104099	Sivaraj Kumar M	CSE- B	Male
99.	920822104100	Sofiga R	CSE- B	Female
100	920822104101	Sona S	CSE- B	Female
101	920822104102	Sree Yogeswari S	CSE- B	Female
102	920822104103	Sri Kunguma Raja Surya V	CSE- B	Male
103	920822104104	Sri Prasath N K	CSE- B	Male
104	920822104105	Subash Rayan S	CSE- B	Male
105	920822104106	Subha Sri R	CSE- B	Female
106	920822104107	Sujithra B	CSE- B	Female
107	920822104108	Sulaika P	CSE- B	Female
108	920822104109	Surekha M	CSE- B	Female
109	920822104110	Suriya Prabha K	CSE- B	Female
110	920822104111	Surjith K	CSE- B	Male
111	920822104112	Syed Ali Fathima N	CSE- B	Female
112	920822104113	Tharini Priya J	CSE- B	Female

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S.No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113	920822104114	Veera Ramana M	CSE- B	Male
114	920822104115	Vibin Dipak K	CSE- B	Male
115	920822104116	Vignesh M	CSE- B	Male
116	920822104117	Vignesh R	CSE- B	Male
117	920822104118	Vijayalakshmi A	CSE- B	Female
118	920822104119	Vijayan S	CSE- B	Male
119	920822104120	Vimal Sanjay A	CSE- B	Male
120	920822104121	Visali S	CSE- B	Female
121	920822104122	Vishnupriya D	CSE- B	Female
122	920822104123	Viswa B	CSE- B	Male
123	920822104124	Yagavarman S	CSE- B	Male
124	920822104125	Yoganth M	CSE- B	Male
125	920822104126	Yohith Kumar Nagarajan	CSE- B	Male
126	920822105001	Abhin Krishna U V	EEE	Male
127	920822105002	Abirami P	EEE	Female
128	920822105003	Ajay S	EEE	Male
129	920822105004	Ariyadharshini B	EEE	Female
130	920822105005	Atheeswaran M	EEE	Male
131	920822105006	Chellan P	EEE	Male
132	920822105007	Deenadhayalan T	EEE	Male
133	920822105008	Dhanushkumar K	EEE	Male
134	920822105009	Dharani M	EEE	Female
135	920822105010	Dharani Daran M	EEE	Male
136	920822105011	Dhinesh Prasad S	EEE	Male
137	920822105012	Eswara Pandi R	EEE	Male
138	920822105013	Hari Haran G	EEE	Male
139	920822105014	Harini R	EEE	Female
140	920822105015	Kaja Mohaideen S	EEE	Male
141	920822105016	Karuppaiah C	EEE	Male
142	920822105017	Mohammed Hanif H	EEE	Male
143	920822105018	Nikeelash Bala M	EEE	Male
144	920822105019	Pandi Manikandan N	EEE	Male
145	920822105020	Premkumar K	EEE	Male
146	920822105021	Raghul Kanna S	EEE	Male
147	920822105022	Rajapandian R	EEE	Male
148	920822105023	Sakthi Vignesh S	EEE	Male

HOD-I Year
(Dr. P. S. Sathees Kumar)

Dr. J.SUNDARARAJAN, M.E., M.Tech., Ph.D.,
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BATCH-II STUDENTS PARTICIPANTS LIST- I YEAR

Date: 21.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
1.	920822106001	Aajip S	ECE	Male
2.	920822106002	Archana A R	ECE	Female
3.	920822106003	Arunachalam R	ECE	Male
4.	920822106004	Arun Kumar S	ECE	Male
5.	920822106005	Athikundhan G	ECE	Male
6.	920822106006	Azhagu Selvam S	ECE	Male
7.	920822106007	Babitha N	ECE	Female
8.	920822106008	Balamurugan P	ECE	Male
9.	920822106009	Bala Sowndharya M	ECE	Male
10.	920822106010	Bazir Ahamed M	ECE	Male
11.	920822106011	Bhava Dharani S	ECE	Male
12.	920822106012	Dharshan V	ECE	Male
13.	920822106013	Divyadharshini M	ECE	Female
14.	920822106014	Divyadharshini U	ECE	Female
15.	920822106015	Geerthana T	ECE	Female
16.	920822106016	Giruthika R	ECE	Female
17.	920822106017	Gokulakrishnan P	ECE	Male
18.	920822106018	Gokul Krishnan R	ECE	Male
19.	920822106019	Hariharan S P	ECE	Male
20.	920822106020	Harimadesh S	ECE	Male
21.	920822106021	Hemalatha K	ECE	Female
22.	920822106022	Janagan A	ECE	Male
23.	920822106023	Janarthanan A S	ECE	Male
24.	920822106024	Jeeva T	ECE	Male
25.	920822106025	Jeeva Rexline A	ECE	Female
26.	920822106026	Jenifer R	ECE	Female
27.	920822106027	Jeyan James Raj A	ECE	Male
28.	920822106028	Jeyasri P	ECE	Female
29.	920822106029	Kevin Agath A	ECE	Male
30.	920822106030	Kohila K	ECE	Female
31.	920822106031	Lakshmi S	ECE	Female
32.	920822106032	Lalith Kishore M	ECE	Male
33.	920822106033	Lieyander A B	ECE	Male
34.	920822106034	Loganath S	ECE	Male
35.	920822106035	Mahesh Karthick M	ECE	Male
36.	920822106036	Maheswaran S	ECE	Male

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INDUSTRIAL VISIT TO VEI TECHNOLOGIES, CHENNAI

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
37.	920822106037	Mani N	ECE	Male
38.	920822106038	Maragathalakshmi B	ECE	Male
39.	920822106039	Mohamed Shameer S M	ECE	Male
40.	920822106040	Muraliprasanth A	ECE	Male
41.	920822106041	Preetha S	ECE	Female
42.	920822106042	Priya Dharshini S V	ECE	Female
43.	920822106043	Rishikesh K	ECE	Male
44.	920822106044	Ruthramoorthy M	ECE	Male
45.	920822106045	Sadhaa Sivam S	ECE	Male
46.	920822106046	Sakthivel N K	ECE	Male
47.	920822106047	Sanjay M	ECE	Male
48.	920822106048	Santhiya V	ECE	Female
49.	920822106049	Sarvesh T	ECE	Male
50.	920822106050	Sathan B	ECE	Male
51.	920822106051	Shivaramakrishnan N	ECE	Male
52.	920822106052	Sivanesan S	ECE	Male
53.	920822106053	Sivaranjini A	ECE	Female
54.	920822106054	Sri Mithra M	ECE	Male
55.	920822106055	Srinithiswari O G	ECE	Female
56.	920822106056	Tamilkodi K	ECE	Female
57.	920822106057	Thirumalainathan P	ECE	Male
58.	920822106058	Thrishma Bharathi G	ECE	Female
59.	920822106059	Varsha R	ECE	Female
60.	920822106060	Venkatesh K	ECE	Male
61.	920822106061	Vimalkumar K	ECE	Male
62.	920822106062	Vinoth P	ECE	Male
63.	920822106063	Viswanathan V	ECE	Male
64.	920822243001	Aaron S	AI&DS	Male
65.	920822243002	Abinaya Sree A	AI&DS	Female
66.	920822243003	Aishuwarya Dharshini V	AI&DS	Female
67.	920822243004	Akash S	AI&DS	Male
68.	920822243005	Alen Thomas	AI&DS	Female
69.	920822243006	Anandhapranesh P	AI&DS	Male
70.	920822243007	Aririthissh A M	AI&DS	Male
71.	920822243008	Arunkumar N	AI&DS	Male
72.	920822243009	Aswin Raj H	AI&DS	Male
73.	920822243010	Balaguru B	AI&DS	Male
74.	920822243011	Balavijay M	AI&DS	Male

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Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
75.	920822243012	Bavatharani K	AI&DS	Female
76.	920822243013	Bharath Bagavathi R	AI&DS	Male
77.	920822243014	Daranee Daran R	AI&DS	Male
78.	920822243015	Deepak Indirajith M C	AI&DS	Male
79.	920822243016	Gokulprasanna V	AI&DS	Male
80.	920822243017	Guru Hariprasath R	AI&DS	Male
81.	920822243018	Guruprasath M	AI&DS	Male
82.	920822243019	Issac Sunil	AI&DS	Male
83.	920822243020	James Allwin S J	AI&DS	Male
84.	920822243021	Janani S	AI&DS	Female
85.	920822243022	Jegatheesh M	AI&DS	Male
86.	920822243023	Jeyasurya S	AI&DS	Male
87.	920822243024	Joseph Boweenraj A	AI&DS	Male
88.	920822243025	Karthick J P	AI&DS	Male
89.	920822243026	Krisha C R	AI&DS	Female
90.	920822243027	Krithick P	AI&DS	Male
91.	920822243028	Lakshmana Perumal S	AI&DS	Male
92.	920822243029	Leena Sri S	AI&DS	Female
93.	920822243030	Loga Hariharan V G	AI&DS	Female
94.	920822243031	Logeshwaran S	AI&DS	Male
95.	920822243032	Mayil Vaganan R	AI&DS	Male
96.	920822243033	Mohamed Bisail M	AI&DS	Male
97.	920822243034	Mono Balaji D	AI&DS	Male
98.	920822243035	Nagarajan M	AI&DS	Male
99.	920822243036	Nanthagobalakrishnan M	AI&DS	Male
100.	920822243037	Niranjana S	AI&DS	Female
101.	920822243038	Padmesh M	AI&DS	Male
102.	920822243039	Prasanth J	AI&DS	Male
103.	920822243040	Prithiviraj R	AI&DS	Male
104.	920822205001	Aadharsh R D	IT	Male
105.	920822205002	Bhuvaneshwari S	IT	Female
106.	920822205003	Deepadharshini D	IT	Female
107.	920822205004	Divya D	IT	Female
108.	920822205005	Gowthamkishore V	IT	Male
109.	920822205006	Hari Haran K	IT	Male
110.	920822205007	Hari Haran T	IT	Male
111.	920822205008	Harini Devi B	IT	Female
112.	920822205009	Harshavarthan B	IT	Male

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Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113.	920822114001	Abdul Ajees A	MECH	Male
114.	920822114002	Alaguraja V	MECH	Male
115.	920822114003	Arvinth Nagarathinam B J	MECH	Male
116.	920822114004	Bala K	MECH	Male
117.	920822114005	Bala N	MECH	Male
118.	920822114015	Muthuvel S	MECH	Male
119.	920822114016	Nandhagopal C	MECH	Male
120.	920822114017	Naveen Kumar M	MECH	Male
121.	920822114018	Riswanth S	MECH	Male
122.	920822114019	Sabariganapathy S	MECH	Male

HOD- I Year
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Industrial Visit to VEI Technologies, Chennai

Feedback Summary

Sl.no.	Particulars	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
1	The place of visit is relevant tothe course/courses of the programme.	210	50	10	-	-	270
2	Purpose of the visit was explained in prior.	220	30	20	-	-	270
3	Travel plan was good and thejourney was comfortable.	230	30	-	10	-	270
4	Safety precautions were instructed before the field visitby the officials/Faculty	260	08	02	-	-	270
5	Faculty accompanied the students and explained in addition to the industry officials	200	50	20	-	-	270
6	The Faculty / Industry officials clarified the doubts raised by students during the visit.	250	15	05	-	-	270
7	The visit was useful to strengthen the technical knowledge gathered in lectures	250	16	04	-	-	270
8	Scope for doing project is available in the industry/plant	200	50	20	-	-	270
9	Opportunity is available for getting internship/ industrial training	190	60	20	-	-	270
10	The visit was well planned and organized	250	10	10	-	-	270

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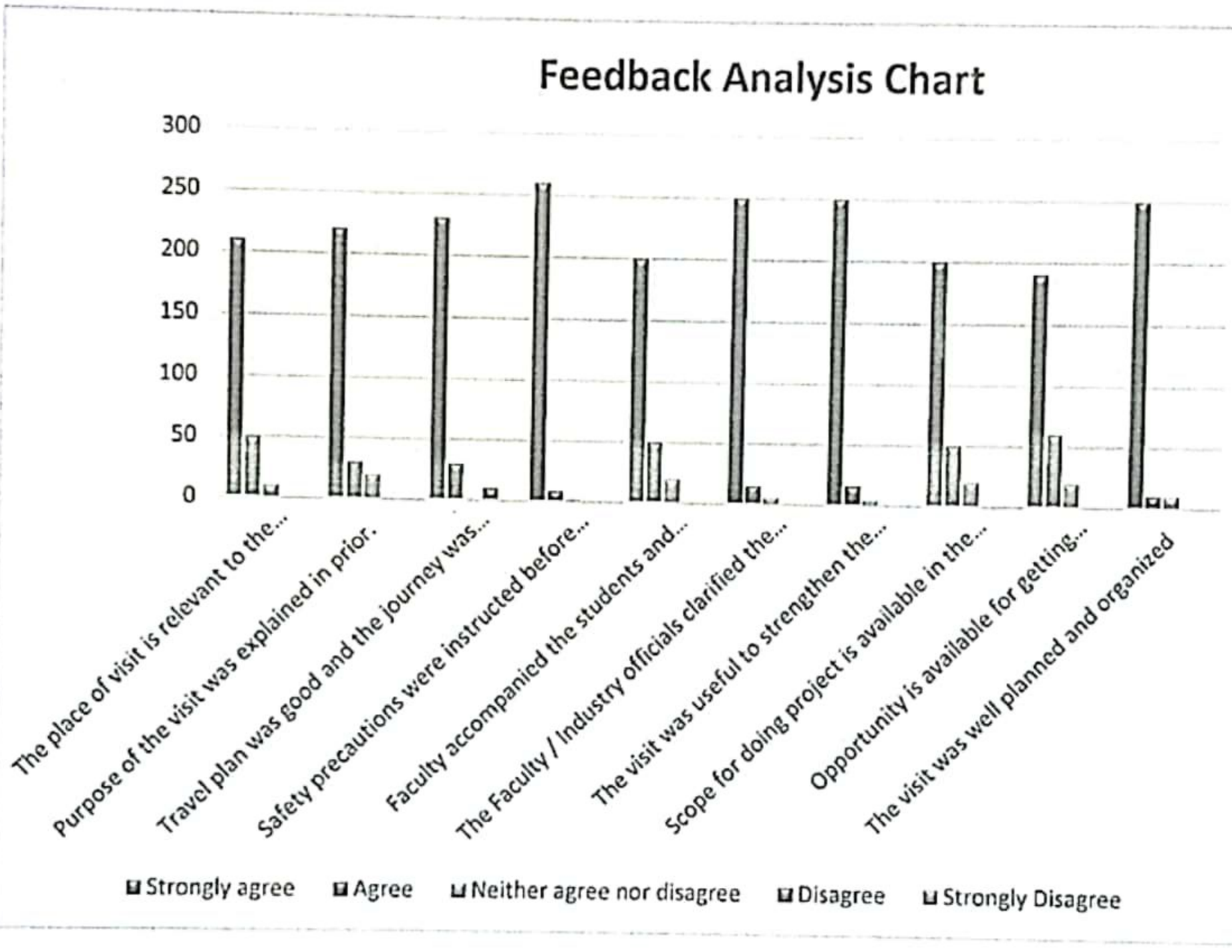
Industrial Visit to VEI Technologies, Chennai

Feedback Analysis



HOD-I YEAR
Dr. P. S. Satheesh Kumar

IQAC

PRINCIPAL
Dr. J. SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
Natham, Dindigul (Dt) - 624 401.

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

PHOTO GALLERY

Date:20/6/23 & Date: 21/6/23

I Year students are standing in front of VEI Technologies

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

Summary Report

Date: June 20th, 2023 (I Batch) and June 21st, 2023 (II Batch)
Venue: VEI Technologies, Poonamallee, Chennai

Purpose: The industrial visit to VEI Technologies aimed to offer students from NPRCET a practical insight into industry operations and various departments. It provided an opportunity for 270 first-year students (90 girls and 180 boys) in two batches, accompanied by six staff members, to gain valuable knowledge about the functioning of an R&D company specializing in web development and software solutions.

Schedule:

- **Departure:** Students were picked up from NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 9:30 pm and traveled by bus to Chennai.
- **Arrival:** The group reached Chennai at 6:00 am the following day.
- **Visit to VEI Technologies:** From 9:00 am to 12:00 pm, students toured the facility, gaining insights into the company's various departments and operations.
- **Meeting with Director:** Students had the opportunity to meet Mr. Babu Ezhilavan, the Director of VEI Technologies, who provided information about the company's services, including web application development, website designing, e-commerce solutions, and more. They also learned about value-added courses offered by the company in areas such as IoT, Java and Python.
- **Leisure Activities:** After lunch at a nearby restaurant from 12:00 p.m to 1:00 p.m, students visited the planetarium from 1:00 p.m to 3:00 p.m, followed by a visit to the zoo from 3:00 p.m to 5:00 p.m, and a trip to the beach from 5:00 p.m to 6:30 p.m.
- **Return:** The students began their return journey at 8:00 p.m and reached NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 5:00 a.m the next day.

Outcome: The industrial visit provided students with a practical understanding of industry operations and exposed them to various aspects of web development and software solutions. The interaction with staff and the Director of VEI Technologies enhanced the students' knowledge about the industry and its potential career paths. Additionally, the inclusion of leisure activities ensured a well-rounded experience for the students.

Conclusion: The visit to VEI Technologies was a valuable learning experience for the students, allowing them to bridge the gap between theoretical knowledge and practical application in the industry. The well-organized itinerary balanced educational insights with recreational activities, making it a memorable and enriching trip for all participants.

On completion of this industrial visit, the following Pos and PSOs were enabled.

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
√				√		√		√	√	√	√			

FACULTY CO-ORDINATORS
(Dr. P. Rani, ASP/Maths)

HOD
Dr. P S Satheesh Kumar

IQAC

Dr. J.SUNDARARAJAN, B.E.,M.Tech., Ph.D.,
PRINCIPAL
Principal
NPR College of Engineering & Technology
Natham

BE3251 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To introduce the basics of electric circuits and analysis
- To impart knowledge in the basics of working principles and application of electricalmachines
- To introduce analog devices and their characteristics
- To educate on the fundamental concepts of digital electronics
- To introduce the functional elements and working of measuring instruments

UNIT IELECTRICAL CIRCUITS **9**

DC Circuits: Circuit Components: Conductor, Resistor, Inductor, Capacitor – Ohm's Law - Kirchhoff's Laws -Independent and Dependent Sources – Simple problems- Nodal Analysis, Mesh analysis with independent sources only (Steady state)

Introduction to AC Circuits and Parameters: Waveforms, Average value, RMS Value, Instantaneous power, real power, reactive power and apparent power, power factor – Steady state analysis of RLC circuits (Simple problems only)

UNIT II ELECTRICAL MACHINES **9**

Construction and Working principle- DC Separately and Self excited Generators, EMF equation, Types and Applications. Working Principle of DC motors, Torque Equation, Types and Applications. Construction, Working principle and Applications of Transformer, Three phase Alternator, Synchronous motor and Three Phase Induction Motor.

UNIT III ANALOG ELECTRONICS **9**

Resistor, Inductor and Capacitor in Electronic Circuits- Semiconductor Materials: Silicon &Germanium – PN Junction Diodes, Zener Diode –Characteristics Applications – Bipolar Junction Transistor-Biasing,JFET, SCR, MOSFET,IGBT – Types, I-V Characteristics and Applications, Rectifier and Inverters

UNIT IV DIGITAL ELECTRONICS **9**

Review of number systems, binary codes, error detection and correction codes, Combinational logic - representation of logic functions-SOP and POS forms, K-map representations - minimization using K maps (Simple Problems only).

UNIT V MEASUREMENTS AND INSTRUMENTATION **9**

Functional elements of an instrument, Standards and calibration, Operating Principle, types - Moving Coil and Moving Iron meters, Measurement of three phase power, Energy Meter, Instrument Transformers-CT and PT, DSO- Block diagram- Data acquisition.

TOTAL: 45 PERIODS

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
Nathan, Dindigul (Dt) - 624 401.

COURSE OUTCOMES:

After completing this course, the students will be able to

CO1: Compute the electric circuit parameters for simple problems

CO2: Explain the working principle and applications of electrical machines

CO3: Analyze the characteristics of analog electronic devices

CO4: Explain the basic concepts of digital electronics

CO5: Explain the operating principles of measuring instruments

TEXT BOOKS:

1. Kothari DP and I.J Nagrath, "Basic Electrical and Electronics Engineering", Second Edition,McGraw Hill Education, 2020
2. S.K.Bhattacharya "Basic Electrical and Electronics Engineering", Pearson Education, SecondEdition, 2017.
3. Sedha R.S., "A textbook book of Applied Electronics", S. Chand & Co., 2008
4. James A .Svoboda, Richard C. Dorf, "Dorf's Introduction to Electric Circuits", Wiley, 2018.
5. A.K. Sawhney, Puneet Sawhney 'A Course in Electrical & Electronic Measurements & Instrumentation', Dhanpat Rai and Co, 2015.

REFERENCES:

1. Kothari DP and I.J Nagrath, "Basic Electrical Engineering", Fourth Edition, McGraw Hill Education, 2019.
2. Thomas L. Floyd, 'Digital Fundamentals', 11th Edition, Pearson Education, 2017.
3. Albert Malvino, David Bates, 'Electronic Principles, McGraw Hill Education; 7th edition, 2017.
4. Mahmood Nahvi and Joseph A. Edminister, "Electric Circuits", Schaum' Outline Series, McGraw Hill, 2002.
5. H.S. Kalsi, 'Electronic Instrumentation', Tata McGraw-Hill, New Delhi, 2010

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Industrial Visit to VEI Technologies, Chennai

PERMISSION LETTER

From

Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology,Natham,
Dindigul – 624 401.

To

The Administrative Office,
NPR Group of Institutions,
Natham,
Dindigul – 624 401.

Through Proper Channel

Sub: Requesting permission for Industrial visit – Reg.

Respected Sir,

I am writing to formally request permission for an industrial visit to VEI Technologies for our 1st Year students. The visit is scheduled to take place on two days, as outlined below:

I Batch - Departments: CSE A, CSE B, and EEE on 20.06.2023

II Batch - Departments: ECE, AI & DS, MECH and IT on 21.06.2023

We are planning for a total of 270 students from the 1st Year, consisting of 180 boys and 90 girls, accompanied by 6 staff members. The staff members accompanying the students are Dr. P.S. Satheesh Kumar, Prof/Physics, Dr. N. Kavitha, ASP/Physics, Dr. P. Rani, ASP/Maths, Dr. P. Shanmuga Priya, ASP/English, Dr. N. Prabakaran, ASP/Chemistry and Mrs. C. Yogitha, AP/Maths.

We assure you that all necessary arrangements regarding transportation, supervision, and safety measures will be diligently taken care of throughout the visit.

We kindly request your approval for this industrial visit, as it will significantly contribute to the academic and professional development of our students.We eagerly await your favorable response.

Yours Faithfully,

Natham,
12.06.2023

(Dr. P. S. Satheesh Kumar)

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
Natham, Dindigul Dist.

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Industrial Visit to VEI Technologies, Chennai

REQUISITION LETTER

From,
Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology, Natham,
Dindigul – 624 401.

To,
Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

Dear Sir,
Greetings!
I hope this letter finds you in good health and high spirits. I am writing on behalf of NPR College of Engineering and Technology, situated in Natham, Dindigul district. Our institution is dedicated to the personal and professional development of students from rural backgrounds, offering a range of UG and PG courses.

It has been a longstanding practice in our Science and Humanities Department to organize industrial visits for our students every semester, aiming to provide them with practical exposure and industry insights. In line with this, we have planned an industrial visit to VEI Technologies for our 270 first year students and 6 accompanying staff members. The visit is scheduled for two days, with two batches visiting on 20/6/23 and 21/6/23, respectively.
We assure you, sir, that our students will adhere strictly to safety protocols and will not disrupt your regular operations during their visit.

We humbly request your esteemed organization to grant us permission for this industrial visit. We would greatly appreciate if you could confirm the permission through a formal letter or email correspondence.

We look forward to the opportunity for our students to benefit from this valuable learning experience at VEI Technologies.

Natham,
12.06.23

Yours faithfully,

(Dr. P. S. Satheesh Kumar)

NPR COLLEGE OF ENGG. & TECHNOLOGY * NATHAM

Industrial Visit to VEI Technologies, Chennai

CONFIRMATION LETTER FROM INDUSTRY

Gmail

Inbox

info@veitechnologies.com Wed, JUNE 14,2023, 12.28 PM

To:

hodmathematicsnprcet@gmail.com

Dear Sir,

We are happy to give permission for the industrial visit to your wards in VEI Technologies, Chennai. Kindly remind us one day in advance for the visit schedule also send the original letter copy with your hand during the visit.

Thanks and Regards,

Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

BATCH-I STUDENT PARTICIPANTS LIST-I YEAR

Date: 20.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
1.	920822104001	Abarna T	CSE- A	Female
2.	920822104002	Adaikalaraj S	CSE- A	Male
3.	920822104003	Adhithya K	CSE- A	Male
4.	920822104004	Afzal Khan M	CSE- A	Male
5.	920822104005	Ahilesh V	CSE- A	Male
6.	920822104006	Ajay Prajan S	CSE- A	Male
7.	920822104007	Ajitha Carmel J	CSE- A	Female
8.	920822104008	Akash S	CSE- A	Male
9.	920822104009	Akshal R	CSE- A	Male
10.	920822104011	Alwin Kirubakaran Y	CSE- A	Male
11.	920822104012	Anusuya S	CSE- A	Female
12.	920822104013	Anwarsha K	CSE- A	Female
13.	920822104014	Arul Hariharan S	CSE- A	Male
14.	920822104015	Ashima Nishara D	CSE- A	Female
15.	920822104016	Asim Sumaiya J	CSE- A	Female
16.	920822104017	Aswanthwin Fried S	CSE- A	Male
17.	920822104018	Balamurugan D	CSE- A	Male
18.	920822104019	Bharath Kumar V	CSE- A	Male
19.	920822104020	Bismi Farhana A	CSE- A	Female
20.	920822104021	Cibi Raj C	CSE- A	Male
21.	920822104022	Deepadharshini G	CSE- A	Female
22.	920822104023	Ellin Arock Celcia J	CSE- A	Female
23.	920822104024	Giri Ganesh K	CSE- A	Male
24.	920822104025	Gokula Kannan T	CSE- A	Male
25.	920822104026	Gokula Praveen N	CSE- A	Male
26.	920822104027	Gowtham P	CSE- A	Male
27.	920822104028	Gowthavamoorthy S	CSE- A	Male
28.	920822104029	Hariharan D	CSE- A	Male
29.	920822104030	Indira J	CSE- A	Female
30.	920822104031	Iswarya K	CSE- A	Female
31.	920822104032	Janani Priyadharshini V	CSE- A	Female
32.	920822104033	Jawahar S	CSE- A	Male
33.	920822104034	Jeeviha S	CSE- A	Female
34.	920822104035	Jerald Reeganraj I	CSE- A	Male
35.	920822104036	Jeya Arthi S	CSE- A	Female
36.	920822104037	Jeyadeva M	CSE- A	Female

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S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
37.	920822104038	Joel Rajan	CSE- A	Male
38.	920822104039	Kalaiselvan A	CSE- A	Male
39.	920822104040	Kanthalarasi K	CSE- A	Female
40.	920822104041	Karthiga B	CSE- A	Female
41.	920822104042	Kishore P	CSE- A	Male
42.	920822104043	Kowsalya S	CSE- A	Female
43.	920822104044	Kumaresan S	CSE- A	Male
44.	920822104045	Leo Aandrew G	CSE- A	Male
45.	920822104046	Madhan P	CSE- A	Male
46.	920822104047	Mahalakshmi K	CSE- A	Female
47.	920822104048	Mahalakshmi S	CSE- A	Female
48.	920822104049	Mahasri M	CSE- A	Female
49.	920822104050	Mallesh T	CSE- A	Male
50.	920822104051	Manikandan R	CSE- A	Male
51.	920822104052	Marikumar G	CSE- A	Female
52.	920822104053	Marshal John Raj L	CSE- A	Male
53.	920822104054	Meenakshi K	CSE- A	Female
54.	920822104055	Mohamed Azardeen M	CSE- A	Male
55.	920822104056	Mohamed Faizal Khan A	CSE- A	Male
56.	920822104057	Mohamed Sayeef S	CSE- A	Male
57.	920822104058	Muthukrishnan V	CSE- A	Male
58.	920822104059	Muthu Mahalakshmi V	CSE- A	Female
59.	920822104060	Naga Arjun B	CSE- A	Male
60.	920822104061	Naveen J	CSE- A	Male
61.	920822104062	Naveena V	CSE- A	Female
62.	920822104063	Nevin Nehal R S	CSE- A	Male
63.	920822104064	Nirmala R	CSE- A	Female
64.	920822104065	Nishanth K	CSE- B	Male
65.	920822104066	Nithish R	CSE- B	Male
66.	920822104067	Nithish Manickam S	CSE- B	Male
67.	920822104068	Nivetha P	CSE- B	Female
68.	920822104069	Palanimurugan V	CSE- B	Male
69.	920822104070	Partheeban A	CSE- B	Male
70.	920822104071	Pavatharani S	CSE- B	Female
71.	920822104072	Perumal Kumar V	CSE- B	Male
72.	920822104073	Ponnalagar V	CSE- B	Male
73.	920822104074	Pooja Shree A	CSE- B	Female
74.	920822104075	Pooja Shri M	CSE- B	Female

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Industrial Visit to VEI Technologies,Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
75.	920822104076	Poornisha R	CSE- B	Female
76.	920822104077	Pradeepan M	CSE- B	Male
77.	920822104078	Pragatheeswaran A	CSE- B	Male
78.	920822104079	Praveenkumar S	CSE- B	Male
79.	920822104080	Priyadharshini G	CSE- B	Female
80.	920822104081	Priyadharshini R	CSE- B	Female
81.	920822104082	Rajamannar N G	CSE- B	Male
82.	920822104083	Rakesh V	CSE- B	Male
83.	920822104084	Ravikrishnan R	CSE- B	Male
84.	920822104085	Rexton George R	CSE- B	Male
85.	920822104086	Rohini T	CSE- B	Female
86.	920822104087	Rubinesh C	CSE- B	Male
87.	920822104088	Sabari Anandh M	CSE- B	Male
88.	920822104089	Sabura Shifana J	CSE- B	Female
89.	920822104090	Sakthivel P	CSE- B	Male
90.	920822104091	Sanjay T	CSE- B	Male
91.	920822104092	Sanjay Raj J	CSE- B	Male
92.	920822104093	Santhiya S	CSE- B	Female
93.	920822104094	Sarguna Gokul R	CSE- B	Male
94.	920822104095	Saru Malini R	CSE- B	Female
95.	920822104096	Sathish S	CSE- B	Male
96.	920822104097	Shalima S	CSE- B	Female
97.	920822104098	Shrini Prabu A	CSE- B	Male
98.	920822104099	Sivaraj Kumar M	CSE- B	Male
99.	920822104100	Sofiga R	CSE- B	Female
100	920822104101	Sona S	CSE- B	Female
101	920822104102	Sree Yogeswari S	CSE- B	Female
102	920822104103	Sri Kunguma Raja Surya V	CSE- B	Male
103	920822104104	Sri Prasath N K	CSE- B	Male
104	920822104105	Subash Rayan S	CSE- B	Male
105	920822104106	Subha Sri R	CSE- B	Female
106	920822104107	Sujithra B	CSE- B	Female
107	920822104108	Sulaika P	CSE- B	Female
108	920822104109	Surekha M	CSE- B	Female
109	920822104110	Suriya Prabha K	CSE- B	Female
110	920822104111	Surjith K	CSE- B	Male
111	920822104112	Syed Ali Fathima N	CSE- B	Female
112	920822104113	Tharini Priya J	CSE- B	Female

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S.No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113	920822104114	Veera Ramana M	CSE- B	Male
114	920822104115	Vibin Dipak K	CSE- B	Male
115	920822104116	Vignesh M	CSE- B	Male
116	920822104117	Vignesh R	CSE- B	Male
117	920822104118	Vijayalakshmi A	CSE- B	Female
118	920822104119	Vijayan S	CSE- B	Male
119	920822104120	Vimal Sanjay A	CSE- B	Male
120	920822104121	Visali S	CSE- B	Female
121	920822104122	Vishnupriya D	CSE- B	Female
122	920822104123	Viswa B	CSE- B	Male
123	920822104124	Yagavarman S	CSE- B	Male
124	920822104125	Yoganth M	CSE- B	Male
125	920822104126	Yohith Kumar Nagarajan	CSE- B	Male
126	920822105001	Abhin Krishna U V	EEE	Male
127	920822105002	Abirami P	EEE	Female
128	920822105003	Ajay S	EEE	Male
129	920822105004	Ariyadharshini B	EEE	Female
130	920822105005	Atheeswaran M	EEE	Male
131	920822105006	Chellan P	EEE	Male
132	920822105007	Deenadhayalan T	EEE	Male
133	920822105008	Dhanushkumar K	EEE	Male
134	920822105009	Dharani M	EEE	Female
135	920822105010	Dharani Daran M	EEE	Male
136	920822105011	Dhinesh Prasad S	EEE	Male
137	920822105012	Eswara Pandi R	EEE	Male
138	920822105013	Hari Haran G	EEE	Male
139	920822105014	Harini R	EEE	Female
140	920822105015	Kaja Mohaideen S	EEE	Male
141	920822105016	Karuppaiah C	EEE	Male
142	920822105017	Mohammed Hanif H	EEE	Male
143	920822105018	Nikeelash Bala M	EEE	Male
144	920822105019	Pandi Manikandan N	EEE	Male
145	920822105020	Premkumar K	EEE	Male
146	920822105021	Raghul Kanna S	EEE	Male
147	920822105022	Rajapandian R	EEE	Male
148	920822105023	Sakthi Vignesh S	EEE	Male

HOD-I Year
(Dr. P. S. Sathees Kumar)

Dr. J.SUNDARARAJAN, M.E., M.Tech., Ph.D.,
PRINCIPAL
N.P.R. College of Engineering & Technology

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Industrial Visit to VEI Technologies, Chennai

DEPARTMENT OF SCIENCE AND HUMANITIES

BATCH-II STUDENTS PARTICIPANTS LIST- I YEAR

Date: 21.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
1.	920822106001	Aajip S	ECE	Male
2.	920822106002	Archana A R	ECE	Female
3.	920822106003	Arunachalam R	ECE	Male
4.	920822106004	Arun Kumar S	ECE	Male
5.	920822106005	Athikundhan G	ECE	Male
6.	920822106006	Azhagu Selvam S	ECE	Male
7.	920822106007	Babitha N	ECE	Female
8.	920822106008	Balamurugan P	ECE	Male
9.	920822106009	Bala Sowndharya M	ECE	Male
10.	920822106010	Bazir Ahamed M	ECE	Male
11.	920822106011	Bhava Dharani S	ECE	Male
12.	920822106012	Dharshan V	ECE	Male
13.	920822106013	Divyadharshini M	ECE	Female
14.	920822106014	Divyadharshini U	ECE	Female
15.	920822106015	Geerthana T	ECE	Female
16.	920822106016	Giruthika R	ECE	Female
17.	920822106017	Gokulakrishnan P	ECE	Male
18.	920822106018	Gokul Krishnan R	ECE	Male
19.	920822106019	Hariharan S P	ECE	Male
20.	920822106020	Harimadesh S	ECE	Male
21.	920822106021	Hemalatha K	ECE	Female
22.	920822106022	Janagan A	ECE	Male
23.	920822106023	Janarthanan A S	ECE	Male
24.	920822106024	Jeeva T	ECE	Male
25.	920822106025	Jeeva Rexline A	ECE	Female
26.	920822106026	Jenifer R	ECE	Female
27.	920822106027	Jeyan James Raj A	ECE	Male
28.	920822106028	Jeyasri P	ECE	Female
29.	920822106029	Kevin Agath A	ECE	Male
30.	920822106030	Kohila K	ECE	Female
31.	920822106031	Lakshmi S	ECE	Female
32.	920822106032	Lalith Kishore M	ECE	Male
33.	920822106033	Lieyander A B	ECE	Male
34.	920822106034	Loganath S	ECE	Male
35.	920822106035	Mahesh Karthick M	ECE	Male
36.	920822106036	Maheswaran S	ECE	Male

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DEPARTMENT OF SCIENCE AND HUMANITIES
INDUSTRIAL VISIT TO VEI TECHNOLOGIES, CHENNAI

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
37.	920822106037	Mani N	ECE	Male
38.	920822106038	Maragathalakshmi B	ECE	Male
39.	920822106039	Mohamed Shameer S M	ECE	Male
40.	920822106040	Muraliprasanth A	ECE	Male
41.	920822106041	Preetha S	ECE	Female
42.	920822106042	Priya Dharshini S V	ECE	Female
43.	920822106043	Rishikesh K	ECE	Male
44.	920822106044	Ruthramoorthy M	ECE	Male
45.	920822106045	Sadhaa Sivam S	ECE	Male
46.	920822106046	Sakthivel N K	ECE	Male
47.	920822106047	Sanjay M	ECE	Male
48.	920822106048	Santhiya V	ECE	Female
49.	920822106049	Sarvesh T	ECE	Male
50.	920822106050	Sathan B	ECE	Male
51.	920822106051	Shivaramakrishnan N	ECE	Male
52.	920822106052	Sivanesan S	ECE	Male
53.	920822106053	Sivaranjini A	ECE	Female
54.	920822106054	Sri Mithra M	ECE	Male
55.	920822106055	Srinithiswari O G	ECE	Female
56.	920822106056	Tamilkodi K	ECE	Female
57.	920822106057	Thirumalainathan P	ECE	Male
58.	920822106058	Thrishma Bharathi G	ECE	Female
59.	920822106059	Varsha R	ECE	Female
60.	920822106060	Venkatesh K	ECE	Male
61.	920822106061	Vimalkumar K	ECE	Male
62.	920822106062	Vinoth P	ECE	Male
63.	920822106063	Viswanathan V	ECE	Male
64.	920822243001	Aaron S	AI&DS	Male
65.	920822243002	Abinaya Sree A	AI&DS	Female
66.	920822243003	Aishuwarya Dharshini V	AI&DS	Female
67.	920822243004	Akash S	AI&DS	Male
68.	920822243005	Alen Thomas	AI&DS	Female
69.	920822243006	Anandhapranesh P	AI&DS	Male
70.	920822243007	Aririthissh A M	AI&DS	Male
71.	920822243008	Arunkumar N	AI&DS	Male
72.	920822243009	Aswin Raj H	AI&DS	Male
73.	920822243010	Balaguru B	AI&DS	Male
74.	920822243011	Balavijay M	AI&DS	Male

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DEPARTMENT OF SCIENCE AND HUMANITIES
Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
75.	920822243012	Bavatharani K	AI&DS	Female
76.	920822243013	Bharath Bagavathi R	AI&DS	Male
77.	920822243014	Daranee Daran R	AI&DS	Male
78.	920822243015	Deepak Indirajith M C	AI&DS	Male
79.	920822243016	Gokulprasanna V	AI&DS	Male
80.	920822243017	Guru Hariprasath R	AI&DS	Male
81.	920822243018	Guruprasath M	AI&DS	Male
82.	920822243019	Issac Sunil	AI&DS	Male
83.	920822243020	James Allwin S J	AI&DS	Male
84.	920822243021	Janani S	AI&DS	Female
85.	920822243022	Jegatheesh M	AI&DS	Male
86.	920822243023	Jeyasurya S	AI&DS	Male
87.	920822243024	Joseph Boweenraj A	AI&DS	Male
88.	920822243025	Karthick J P	AI&DS	Male
89.	920822243026	Krisha C R	AI&DS	Female
90.	920822243027	Krithick P	AI&DS	Male
91.	920822243028	Lakshmana Perumal S	AI&DS	Male
92.	920822243029	Leena Sri S	AI&DS	Female
93.	920822243030	Loga Hariharan V G	AI&DS	Female
94.	920822243031	Logeshwaran S	AI&DS	Male
95.	920822243032	Mayil Vaganan R	AI&DS	Male
96.	920822243033	Mohamed Bisail M	AI&DS	Male
97.	920822243034	Mono Balaji D	AI&DS	Male
98.	920822243035	Nagarajan M	AI&DS	Male
99.	920822243036	Nanthagobalakrishnan M	AI&DS	Male
100.	920822243037	Niranjana S	AI&DS	Female
101.	920822243038	Padmesh M	AI&DS	Male
102.	920822243039	Prasanth J	AI&DS	Male
103.	920822243040	Prithiviraj R	AI&DS	Male
104.	920822205001	Aadharsh R D	IT	Male
105.	920822205002	Bhuvaneshwari S	IT	Female
106.	920822205003	Deepadharshini D	IT	Female
107.	920822205004	Divya D	IT	Female
108.	920822205005	Gowthamkishore V	IT	Male
109.	920822205006	Hari Haran K	IT	Male
110.	920822205007	Hari Haran T	IT	Male
111.	920822205008	Harini Devi B	IT	Female
112.	920822205009	Harshavarthan B	IT	Male

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Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113.	920822114001	Abdul Ajees A	MECH	Male
114.	920822114002	Alaguraja V	MECH	Male
115.	920822114003	Arvinth Nagarathinam B J	MECH	Male
116.	920822114004	Bala K	MECH	Male
117.	920822114005	Bala N	MECH	Male
118.	920822114015	Muthuvel S	MECH	Male
119.	920822114016	Nandhagopal C	MECH	Male
120.	920822114017	Naveen Kumar M	MECH	Male
121.	920822114018	Riswanth S	MECH	Male
122.	920822114019	Sabariganapathy S	MECH	Male

HOD- I Year
(Dr. P. S. Satheesh Kumar)

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Industrial Visit to VEI Technologies, Chennai

Feedback Summary

Sl.no.	Particulars	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
1	The place of visit is relevant tothe course/courses of the programme.	210	50	10	-	-	270
2	Purpose of the visit was explained in prior.	220	30	20	-	-	270
3	Travel plan was good and thejourney was comfortable.	230	30	-	10	-	270
4	Safety precautions were instructed before the field visitby the officials/Faculty	260	08	02	-	-	270
5	Faculty accompanied the students and explained in addition to the industry officials	200	50	20	-	-	270
6	The Faculty / Industry officials clarified the doubts raised by students during the visit.	250	15	05	-	-	270
7	The visit was useful to strengthen the technical knowledge gathered in lectures	250	16	04	-	-	270
8	Scope for doing project is available in the industry/plant	200	50	20	-	-	270
9	Opportunity is available for getting internship/ industrial training	190	60	20	-	-	270
10	The visit was well planned and organized	250	10	10	-	-	270

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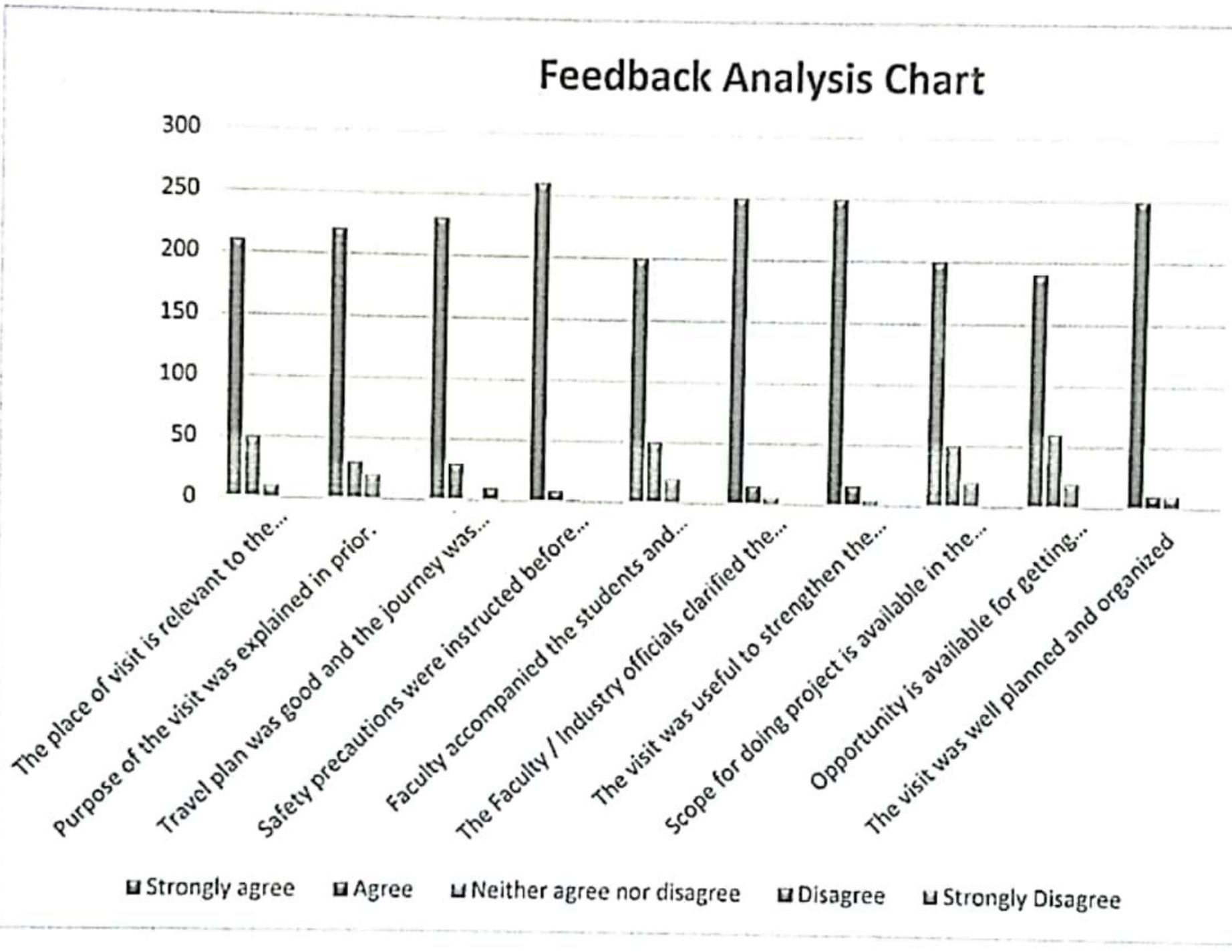
Industrial Visit to VEI Technologies, Chennai

Feedback Analysis



HOD-I YEAR
Dr. P. S. Satheesh Kumar

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Industrial Visit to VEI Technologies, Chennai

PHOTO GALLERY

Date:20/6/23 & Date: 21/6/23

I Year students are standing in front of VEI Technologies

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

Summary Report

Date: June 20th, 2023 (I Batch) and June 21st, 2023 (II Batch)
Venue: VEI Technologies, Poonamallee, Chennai

Purpose: The industrial visit to VEI Technologies aimed to offer students from NPRCET a practical insight into industry operations and various departments. It provided an opportunity for 270 first-year students (90 girls and 180 boys) in two batches, accompanied by six staff members, to gain valuable knowledge about the functioning of an R&D company specializing in web development and software solutions.

Schedule:

- **Departure:** Students were picked up from NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 9:30 pm and traveled by bus to Chennai.
- **Arrival:** The group reached Chennai at 6:00 am the following day.
- **Visit to VEI Technologies:** From 9:00 am to 12:00 pm, students toured the facility, gaining insights into the company's various departments and operations.
- **Meeting with Director:** Students had the opportunity to meet Mr. Babu Ezhilavan, the Director of VEI Technologies, who provided information about the company's services, including web application development, website designing, e-commerce solutions, and more. They also learned about value-added courses offered by the company in areas such as IoT, Java and Python.
- **Leisure Activities:** After lunch at a nearby restaurant from 12:00 p.m to 1:00 p.m, students visited the planetarium from 1:00 p.m to 3:00 p.m, followed by a visit to the zoo from 3:00 p.m to 5:00 p.m, and a trip to the beach from 5:00 p.m to 6:30 p.m.
- **Return:** The students began their return journey at 8:00 p.m and reached NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 5:00 a.m the next day.

Outcome: The industrial visit provided students with a practical understanding of industry operations and exposed them to various aspects of web development and software solutions. The interaction with staff and the Director of VEI Technologies enhanced the students' knowledge about the industry and its potential career paths. Additionally, the inclusion of leisure activities ensured a well-rounded experience for the students.

Conclusion: The visit to VEI Technologies was a valuable learning experience for the students, allowing them to bridge the gap between theoretical knowledge and practical application in the industry. The well-organized itinerary balanced educational insights with recreational activities, making it a memorable and enriching trip for all participants.

On completion of this industrial visit, the following Pos and PSOs were enabled.

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
√				√		√		√	√	√	√			

FACULTY CO-ORDINATORS
(Dr. P. Rani, ASP/Maths)

HOD
Dr. P S Satheesh Kumar

IQAC

Dr. J.SUNDARARAJAN, B.E.,M.Tech., Ph.D.,
PRINCIPAL
Principal
NPR College of Engineering & Technology
Natham

CS3251 **PROGRAMMING IN C** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To understand the constructs of C Language.
- To develop C Programs using basic programming constructs
- To develop C programs using arrays and strings
- To develop modular applications in C using functions
- To develop applications in C using pointers and structures
- To do input/output and file handling in C

UNIT I BASICS OF C PROGRAMMING 9

Introduction to programming paradigms – Applications of C Language - Structure of C program - C programming: Data Types - Constants – Enumeration Constants - Keywords – Operators: Precedenceand Associativity - Expressions - Input/Output statements, Assignment statements – Decision making statements - Switch statement - Looping statements – Preprocessor directives - Compilation process

UNIT II ARRAYS AND STRINGS 9

Introduction to Arrays: Declaration, Initialization – One dimensional array –Two dimensional arrays - String operations: length, compare, concatenate, copy – Selection sort, linear and binary search.

UNIT III FUNCTIONS AND POINTERS 9

Modular programming - Function prototype, function definition, function call, Built-in functions (string functions, math functions) – Recursion, Binary Search using recursive functions –Pointers

– Pointer operators – Pointer arithmetic – Arrays and pointers – Array of pointers – Parameter passing: Pass byvalue, Pass by reference.

UNIT IV STRUCTURES AND UNION 9

Structure - Nested structures – Pointer and Structures – Array of structures – Self-referential structures -Dynamic memory allocation - Singly linked list – typedef – Union - Storage classes and Visibility.

UNIT V FILE PROCESSING 9

Files – Types of file processing: Sequential access, Random access – Sequential access file - Randomaccess file - Command line arguments.

TOTAL : 45 PERIODS

COURSE OUTCOMES:

Upon completion of the course, the students will be able to

CO1: Demonstrate knowledge on C Programming constructs

CO2: Develop simple applications in C using basic constructs

CO3: Design and implement applications using arrays and strings

CO4: Develop and implement modular applications in C using functions.

CO5: Develop applications in C using structures and pointers.

CO6: Design applications using sequential and random-access file processing.

TEXT BOOKS:

1. ReemaThareja, "Programming in C", Oxford University Press, Second Edition, 2016.
2. Kernighan, B.W and Ritchie,D.M, "The C Programming language", Second Edition, PearsonEducation, 2015.

REFERENCES:

1. Paul Deitel and Harvey Deitel, "C How to Program with an Introduction to C++", Eighth edition, Pearson Education, 2018.
2. Yashwant Kanetkar, Let us C, 17th Edition, BPB Publications, 2020.
3. Byron S. Gottfried, "Schaum's Outline of Theory and Problems of Programming with C", McGraw-Hill Education, 1996.
4. Pradip Dey, Manas Ghosh, "Computer Fundamentals and Programming in C", Second
5. Edition, Oxford University Press, 2013. Anita Goel and Ajay Mittal, "Computer Fundamentals and Programming in C", 1st Edition,Pearson Education, 2013.

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Industrial Visit to VEI Technologies, Chennai

PERMISSION LETTER

From

Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology,Natham,
Dindigul – 624 401.

To

The Administrative Office,
NPR Group of Institutions,
Natham,
Dindigul – 624 401.

Through Proper Channel

Sub: Requesting permission for Industrial visit – Reg.

Respected Sir,

I am writing to formally request permission for an industrial visit to VEI Technologies for our 1st Year students. The visit is scheduled to take place on two days, as outlined below:

I Batch - Departments: CSE A, CSE B, and EEE on 20.06.2023

II Batch - Departments: ECE, AI & DS, MECH and IT on 21.06.2023

We are planning for a total of 270 students from the 1st Year, consisting of 180 boys and 90 girls, accompanied by 6 staff members. The staff members accompanying the students are Dr. P.S. Satheesh Kumar, Prof/Physics, Dr. N. Kavitha, ASP/Physics, Dr. P. Rani, ASP/Maths, Dr. P. Shanmuga Priya, ASP/English, Dr. N. Prabakaran, ASP/Chemistry and Mrs. C. Yogitha, AP/Maths.

We assure you that all necessary arrangements regarding transportation, supervision, and safety measures will be diligently taken care of throughout the visit.

We kindly request your approval for this industrial visit, as it will significantly contribute to the academic and professional development of our students.We eagerly await your favorable response.

Yours Faithfully,

Natham,
12.06.2023

(Dr. P. S. Satheesh Kumar)

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
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Industrial Visit to VEI Technologies, Chennai

REQUISITION LETTER

From,
Dr. P.S. Satheesh Kumar,
Head of the Department,
Department of Science and Humanities,
NPR College of Engineering & Technology, Natham,
Dindigul – 624 401.

To,
Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

Dear Sir,
Greetings!
I hope this letter finds you in good health and high spirits. I am writing on behalf of NPR College of Engineering and Technology, situated in Natham, Dindigul district. Our institution is dedicated to the personal and professional development of students from rural backgrounds, offering a range of UG and PG courses.

It has been a longstanding practice in our Science and Humanities Department to organize industrial visits for our students every semester, aiming to provide them with practical exposure and industry insights. In line with this, we have planned an industrial visit to VEI Technologies for our 270 first year students and 6 accompanying staff members. The visit is scheduled for two days, with two batches visiting on 20/6/23 and 21/6/23, respectively.
We assure you, sir, that our students will adhere strictly to safety protocols and will not disrupt your regular operations during their visit.

We humbly request your esteemed organization to grant us permission for this industrial visit. We would greatly appreciate if you could confirm the permission through a formal letter or email correspondence.

We look forward to the opportunity for our students to benefit from this valuable learning experience at VEI Technologies.

Natham,
12.06.23

Yours faithfully,

(Dr. P. S. Satheesh Kumar)

NPR COLLEGE OF ENGG. & TECHNOLOGY * NATHAM

Industrial Visit to VEI Technologies, Chennai

CONFIRMATION LETTER FROM INDUSTRY

Gmail

Inbox

info@veitechnologies.com Wed, JUNE 14,2023, 12.28 PM

To:

hodmathematicsnprcet@gmail.com

Dear Sir,

We are happy to give permission for the industrial visit to your wards in VEI Technologies, Chennai. Kindly remind us one day in advance for the visit schedule also send the original letter copy with your hand during the visit.

Thanks and Regards,

Dr B Ezhilavan,
Managing Director,
VEI Technologies,
Chennai.

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

BATCH-I STUDENT PARTICIPANTS LIST-I YEAR

Date: 20.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
1.	920822104001	Abarna T	CSE- A	Female
2.	920822104002	Adaikalaraj S	CSE- A	Male
3.	920822104003	Adhithya K	CSE- A	Male
4.	920822104004	Afzal Khan M	CSE- A	Male
5.	920822104005	Ahilesh V	CSE- A	Male
6.	920822104006	Ajay Prajan S	CSE- A	Male
7.	920822104007	Ajitha Carmel J	CSE- A	Female
8.	920822104008	Akash S	CSE- A	Male
9.	920822104009	Akshal R	CSE- A	Male
10.	920822104011	Alwin Kirubakaran Y	CSE- A	Male
11.	920822104012	Anusuya S	CSE- A	Female
12.	920822104013	Anwarsha K	CSE- A	Female
13.	920822104014	Arul Hariharan S	CSE- A	Male
14.	920822104015	Ashima Nishara D	CSE- A	Female
15.	920822104016	Asim Sumaiya J	CSE- A	Female
16.	920822104017	Aswanthwin Fried S	CSE- A	Male
17.	920822104018	Balamurugan D	CSE- A	Male
18.	920822104019	Bharath Kumar V	CSE- A	Male
19.	920822104020	Bismi Farhana A	CSE- A	Female
20.	920822104021	Cibi Raj C	CSE- A	Male
21.	920822104022	Deepadharshini G	CSE- A	Female
22.	920822104023	Ellin Arock Celcia J	CSE- A	Female
23.	920822104024	Giri Ganesh K	CSE- A	Male
24.	920822104025	Gokula Kannan T	CSE- A	Male
25.	920822104026	Gokula Praveen N	CSE- A	Male
26.	920822104027	Gowtham P	CSE- A	Male
27.	920822104028	Gowthavamoorthy S	CSE- A	Male
28.	920822104029	Hariharan D	CSE- A	Male
29.	920822104030	Indira J	CSE- A	Female
30.	920822104031	Iswarya K	CSE- A	Female
31.	920822104032	Janani Priyadharshini V	CSE- A	Female
32.	920822104033	Jawahar S	CSE- A	Male
33.	920822104034	Jeeviha S	CSE- A	Female
34.	920822104035	Jerald Reeganraj I	CSE- A	Male
35.	920822104036	Jeya Arthi S	CSE- A	Female
36.	920822104037	Jeyadeva M	CSE- A	Female

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DEPARTMENT OF SCIENCE AND HUMANITIES
Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
37.	920822104038	Joel Rajan	CSE- A	Male
38.	920822104039	Kalaiselvan A	CSE- A	Male
39.	920822104040	Kanthalarasi K	CSE- A	Female
40.	920822104041	Karthiga B	CSE- A	Female
41.	920822104042	Kishore P	CSE- A	Male
42.	920822104043	Kowsalya S	CSE- A	Female
43.	920822104044	Kumaresan S	CSE- A	Male
44.	920822104045	Leo Aandrew G	CSE- A	Male
45.	920822104046	Madhan P	CSE- A	Male
46.	920822104047	Mahalakshmi K	CSE- A	Female
47.	920822104048	Mahalakshmi S	CSE- A	Female
48.	920822104049	Mahasri M	CSE- A	Female
49.	920822104050	Mallesh T	CSE- A	Male
50.	920822104051	Manikandan R	CSE- A	Male
51.	920822104052	Marikumar G	CSE- A	Female
52.	920822104053	Marshal John Raj L	CSE- A	Male
53.	920822104054	Meenakshi K	CSE- A	Female
54.	920822104055	Mohamed Azardeen M	CSE- A	Male
55.	920822104056	Mohamed Faizal Khan A	CSE- A	Male
56.	920822104057	Mohamed Sayeef S	CSE- A	Male
57.	920822104058	Muthukrishnan V	CSE- A	Male
58.	920822104059	Muthu Mahalakshmi V	CSE- A	Female
59.	920822104060	Naga Arjun B	CSE- A	Male
60.	920822104061	Naveen J	CSE- A	Male
61.	920822104062	Naveena V	CSE- A	Female
62.	920822104063	Nevin Nehal R S	CSE- A	Male
63.	920822104064	Nirmala R	CSE- A	Female
64.	920822104065	Nishanth K	CSE- B	Male
65.	920822104066	Nithish R	CSE- B	Male
66.	920822104067	Nithish Manickam S	CSE- B	Male
67.	920822104068	Nivetha P	CSE- B	Female
68.	920822104069	Palanimurugan V	CSE- B	Male
69.	920822104070	Partheeban A	CSE- B	Male
70.	920822104071	Pavatharani S	CSE- B	Female
71.	920822104072	Perumal Kumar V	CSE- B	Male
72.	920822104073	Ponnalagar V	CSE- B	Male
73.	920822104074	Pooja Shree A	CSE- B	Female
74.	920822104075	Pooja Shri M	CSE- B	Female

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Industrial Visit to VEI Technologies,Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	CLASS	GENDER
75.	920822104076	Poornisha R	CSE- B	Female
76.	920822104077	Pradeepan M	CSE- B	Male
77.	920822104078	Pragatheeswaran A	CSE- B	Male
78.	920822104079	Praveenkumar S	CSE- B	Male
79.	920822104080	Priyadharshini G	CSE- B	Female
80.	920822104081	Priyadharshini R	CSE- B	Female
81.	920822104082	Rajamannar N G	CSE- B	Male
82.	920822104083	Rakesh V	CSE- B	Male
83.	920822104084	Ravikrishnan R	CSE- B	Male
84.	920822104085	Rexton George R	CSE- B	Male
85.	920822104086	Rohini T	CSE- B	Female
86.	920822104087	Rubinesh C	CSE- B	Male
87.	920822104088	Sabari Anandh M	CSE- B	Male
88.	920822104089	Sabura Shifana J	CSE- B	Female
89.	920822104090	Sakthivel P	CSE- B	Male
90.	920822104091	Sanjay T	CSE- B	Male
91.	920822104092	Sanjay Raj J	CSE- B	Male
92.	920822104093	Santhiya S	CSE- B	Female
93.	920822104094	Sarguna Gokul R	CSE- B	Male
94.	920822104095	Saru Malini R	CSE- B	Female
95.	920822104096	Sathish S	CSE- B	Male
96.	920822104097	Shalima S	CSE- B	Female
97.	920822104098	Shrini Prabu A	CSE- B	Male
98.	920822104099	Sivaraj Kumar M	CSE- B	Male
99.	920822104100	Sofiga R	CSE- B	Female
100	920822104101	Sona S	CSE- B	Female
101	920822104102	Sree Yogeswari S	CSE- B	Female
102	920822104103	Sri Kunguma Raja Surya V	CSE- B	Male
103	920822104104	Sri Prasath N K	CSE- B	Male
104	920822104105	Subash Rayan S	CSE- B	Male
105	920822104106	Subha Sri R	CSE- B	Female
106	920822104107	Sujithra B	CSE- B	Female
107	920822104108	Sulaika P	CSE- B	Female
108	920822104109	Surekha M	CSE- B	Female
109	920822104110	Suriya Prabha K	CSE- B	Female
110	920822104111	Surjith K	CSE- B	Male
111	920822104112	Syed Ali Fathima N	CSE- B	Female
112	920822104113	Tharini Priya J	CSE- B	Female

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Industrial Visit to VEI Technologies,Chennai

S.No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113	920822104114	Veera Ramana M	CSE- B	Male
114	920822104115	Vibin Dipak K	CSE- B	Male
115	920822104116	Vignesh M	CSE- B	Male
116	920822104117	Vignesh R	CSE- B	Male
117	920822104118	Vijayalakshmi A	CSE- B	Female
118	920822104119	Vijayan S	CSE- B	Male
119	920822104120	Vimal Sanjay A	CSE- B	Male
120	920822104121	Visali S	CSE- B	Female
121	920822104122	Vishnupriya D	CSE- B	Female
122	920822104123	Viswa B	CSE- B	Male
123	920822104124	Yagavarman S	CSE- B	Male
124	920822104125	Yoganth M	CSE- B	Male
125	920822104126	Yohith Kumar Nagarajan	CSE- B	Male
126	920822105001	Abhin Krishna U V	EEE	Male
127	920822105002	Abirami P	EEE	Female
128	920822105003	Ajay S	EEE	Male
129	920822105004	Ariyadharshini B	EEE	Female
130	920822105005	Atheeswaran M	EEE	Male
131	920822105006	Chellan P	EEE	Male
132	920822105007	Deenadhayalan T	EEE	Male
133	920822105008	Dhanushkumar K	EEE	Male
134	920822105009	Dharani M	EEE	Female
135	920822105010	Dharani Daran M	EEE	Male
136	920822105011	Dhinesh Prasad S	EEE	Male
137	920822105012	Eswara Pandi R	EEE	Male
138	920822105013	Hari Haran G	EEE	Male
139	920822105014	Harini R	EEE	Female
140	920822105015	Kaja Mohaideen S	EEE	Male
141	920822105016	Karuppaiah C	EEE	Male
142	920822105017	Mohammed Hanif H	EEE	Male
143	920822105018	Nikeelash Bala M	EEE	Male
144	920822105019	Pandi Manikandan N	EEE	Male
145	920822105020	Premkumar K	EEE	Male
146	920822105021	Raghul Kanna S	EEE	Male
147	920822105022	Rajapandian R	EEE	Male
148	920822105023	Sakthi Vignesh S	EEE	Male

HOD-I Year
(Dr. P. S. Sathees Kumar)

Dr. J.SUNDARARAJAN, M.E., M.Tech., Ph.D.,
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Industrial Visit to VEI Technologies, Chennai

DEPARTMENT OF SCIENCE AND HUMANITIES

BATCH-II STUDENTS PARTICIPANTS LIST- I YEAR

Date: 21.06.23

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
1.	920822106001	Aajip S	ECE	Male
2.	920822106002	Archana A R	ECE	Female
3.	920822106003	Arunachalam R	ECE	Male
4.	920822106004	Arun Kumar S	ECE	Male
5.	920822106005	Athikundhan G	ECE	Male
6.	920822106006	Azhagu Selvam S	ECE	Male
7.	920822106007	Babitha N	ECE	Female
8.	920822106008	Balamurugan P	ECE	Male
9.	920822106009	Bala Sowndharya M	ECE	Male
10.	920822106010	Bazir Ahamed M	ECE	Male
11.	920822106011	Bhava Dharani S	ECE	Male
12.	920822106012	Dharshan V	ECE	Male
13.	920822106013	Divyadharshini M	ECE	Female
14.	920822106014	Divyadharshini U	ECE	Female
15.	920822106015	Geerthana T	ECE	Female
16.	920822106016	Giruthika R	ECE	Female
17.	920822106017	Gokulakrishnan P	ECE	Male
18.	920822106018	Gokul Krishnan R	ECE	Male
19.	920822106019	Hariharan S P	ECE	Male
20.	920822106020	Harimadesh S	ECE	Male
21.	920822106021	Hemalatha K	ECE	Female
22.	920822106022	Janagan A	ECE	Male
23.	920822106023	Janarthanan A S	ECE	Male
24.	920822106024	Jeeva T	ECE	Male
25.	920822106025	Jeeva Rexline A	ECE	Female
26.	920822106026	Jenifer R	ECE	Female
27.	920822106027	Jeyan James Raj A	ECE	Male
28.	920822106028	Jeyasri P	ECE	Female
29.	920822106029	Kevin Agath A	ECE	Male
30.	920822106030	Kohila K	ECE	Female
31.	920822106031	Lakshmi S	ECE	Female
32.	920822106032	Lalith Kishore M	ECE	Male
33.	920822106033	Lieyander A B	ECE	Male
34.	920822106034	Loganath S	ECE	Male
35.	920822106035	Mahesh Karthick M	ECE	Male
36.	920822106036	Maheswaran S	ECE	Male

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DEPARTMENT OF SCIENCE AND HUMANITIES
INDUSTRIAL VISIT TO VEI TECHNOLOGIES, CHENNAI

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
37.	920822106037	Mani N	ECE	Male
38.	920822106038	Maragathalakshmi B	ECE	Male
39.	920822106039	Mohamed Shameer S M	ECE	Male
40.	920822106040	Muraliprasanth A	ECE	Male
41.	920822106041	Preetha S	ECE	Female
42.	920822106042	Priya Dharshini S V	ECE	Female
43.	920822106043	Rishikesh K	ECE	Male
44.	920822106044	Ruthramoorthy M	ECE	Male
45.	920822106045	Sadhaa Sivam S	ECE	Male
46.	920822106046	Sakthivel N K	ECE	Male
47.	920822106047	Sanjay M	ECE	Male
48.	920822106048	Santhiya V	ECE	Female
49.	920822106049	Sarvesh T	ECE	Male
50.	920822106050	Sathan B	ECE	Male
51.	920822106051	Shivaramakrishnan N	ECE	Male
52.	920822106052	Sivanesan S	ECE	Male
53.	920822106053	Sivaranjini A	ECE	Female
54.	920822106054	Sri Mithra M	ECE	Male
55.	920822106055	Srinithiswari O G	ECE	Female
56.	920822106056	Tamilkodi K	ECE	Female
57.	920822106057	Thirumalainathan P	ECE	Male
58.	920822106058	Thrishma Bharathi G	ECE	Female
59.	920822106059	Varsha R	ECE	Female
60.	920822106060	Venkatesh K	ECE	Male
61.	920822106061	Vimalkumar K	ECE	Male
62.	920822106062	Vinoth P	ECE	Male
63.	920822106063	Viswanathan V	ECE	Male
64.	920822243001	Aaron S	AI&DS	Male
65.	920822243002	Abinaya Sree A	AI&DS	Female
66.	920822243003	Aishuwarya Dharshini V	AI&DS	Female
67.	920822243004	Akash S	AI&DS	Male
68.	920822243005	Alen Thomas	AI&DS	Female
69.	920822243006	Anandhapranesh P	AI&DS	Male
70.	920822243007	Aririthissh A M	AI&DS	Male
71.	920822243008	Arunkumar N	AI&DS	Male
72.	920822243009	Aswin Raj H	AI&DS	Male
73.	920822243010	Balaguru B	AI&DS	Male
74.	920822243011	Balavijay M	AI&DS	Male

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DEPARTMENT OF SCIENCE AND HUMANITIES
Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
75.	920822243012	Bavatharani K	AI&DS	Female
76.	920822243013	Bharath Bagavathi R	AI&DS	Male
77.	920822243014	Daranee Daran R	AI&DS	Male
78.	920822243015	Deepak Indirajith M C	AI&DS	Male
79.	920822243016	Gokulprasanna V	AI&DS	Male
80.	920822243017	Guru Hariprasath R	AI&DS	Male
81.	920822243018	Guruprasath M	AI&DS	Male
82.	920822243019	Issac Sunil	AI&DS	Male
83.	920822243020	James Allwin S J	AI&DS	Male
84.	920822243021	Janani S	AI&DS	Female
85.	920822243022	Jegatheesh M	AI&DS	Male
86.	920822243023	Jeyasurya S	AI&DS	Male
87.	920822243024	Joseph Boweenraj A	AI&DS	Male
88.	920822243025	Karthick J P	AI&DS	Male
89.	920822243026	Krisha C R	AI&DS	Female
90.	920822243027	Krithick P	AI&DS	Male
91.	920822243028	Lakshmana Perumal S	AI&DS	Male
92.	920822243029	Leena Sri S	AI&DS	Female
93.	920822243030	Loga Hariharan V G	AI&DS	Female
94.	920822243031	Logeshwaran S	AI&DS	Male
95.	920822243032	Mayil Vaganan R	AI&DS	Male
96.	920822243033	Mohamed Bisail M	AI&DS	Male
97.	920822243034	Mono Balaji D	AI&DS	Male
98.	920822243035	Nagarajan M	AI&DS	Male
99.	920822243036	Nanthagobalakrishnan M	AI&DS	Male
100.	920822243037	Niranjana S	AI&DS	Female
101.	920822243038	Padmesh M	AI&DS	Male
102.	920822243039	Prasanth J	AI&DS	Male
103.	920822243040	Prithiviraj R	AI&DS	Male
104.	920822205001	Aadharsh R D	IT	Male
105.	920822205002	Bhuvaneshwari S	IT	Female
106.	920822205003	Deepadharshini D	IT	Female
107.	920822205004	Divya D	IT	Female
108.	920822205005	Gowthamkishore V	IT	Male
109.	920822205006	Hari Haran K	IT	Male
110.	920822205007	Hari Haran T	IT	Male
111.	920822205008	Harini Devi B	IT	Female
112.	920822205009	Harshavarthan B	IT	Male

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

S. No.	REGISTER NUMBER	NAME OF THE STUDENT	DEPARTMENT	GENDER
113.	920822114001	Abdul Ajees A	MECH	Male
114.	920822114002	Alaguraja V	MECH	Male
115.	920822114003	Arvinth Nagarathinam B J	MECH	Male
116.	920822114004	Bala K	MECH	Male
117.	920822114005	Bala N	MECH	Male
118.	920822114015	Muthuvel S	MECH	Male
119.	920822114016	Nandhagopal C	MECH	Male
120.	920822114017	Naveen Kumar M	MECH	Male
121.	920822114018	Riswanth S	MECH	Male
122.	920822114019	Sabariganapathy S	MECH	Male

HOD- I Year
(Dr. P. S. Satheesh Kumar)

PRINCIPAL
Dr. J.SUNDARARAJAN,
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Principal
N.P.R. College of Engineering & Technology
Natham, Dindigul (Dt) - 624 401.

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Industrial Visit to VEI Technologies, Chennai

Feedback Summary

Sl.no.	Particulars	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
1	The place of visit is relevant tothe course/courses of the programme.	210	50	10	-	-	270
2	Purpose of the visit was explained in prior.	220	30	20	-	-	270
3	Travel plan was good and thejourney was comfortable.	230	30	-	10	-	270
4	Safety precautions were instructed before the field visitby the officials/Faculty	260	08	02	-	-	270
5	Faculty accompanied the students and explained in addition to the industry officials	200	50	20	-	-	270
6	The Faculty / Industry officials clarified the doubts raised by students during the visit.	250	15	05	-	-	270
7	The visit was useful to strengthen the technical knowledge gathered in lectures	250	16	04	-	-	270
8	Scope for doing project is available in the industry/plant	200	50	20	-	-	270
9	Opportunity is available for getting internship/ industrial training	190	60	20	-	-	270
10	The visit was well planned and organized	250	10	10	-	-	270

CamScanner

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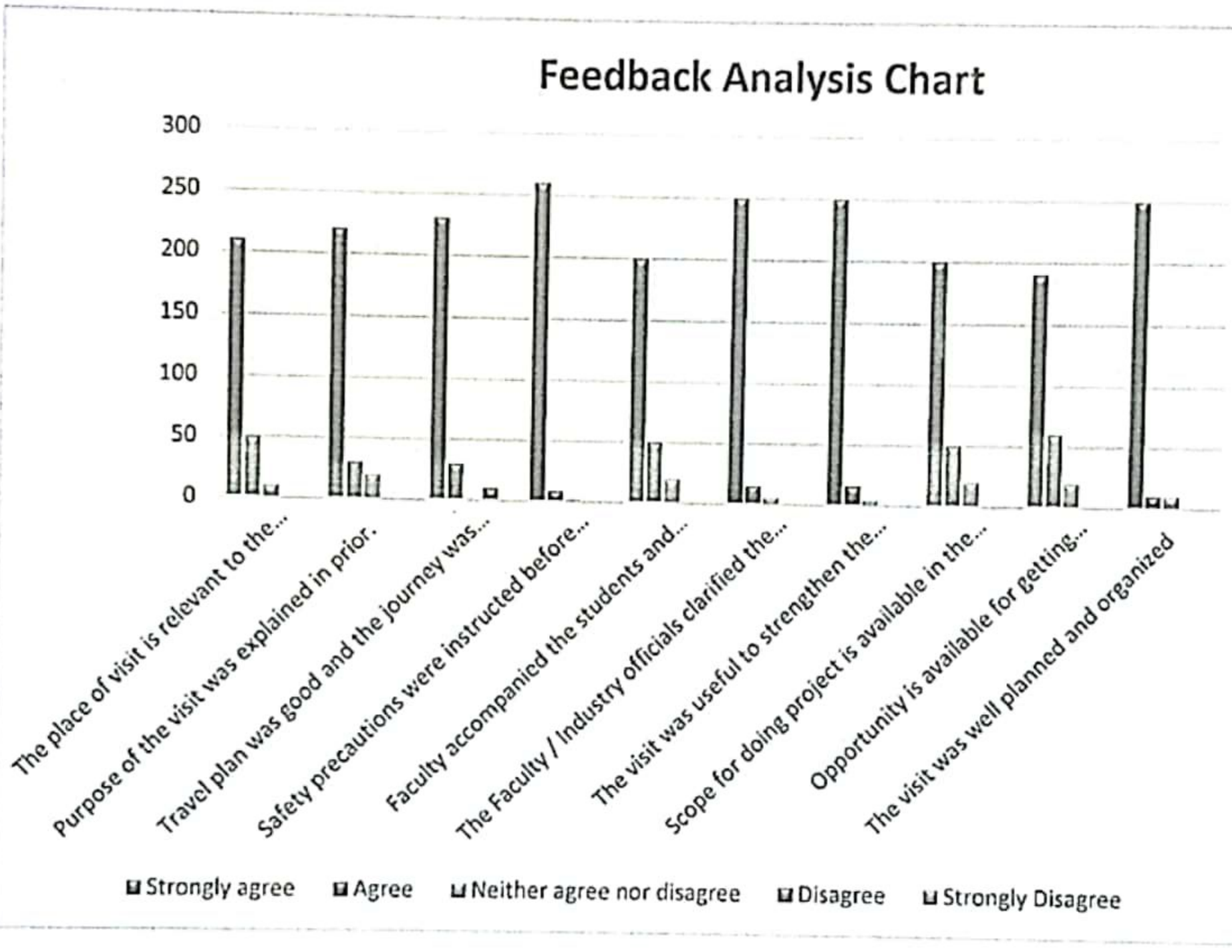
DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

Feedback Analysis



HOD-I YEAR
Dr. P. S. Satheesh Kumar

IQAC

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B.E., M.Tech., Ph.D.,
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Industrial Visit to VEI Technologies, Chennai

PHOTO GALLERY

Date:20/6/23 & Date: 21/6/23

I Year students are standing in front of VEI Technologies

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DEPARTMENT OF SCIENCE AND HUMANITIES

Industrial Visit to VEI Technologies, Chennai

Summary Report

Date: June 20th, 2023 (I Batch) and June 21st, 2023 (II Batch)
Venue: VEI Technologies, Poonamallee, Chennai

Purpose: The industrial visit to VEI Technologies aimed to offer students from NPRCET a practical insight into industry operations and various departments. It provided an opportunity for 270 first-year students (90 girls and 180 boys) in two batches, accompanied by six staff members, to gain valuable knowledge about the functioning of an R&D company specializing in web development and software solutions.

Schedule:

- **Departure:** Students were picked up from NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 9:30 pm and traveled by bus to Chennai.
- **Arrival:** The group reached Chennai at 6:00 am the following day.
- **Visit to VEI Technologies:** From 9:00 am to 12:00 pm, students toured the facility, gaining insights into the company's various departments and operations.
- **Meeting with Director:** Students had the opportunity to meet Mr. Babu Ezhilavan, the Director of VEI Technologies, who provided information about the company's services, including web application development, website designing, e-commerce solutions, and more. They also learned about value-added courses offered by the company in areas such as IoT, Java and Python.
- **Leisure Activities:** After lunch at a nearby restaurant from 12:00 p.m to 1:00 p.m, students visited the planetarium from 1:00 p.m to 3:00 p.m, followed by a visit to the zoo from 3:00 p.m to 5:00 p.m, and a trip to the beach from 5:00 p.m to 6:30 p.m.
- **Return:** The students began their return journey at 8:00 p.m and reached NPRCET on 20.6.23(I Batch) and on 21.6.23(II Batch) at 5:00 a.m the next day.

Outcome: The industrial visit provided students with a practical understanding of industry operations and exposed them to various aspects of web development and software solutions. The interaction with staff and the Director of VEI Technologies enhanced the students' knowledge about the industry and its potential career paths. Additionally, the inclusion of leisure activities ensured a well-rounded experience for the students.

Conclusion: The visit to VEI Technologies was a valuable learning experience for the students, allowing them to bridge the gap between theoretical knowledge and practical application in the industry. The well-organized itinerary balanced educational insights with recreational activities, making it a memorable and enriching trip for all participants.

On completion of this industrial visit, the following Pos and PSOs were enabled.

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
√				√		√		√	√	√	√			

FACULTY CO-ORDINATORS
(Dr. P. Rani, ASP/Maths)

HOD
Dr. P S Satheesh Kumar

IQAC

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PRINCIPAL
Principal
NPR College of Engineering & Technology
Natham

CS8351 **DIGITAL PRINCIPLES AND SYSTEM DESIGN** **L T P C**
4 0 0 4

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC **9**

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC **9**

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS **9**

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR **9**

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Micro programmed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O **9**

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA

45 PERIODS

PRACTICAL EXERCISES: **30 PERIODS**

1. Verification of Boolean theorems using logic gates.
2. Design and implementation of combinational circuits using gates for arbitrary functions.
3. Implementation of 4-bit binary adder/subtractor circuits.
4. Implementation of code converters.
5. Implementation of BCD adder, encoder and decoder circuits
6. Implementation of functions using Multiplexers.
7. Implementation of the synchronous counters

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8. Implementation of a Universal Shift register.
9. Simulator based study of Computer Architecture

COURSE OUTCOMES:

At the end of this course, the students will be able to:

CO1 : Design various combinational digital circuits using logic gates

CO2 : Design sequential circuits and analyze the design procedures

CO3 :State the fundamentals of computer systems and analyze the execution of an instruction

CO4 : Analyze different types of control design and identify hazards

CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL: 75 PERIODS

TEXT BOOKS:

1. M. Morris Mano, Michael D. Ciletti, "Digital Design : With an Introduction to the Verilog HDL, VHDL, and System Verilog", Sixth Edition, Pearson Education, 2018.
2. David A. Patterson, John L. Hennessy, "Computer Organization and Design, The Hardware/Software Interface", Sixth Edition, Morgan Kaufmann/Elsevier, 2020.

REFERENCES:

1. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, Naraig Manjikian, "Computer Organization and Embedded Systems", Sixth Edition, Tata McGraw-Hill, 2012.
2. William Stallings, "Computer Organization and Architecture – Designing for Performance", Tenth Edition, Pearson Education, 2016.
3. M. Morris Mano, "Digital Logic and Computer Design", Pearson Education, 2016.

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Date: 24.04.2023

CERTIFICATE OF INPLANT TRAINING

This is to certify that **Mr.Akash T** from NPR College Engineering and Technology has successfully completed in-plant training from **03.04.2023 to 17.04.2023** in our organization.

During the tenure of training, we found him very sincere, attentive and good behaviour.

For C3 TECHNOLOGIES
Managing Director

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CS3352 **FOUNDATIONS OF DATA SCIENCE** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To understand the data science fundamentals and process.
- To learn to describe the data for the data science process.
- To learn to describe the relationship between data.
- To utilize the Python libraries for Data Wrangling.
- To present and interpret data using visualization libraries in Python

UNIT I INTRODUCTION 9

Data Science: Benefits and uses – facets of data - Data Science Process: Overview – Defining research goals – Retrieving data – Data preparation - Exploratory Data analysis – build the model– presenting findings and building applications - Data Mining - Data Warehousing – Basic Statistical descriptions of Data

UNIT II DESCRIBING DATA 9

Types of Data - Types of Variables -Describing Data with Tables and Graphs –Describing Data with Averages - Describing Variability - Normal Distributions and Standard (z) Scores

UNIT III DESCRIBING RELATIONSHIPS 9

Correlation –Scatter plots –correlation coefficient for quantitative data –computational formula for correlation coefficient – Regression –regression line –least squares regression line – Standard error of estimate – interpretation of r2 –multiple regression equations – regression towards the mean

UNIT IV PYTHON LIBRARIES FOR DATA WRANGLING 9

Basics of Numpy arrays –aggregations –computations on arrays –comparisons, masks, boolean logic – fancy indexing – structured arrays – Data manipulation with Pandas – data indexing and selection – operating on data – missing data – Hierarchical indexing – combining datasets – aggregation and grouping – pivot tables

UNIT V DATA VISUALIZATION 9

Importing Matplotlib – Line plots – Scatter plots – visualizing errors – density and contour plots – Histograms – legends – colors – subplots – text and annotation – customization – three dimensional plotting - Geographic Data with Basemap - Visualization with Seaborn

COURSE OUTCOMES:

At the end of this course, the students will be able to: CO1: Define the data science process
CO2: Understand different types of data description for data science process
CO3: Gain knowledge on relationships between data
CO4: Use the Python Libraries for Data Wrangling
CO5: Apply visualization Libraries in Python to interpret and explore data

TOTAL:45 PERIODS

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TEXT BOOKS

1. David Cielen, Arno D. B. Meysman, and Mohamed Ali, "Introducing Data Science", Manning Publications, 2016. (Unit I)
2. Robert S. Witte and John S. Witte, "Statistics", Eleventh Edition, Wiley Publications, 2017. (Units II and III)
3. Jake VanderPlas, "Python Data Science Handbook", O'Reilly, 2016. (Units IV and V)

REFERENCES:

1. Allen B. Downey, "Think Stats: Exploratory Data Analysis in Python", Green Tea Press,2014.

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Date: 24.04.2023

CERTIFICATE OF INPLANT TRAINING

This is to certify that **Mr. Anandakumar A** from NPR College Engineering and Technology has successfully completed in-plant training from **03.04.2023 to 17.04.2023** i in our organization.

During the tenure of training, we found him very sincere, attentive and good behaviour.

For C3 TECHNOLOGIES
Managing Director

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Principal
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CS3301 **DATA STRUCTURES** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To understand the concepts of ADTs.
- To Learn linear data structures – lists, stacks, and queues.
- To understand non-linear data structures – trees and graphs.
- To understand sorting, searching and hashing algorithms.
- To apply Tree and Graph structures.

UNIT I LISTS 9

Abstract Data Types (ADTs) – List ADT – Array-based implementation – Linked list implementation – Singly linked lists – Circularly linked lists – Doubly-linked lists – Applications of lists – Polynomial ADT – Radix Sort – Multilists.

UNIT II STACKS AND QUEUES 9

Stack ADT – Operations – Applications – Balancing Symbols – Evaluating arithmetic expressions- Infix to Postfix conversion – Function Calls – Queue ADT – Operations – Circular Queue – DeQueue – Applications of Queues.

UNIT III TREES 9

Tree ADT – Tree Traversals - Binary Tree ADT – Expression trees – Binary Search Tree ADT – AVL Trees – Priority Queue (Heaps) – Binary Heap.

UNIT IV MULTIWAY SEARCH TREES AND GRAPHS 9

B-Tree – B+ Tree – Graph Definition – Representation of Graphs – Types of Graph - Breadth-first traversal – Depth-first traversal — Bi-connectivity – Euler circuits – Topological Sort – Dijkstra's algorithm – Minimum Spanning Tree – Prim's algorithm – Kruskal's algorithm

UNIT V SEARCHING, SORTING AND HASHING TECHNIQUES 9

Searching – Linear Search – Binary Search. Sorting – Bubble sort – Selection sort – Insertion sort – Shell sort – Merge Sort – Hashing – Hash Functions – Separate Chaining – Open Addressing –Rehashing – Extendible Hashing.

COURSE OUTCOMES:

At the end of this course, the students will be able to:

CO1: Define linear and non-linear data structures.

CO2: Implement linear and non–linear data structure operations.

CO3: Use appropriate linear/non–linear data structure operations for solving a given problem.

CO4: Apply appropriate graph algorithms for graph applications.

CO5: Analyze the various searching and sorting algorithms.

TOTAL:45 PERIODS

TEXT BOOKS

1. Mark Allen Weiss, Data Structures and Algorithm Analysis in C, 2nd Edition, Pearson Education, 2005.
2. Kamthane, Introduction to Data Structures in C, 1st Edition, Pearson Education, 2007

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REFERENCES

1. Langsam, Augenstein and Tanenbaum, Data Structures Using C and C++, 2nd Edition, Pearson Education, 2015.
2. Thomas H. Cormen, Charles E. Leiserson, Ronald L.Rivest, Clifford Stein, Introduction to Algorithms", Fourth Edition, Mcgraw Hill/ MIT Press, 2022.
3. Alfred V. Aho, Jeffrey D. Ullman,John E. Hopcroft ,Data Structures and Algorithms, 1st edition, Pearson, 2002.
4. Kruse, Data Structures and Program Design in C, 2nd Edition, Pearson Education, 2006.

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24th Nov '2022

To Whom So Ever It May Concern

This is to certify that **Mr.Abdul Jalil S,** Department of Computer Science & Engineering, NPR College of Engineering & Technology, Natham, Dindigul has undergone in-plant training from **02.11.2022 to 11.11.2022** in our organization.

During the period of his training, he had shown keen interest towards learning.

He demonstrated good design skills with self-motivated attitude to learn new things.

We wish him future endeavor.

Yours Sincerely,
For **CMS IT Services Pvt Ltd.,**

Authorized Signatory,

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
NPR College of Engineering & Technology
Natham, Dindigul(Dt) - 624 401.

3rd Floor, TABS Complex, Opp. American Hospital, 41, Bharathidasan Salai, Cantonment, Trichy – 620 001
Phone : 0431- 4250437, Email : trichy@cmsinstitute.co.in Website: www.cmsinstitute.co.in

CS3391 **OBJECT ORIENTED PROGRAMMING** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To understand Object Oriented Programming concepts and basics of Java programming language
- To know the principles of packages, inheritance and interfaces
- To develop a java application with threads and generics classes
- To define exceptions and use I/O streams
- To design and build Graphical User Interface Application using JAVAFX

UNIT I INTRODUCTION TO OOP AND JAVA 9

Overview of OOP – Object oriented programming paradigms – Features of Object Oriented Programming – Java Buzzwords – Overview of Java – Data Types, Variables and Arrays – Operators – Control Statements – Programming Structures in Java – Defining classes in Java – Constructors-Methods -Access specifiers - Static members- Java Doc comments

UNIT II INHERITANCE, PACKAGES AND INTERFACES 9

Overloading Methods – Objects as Parameters – Returning Objects –Static, Nested and Inner Classes. Inheritance: Basics– Types of Inheritance -Super keyword -Method Overriding – Dynamic Method Dispatch –Abstract Classes – final with Inheritance. Packages and Interfaces: Packages – Packages and Member Access –Importing Packages – Interfaces.

UNIT III EXCEPTION HANDLING AND MULTITHREADING 9

Exception Handling basics – Multiple catch Clauses – Nested try Statements – Java's Built-in Exceptions – User defined Exception. Multithreaded Programming: Java Thread Model– Creating a Thread and Multiple Threads – Priorities – Synchronization – Inter Thread Communication- Suspending –Resuming, and Stopping Threads –Multithreading. Wrappers – Auto boxing.

UNIT IV I/O, GENERICS, STRING HANDLING 9

I/O Basics – Reading and Writing Console I/O – Reading and Writing Files. Generics: Generic Programming – Generic classes – Generic Methods – Bounded Types – Restrictions and Limitations. Strings: Basic String class, methods and String Buffer Class.

UNIT V JAVAFX EVENT HANDLING, CONTROLS AND COMPONENTS 9

JAVAFX Events and Controls: Event Basics – Handling Key and Mouse Events. Controls: Checkbox, ToggleButton – RadioButtons – ListView – ComboBox – ChoiceBox – Text Controls – ScrollPane. Layouts – FlowPane – HBox and VBox – BorderPane – StackPane – GridPane. Menus – Basics – Menu – Menu bars – MenuItem.

COURSE OUTCOMES:

On completion of this course, the students will be able to

CO1: Apply the concepts of classes and objects to solve simple problems

CO2: Develop programs using inheritance, packages and interfaces

CO3: Make use of exception handling mechanisms and multithreaded model to solve real world problems

CO4: Build Java applications with I/O packages, string classes, Collections and generics concepts

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CO5: Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications

TOTAL:45 PERIODS

TEXT BOOKS:

1. Herbert Schildt, "Java: The Complete Reference", 11 th Edition, McGraw Hill Education, New Delhi, 2019
2. Herbert Schildt, "Introducing JavaFX 8 Programming", 1 st Edition, McGraw Hill Education, New Delhi, 2015

REFERENCE:

1. Cay S. Horstmann, "Core Java Fundamentals", Volume 1, 11 th Edition, Prentice Hall, 2018.

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Date: 18.05.2023

CERTIFICATE OF COMPLETION

This is to certify that **Mr.Venkatraman .M** student of BE-CSE third year, NPR college of Engineering & Technology, Natham, Dindigul, has successfully completed internship training from **26.04.2023 to 11.05.2023**

During this period her performance was found good.

We wish him good luck for all the future endeavours and looks forward to work in future.

For Xplore IT Corp

Authorized Signatory

Dr. J.SUNDARARAJAN,
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CS3452 **THEORY OF COMPUTATION** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To understand foundations of computation including automata theory
- To construct models of regular expressions and languages
- To design context free grammar and push down automata
- To understand Turing machines and their capability
- To understand Undecidability and NP class problems

UNIT I AUTOMATA AND REGULAR EXPRESSIONS 9

Need for automata theory - Introduction to formal proof – Finite Automata (FA) – Deterministic Finite Automata (DFA) – Non-deterministic Finite Automata (NFA) – Equivalence between NFA and DFA – Finite Automata with Epsilon transitions – Equivalence of NFA and DFA- Equivalence of NFAs with and without ε-moves- Conversion of NFA into DFA – Minimization of DFAs.

UNIT II REGULAR EXPRESSIONS AND LANGUAGES 9

Regular expression – Regular Languages- Equivalence of Finite Automata and regular expressions – Proving languages to be not regular (Pumping Lemma) – Closure properties of regular languages.

UNIT III CONTEXT FREE GRAMMAR AND PUSH DOWN AUTOMATA 9

Types of Grammar - Chomsky's hierarchy of languages -Context-Free Grammar (CFG) and Languages – Derivations and Parse trees – Ambiguity in grammars and languages – Push Down Automata (PDA): Definition – Moves - Instantaneous descriptions -Languages of pushdown automata – Equivalence of pushdown automata and CFG-CFG to PDA-PDA to CFG – Deterministic Pushdown Automata.

UNIT IV NORMAL FORMS AND TURING MACHINES 9

Normal forms for CFG – Simplification of CFG- Chomsky Normal Form (CNF) and Greibach Normal Form (GNF) – Pumping lemma for CFL – Closure properties of Context Free Languages –Turing Machine : Basic model – definition and representation – Instantaneous Description – Language acceptance by TM – TM as Computer of Integer functions – Programming techniques for Turing machines (subroutines).

UNIT V UNDECIDABILITY 9

Unsolvable Problems and Computable Functions –PCP-MPCP- Recursive and recursively enumerable languages – Properties - Universal Turing machine -Tractable and Intractable problems - P and NP completeness – Kruskal's algorithm – Travelling Salesman Problem- 3-CNF SAT problems

COURSE OUTCOMES:

At the end of this course, the students will be able to:

CO1: Construct automata theory using Finite Automata

CO2: Write regular expressions for any pattern

CO3: Design context free grammar and Pushdown Automata

CO4: Design Turing machine for computational functions

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CO5: Differentiate between decidable and undecidable problems

TOTAL:45 PERIODS

TEXT BOOKS:

1. Hopcroft J.E., Motwani R. & Ullman J.D., "Introduction to Automata Theory, Languages and Computations", 3rd Edition, Pearson Education, 2008.
2. John C Martin, "Introduction to Languages and the Theory of Computation", 4th Edition, Tata McGraw Hill, 2011.

REFERENCES:

1. Harry R Lewis and Christos H Papadimitriou , "Elements of the Theory of Computation", 2nd Edition, Prentice Hall of India, 2015.
2. Peter Linz, "An Introduction to Formal Language and Automata", 6th Edition, Jones & Bartlett, 2016.
3. K.L.P.Mishra and N.Chandrasekaran, "Theory of Computer Science: Automata Languages and Computation", 3rd Edition, Prentice Hall of India, 2006.

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Date: 24.04.2023

CERTIFICATE OF INPLANT TRAINING

This is to certify that **Mr. Santhosh Prakash M** from NPR College Engineering and Technology has successfully completed in-plant training from **03.04.2023 to 17.04.2023** in our organization.

During the tenure of training, we found him very sincere, attentive and good behaviour.

For C3 TECHNOLOGIES
Managing Director

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CS3491 ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

L T P C
3 0 2 4

COURSE OBJECTIVES:

The main objectives of this course are to:

- Study about uninformed and Heuristic search techniques.
- Learn techniques for reasoning under uncertainty
- Introduce Machine Learning and supervised learning algorithms
- Study about ensembling and unsupervised learning algorithms
- Learn the basics of deep learning using neural networks

UNIT I PROBLEM SOLVING 9

Introduction to AI - AI Applications - Problem solving agents – search algorithms – uninformed search strategies – Heuristic search strategies – Local search and optimization problems – adversarial search – constraint satisfaction problems (CSP)

UNIT II PROBABILISTIC REASONING 9

Acting under uncertainty – Bayesian inference – naïve bayes models. Probabilistic reasoning – Bayesian networks – exact inference in BN – approximate inference in BN – causal networks.

UNIT III SUPERVISED LEARNING 9

Introduction to machine learning – Linear Regression Models: Least squares, single & multiple variables, Bayesian linear regression, gradient descent, Linear Classification Models: Discriminant function – Probabilistic discriminative model - Logistic regression, Probabilistic generative model – Naive Bayes, Maximum margin classifier – Support vector machine, Decision Tree, Random forests

UNIT IV ENSEMBLE TECHNIQUES AND UNSUPERVISED LEARNING 9

Combining multiple learners: Model combination schemes, Voting, Ensemble Learning - bagging, boosting, stacking, Unsupervised learning: K-means, Instance Based Learning: KNN, Gaussian mixture models and Expectation maximization

UNIT V NEURAL NETWORKS 9

Perceptron - Multilayer perceptron, activation functions, network training – gradient descent optimization – stochastic gradient descent, error backpropagation, from shallow networks to deep networks –Unit saturation (aka the vanishing gradient problem) – ReLU, hyperparameter tuning, batch normalization, regularization, dropout.

45 PERIODS

PRACTICAL EXERCISES: **30 PERIODS**

1. Implementation of Uninformed search algorithms (BFS, DFS)
2. Implementation of Informed search algorithms (A*, memory-bounded A*)
3. Implement naïve Bayes models
4. Implement Bayesian Networks
5. Build Regression models
6. Build decision trees and random forests
7. Build SVM models
8. Implement ensembling techniques
9. Implement clustering algorithms
10. Implement EM for Bayesian networks

11. Build simple NN models
12. Build deep learning NN models

COURSE OUTCOMES:

At the end of this course, the students will be able to:

CO1: Use appropriate search algorithms for problem solving
CO2: Apply reasoning under uncertainty
CO3: Build supervised learning models
CO4: Build ensembling and unsupervised models
CO5: Build deep learning neural network models

TOTAL:75 PERIODS

TEXT BOOKS:

1. Stuart Russell and Peter Norvig, "Artificial Intelligence – A Modern Approach", Fourth Edition, Pearson Education, 2021.
2. Ethem Alpaydin, "Introduction to Machine Learning", MIT Press, Fourth Edition, 2020.

REFERENCES:

1. Dan W. Patterson, "Introduction to Artificial Intelligence and Expert Systems", Pearson Education,2007
2. Kevin Night, Elaine Rich, and Nair B., "Artificial Intelligence", McGraw Hill, 2008
3. Patrick H. Winston, "Artificial Intelligence", Third Edition, Pearson Education, 2006
4. Deepak Khemani, "Artificial Intelligence", Tata McGraw Hill Education, 2013 (http://nptel.ac.in/)
5. Christopher M. Bishop, "Pattern Recognition and Machine Learning", Springer, 2006.
6. Tom Mitchell, "Machine Learning", McGraw Hill, 3rd Edition,1997.
7. Charu C. Aggarwal, "Data Classification Algorithms and Applications", CRC Press, 2014
8. Mehryar Mohri, Afshin Rostamizadeh, Ameet Talwalkar, "Foundations of Machine Learning", MIT Press, 2012.
9. Ian Goodfellow, Yoshua Bengio, Aaron Courville, "Deep Learning", MIT Press, 2016

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DIABETES PREDICTION USING MACHINE LEARNING

A PROJECT REPORT

Submitted by

AFHRAN NISHA A (920819104002)

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

NPR COLLEGE OF ENGINEERING & TECHNOLOGY

NATHAM,DINDIGUL.

ANNA UNIVERSITY :: CHENNAI 600 025

MAY 2023

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report titled " **DIABETES PREDICTION USING MACHINE LEARNING** " is the bonafide work of "**AFHRAN NISHA A (920819104002)** " Who carried out the project work under my supervision.

SIGNATURE

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J.PRISCA MARY, M.E.,

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Submitted for the ANNA UNIVERSITY Project Viva-voce Examination held on...17.05.23...at NPR College of Engineering & Technology,Natham.

INTERNAL EXAMINER

EXTERNAL EXAMINER

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ABSTRACT

Diabetes is a chronic disease with the potential to cause a worldwide health care crisis. According to International Diabetes Federation 382 million people are living with diabetes across the whole world. By 2035, this will be doubled as 592 million. Diabetes is a disease caused due to the increase level of blood glucose. This high blood glucose produces the symptoms of frequent urination, increased thirst, and increased hunger. Diabetes is a one of the leading cause of blindness, kidney failure, amputations, heart failure and stroke. When we eat, our body turns food into sugars, or glucose. At that point, our pancreas is supposed to release insulin. Insulin serves as a key to open our cells, to allow the glucose to enter and allow us to use the glucose for energy. But with diabetes, this system does not work. Type 1 and type 2 diabetes are the most common forms of the disease, but there are also other kinds, such as gestational diabetes, which occurs during pregnancy, as well as other forms. Machine learning is an emerging scientific field in data science dealing with the ways in which machines learn from experience. The aim of this project is to develop a system which can perform early prediction of diabetes for a patient with a higher accuracy by using machine learning techniques. Here the Support Vector Machine Algorithm is used.

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CHAPTER 11

CONCLUSION

In conclusion, the application of machine learning techniques such as SVM algorithm for diabetes prediction has great potential in healthcare, as it can assist healthcare providers in early diagnosis and timely management of diabetes, leadingto improved patient outcomes. The use of Support Vector Machine (SVM) algorithmfor diabetes prediction through machine learning has shown promising results. SVM algorithm can effectively classify diabetes patients from non-diabetic individuals based on several input variables such as age, BMI, glucose levels, and other health details. Overall, With the growing availability of healthcare data, the use of SVM and other machine learning algorithms will continue to play a vital role in predictingand managing diabetes.

FUTURE WORK

The research has not been completed yet. Only the data collection and machine learning model has been implemented in the Android environment. Prediction Module has implemented in the Android application. Features like recommendation system will be added to the Android application in the future. Preprocessing, statistical analysis, development of the machine learning model have been completed. Current machine learning models for diabetes prediction have shown promising results, but there is still room for improvement. Researchers can explore new approaches to feature selection, data preprocessing, and model training to improve the accuracy of predictions. Diabetes datasets often suffer from class imbalance, where there are more samples of one class (e.g. non-diabetic) than the other (e.g. diabetic). This can lead to biased models that perform well on non-diabetic samples but poorly on diabetic samples. Future work can explore methods to address data imbalance and improve model performance on minority class samples. Machine

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CS3492 **DATABASE MANAGEMENT SYSTEMS** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To learn the fundamentals of data models, relational algebra and SQL
- To represent a database system using ER diagrams and to learn normalization techniques
- To understand the fundamental concepts of transaction, concurrency and recovery processing
- To understand the internal storage structures using different file and indexing techniques which will help in physical DB design
- To have an introductory knowledge about the Distributed databases, NOSQL and database security

UNIT I RELATIONAL DATABASES **10**

Purpose of Database System – Views of data – Data Models – Database System Architecture – Introduction to relational databases – Relational Model – Keys - Relational Algebra – SQL fundamentals – Advanced SQL features – Embedded SQL– Dynamic SQL

UNIT II DATABASE DESIGN **8**

Entity-Relationship model – E-R Diagrams – Enhanced-ER Model – ER-to-Relational Mapping – Functional Dependencies – Non-loss Decomposition – First, Second, Third Normal Forms, Dependency Preservation – Boyce/Codd Normal Form – Multi-valued Dependencies and Fourth Normal Form – Join Dependencies and Fifth Normal Form

UNIT III TRANSACTIONS **9**

Transaction Concepts – ACID Properties – Schedules – Serializability – Transaction support in SQL – Need for Concurrency – Concurrency control –Two Phase Locking- Timestamp – Multiversion – Validation and Snapshot isolation– Multiple Granularity locking – Deadlock Handling – Recovery Concepts – Recovery based on deferred and immediate update – Shadow paging – ARIES Algorithm

UNIT IV IMPLEMENTATION TECHNIQUES **9**

RAID – File Organization – Organization of Records in Files – Data dictionary Storage – Column Oriented Storage– Indexing and Hashing –Ordered Indices – B+ tree Index Files – B tree Index Files – Static Hashing – Dynamic Hashing – Query Processing Overview – Algorithms for Selection, Sorting and join operations – Query optimization using Heuristics - Cost Estimation

UNIT V ADVANCED TOPICS **9**

Distributed Databases: Architecture, Data Storage, Transaction Processing, Query processing and optimization – NOSQL Databases: Introduction – CAP Theorem – Document Based systems – Key value Stores – Column Based Systems – Graph Databases. Database Security: Security issues – Access control based on privileges – Role Based access control – SQL Injection – Statistical Database security – Flow control – Encryption and Public Key infrastructures – Challenges

COURSE OUTCOMES:

Upon completion of this course, the students will be able to

CO1: Construct SQL Queries using relational algebra

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CO2: Design database using ER model and normalize the database

CO3: Construct queries to handle transaction processing and maintain consistency of the database

CO4: Compare and contrast various indexing strategies and apply the knowledge to tune the performance of the database

CO5: Appraise how advanced databases differ from Relational Databases and find a suitable database for the given requirement.

TOTAL:45 PERIODS

TEXT BOOKS:

1. Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database System Concepts", Seventh Edition, McGraw Hill, 2020.
2. Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database Systems", Seventh Edition, Pearson Education, 2017

REFERENCES:

1. C J Date, A Kannan, S Swamynathan, "An Introduction to Database Systems", Eighth Edition, Pearson Education, 2006.

DIGITALIZATION OF HOSPITAL MANAGEMENT SYSTEM

A PROJECT REPORT

Submitted by

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S.NAVEENKUMAR (920819104025)

G.SRIVATHS KARTHIC (920819104042)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

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BONAFIDE CERTIFICATE

Certified that this project report **"DIGITALIZATION OF HOSPITAL MANAGEMENT SYSTEM"** is the bonafide work of **"M.AJAYKUMAR (920819104003), S.NAVEENKUMAR (920819104025), G.SRIVATHS KARTHIC (920819104042)"** who carried out the project work under my supervision.

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ABSTRACT

In most developing countries, provision of basic preventive, promotive and curative services is a major concern of the Government. With growing population and advancement in the medical technology and increasing expectation of the people especially for quality curative care, it has now become imperative to provide quality health care services through the established institutions.

However, these services have not been successful in gaining the faith and confidence of the people because of lack of specialists, facilities and accountability, along with the paucity of resources and non-involvement of the community. Hospital Management System is a simple yet effective management structure. This system acts for the hospitals to manage the affairs of the hospital.

HMS is free to prescribe, generate and use the functioning and maintaining the quality of services.

The project Hospital Management system includes registration of patients, storing their details into the system. The software has the facility to give a unique id for every patient and stores the details of every patient.

The Hospital Management System can be entered using a username and password. It is accessible either by an administrator .Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and make the data processing very fast.

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CHAPTER - 13

CONCLUSION AND FUTURE ENHANCEMENT

This proposed system paves a new path in the medical industry by bringing in new way of managing hospitals by reducing labour work and digitalizing the process of functioning of the hospital. This eases the process of the hospital administration by reducing the workload of managing the appointments manually. This also reduces the amount of paper and such materials that are 'used up while the process of booking an appointment and delivery of scan reports. This further increases the efficiency of the managing process of the hospital system. As a part of the future enhancement that is to brought to this system includes implementation of the digital consulting and remote consulting options which would reduce the patients travelling expenses and further increase the productivity of the hospital management.

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CS3401 **ALGORITHMS** **L T P C**
3 0 2 4

COURSE OBJECTIVES

- To understand and apply the algorithm analysis techniques on searching and sorting algorithms
- To critically analyze the efficiency of graph algorithms
- To understand different algorithm design techniques
- To solve programming problems using state space tree
- To understand the concepts behind NP Completeness, Approximation algorithms and randomized algorithms.

UNIT I INTRODUCTION 9

Algorithm analysis: Time and space complexity - Asymptotic Notations and its properties Best case, Worst case and average case analysis – Recurrence relation: substitution method - Lower bounds – **searching:** linear search, binary search and Interpolation Search, **Pattern search:** The naïve string-matching algorithm - Rabin-Karp algorithm - Knuth-Morris-Pratt algorithm. **Sorting:** Insertion sort – heap sort

UNIT II GRAPH ALGORITHMS 9

Graph algorithms: Representations of graphs - Graph traversal: DFS – BFS - applications - Connectivity, strong connectivity, bi-connectivity - Minimum spanning tree: Kruskal's and Prim's algorithm- Shortest path: Bellman-Ford algorithm - Dijkstra's algorithm - Floyd-Warshall algorithm Network flow: Flow networks - Ford-Fulkerson method – Matching: Maximum bipartite matching

UNIT III ALGORITHM DESIGN TECHNIQUES 9

Divide and Conquer methodology: Finding maximum and minimum - Merge sort - Quick sort **Dynamic programming:** Elements of dynamic programming — Matrix-chain multiplication - Multi stage graph — Optimal Binary Search Trees. **Greedy Technique**: Elements of the greedy strategy
- Activity-selection problem – Optimal Merge pattern — Huffman Trees.

UNIT IV STATE SPACE SEARCH ALGORITHMS 9

Backtracking: n-Queens problem - Hamiltonian Circuit Problem - Subset Sum Problem – Graph colouring problem **Branch and Bound**: Solving 15-Puzzle problem - Assignment problem - Knapsack Problem - Travelling Salesman Problem

UNIT V NP-COMPLETE AND APPROXIMATION ALGORITHM 9

Tractable and intractable problems: Polynomial time algorithms – Venn diagram representation - NP-algorithms - NP-hardness and NP-completeness – Bin Packing problem - Problem reduction: TSP – 3-CNF problem. **Approximation Algorithms**: TSP - **Randomized Algorithms**: concept and application - primality testing - randomized quick sort - Finding k^{th} smallest number

45 PERIODS

COURSE OUTCOMES:

At the end of this course, the students will be able to:

CO1: Analyze the efficiency of algorithms using various frameworks

CO2: Apply graph algorithms to solve problems and analyze their efficiency.

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CO3: Make use of algorithm design techniques like divide and conquer, dynamic programming and greedy techniques to solve problems

CO4: Use the state space tree method for solving problems.

CO5: Solve problems using approximation algorithms and randomized algorithms

TEXT BOOKS:

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, "Introduction to Algorithms", 3rd Edition, Prentice Hall of India, 2009.
2. Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran "Computer Algorithms/C++" Orient Blackswan, 2nd Edition, 2019.

REFERENCES:

1. Anany Levitin, "Introduction to the Design and Analysis of Algorithms", 3rd Edition, Pearson Education, 2012.
2. Alfred V. Aho, John E. Hopcroft and Jeffrey D. Ullman, "Data Structures and Algorithms", Reprint Edition, Pearson Education, 2006.
3. S. Sridhar, "Design and Analysis of Algorithms", Oxford university press, 2014.

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Triflorum

Triflorum Engineering and Business Solutions

Date: 20.12.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.Afhran Nisha. A ,** final year student of BE-Computer science and Engineering, **NPR college of Engineering & Technology, Natham, Dindigul**, has successfully completed Internship training in our organization from **01.12.2022 to 08.12.2022.**

During the above period we found her sincere and hardworking. He has taken proper initiative efforts towards completed his training.

We wish him all the best for the future career.

Managing Director

Mr.S.Kumaraguru

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CS3451 **INTRODUCTION TO OPERATING SYSTEMS** **L T P C**
3 0 0 3

COURSE OBJECTIVES:

- To understand the basics and functions of operating systems.
- To understand processes and threads
- To analyze scheduling algorithms and process synchronization.
- To understand the concept of deadlocks.
- To analyze various memory management schemes.
- To be familiar with I/O management and file systems.
- To be familiar with the basics of virtual machines and Mobile OS like iOS and Android.

UNIT I INTRODUCTION **7**

Computer System - Elements and organization; Operating System Overview - Objectives and Functions - Evolution of Operating System; Operating System Structures – Operating System Services - User Operating System Interface - System Calls – System Programs - Design and Implementation - Structuring methods.

UNIT II PROCESS MANAGEMENT **11**

Processes - Process Concept - Process Scheduling - Operations on Processes - Inter-process Communication; CPU Scheduling - Scheduling criteria - Scheduling algorithms: Threads - Multithread Models – Threading issues; Process Synchronization - The Critical-Section problem - Synchronization hardware – Semaphores – Mutex - Classical problems of synchronization - Monitors; Deadlock - Methods for handling deadlocks, Deadlock prevention, Deadlock avoidance, Deadlock detection, Recovery from deadlock.

UNIT III MEMORY MANAGEMENT **10**

Main Memory - Swapping - Contiguous Memory Allocation – Paging - Structure of the Page Table - Segmentation, Segmentation with paging; Virtual Memory - Demand Paging – Copy on Write - Page Replacement - Allocation of Frames –Thrashing.

UNIT IV STORAGE MANAGEMENT **10**

Mass Storage system – Disk Structure - Disk Scheduling and Management; File-System Interface - File concept - Access methods - Directory Structure - Directory organization - File system mounting

- File Sharing and Protection; File System Implementation - File System Structure - Directory implementation - Allocation Methods - Free Space Management; I/O Systems – I/O Hardware, Application I/O interface, Kernel I/O subsystem

UNIT V VIRTUAL MACHINES AND MOBILE OS **7**

Virtual Machines – History, Benefits and Features, Building Blocks, Types of Virtual Machines and their Implementations, Virtualization and Operating-System Components; Mobile OS - iOS and Android.

TOTAL:45 PERIODS

COURSE OUTCOMES:

At the end of this course, the students will be able to:

CO1 : Analyze various scheduling algorithms and process synchronization.

CO2 : Explain deadlock prevention and avoidance algorithms.

CO3 : Compare and contrast various memory management schemes.

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CO4 : Explain the functionality of file systems, I/O systems, and Virtualization
CO5 : Compare iOS and Android Operating Systems

TEXT BOOKS:

1. Abraham Silberschatz, Peter Baer Galvin and Greg Gagne, "Operating System Concepts"ǁ, 10th Edition, John Wiley and Sons Inc., 2018.
2. Andrew S Tanenbaum, "Modern Operating Systems", Pearson, 5th Edition, 2022 New Delhi.

REFERENCES:

1. Ramaz Elmasri, A. Gil Carrick, David Levine, " Operating Systems – A Spiral Approach", Tata McGraw Hill Edition, 2010.
2. William Stallings, "Operating Systems: Internals and Design Principles",7th Edition, Prentice Hall, 2018.
3. Achyut S.Godbole, Atul Kahate, "Operating Systems", McGraw Hill Education, 2016.

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Date: 20.12.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.Indhumathi V,** final year student of BE-Computer science and Engineering, **NPR college of Engineering & Technology, Natham, Dindigul**, has successfully completed Internship training in our organization from **01.12.2022 to 08.12.2022.**

During the above period we found her sincere and hardworking. He has taken proper initiative efforts towards completed his training.

We wish him all the best for the future career.

Managing Director
Mr.S.Kumaraguru

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CS8591 **COMPUTER NETWORKS**

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the protocol layering and physical level communication.
- To analyze the performance of a network.
- To understand the various components required to build different networks.
- To learn the functions of network layer and the various routing protocols.
- To familiarize the functions and protocols of the Transport layer.

UNIT I INTRODUCTION AND PHYSICAL LAYER 9

Networks – Network Types – Protocol Layering – TCP/IP Protocol suite – OSI Model – Physical Layer: Performance – Transmission media – Switching – Circuit-switched Networks – Packet Switching.

UNIT II DATA-LINK LAYER & MEDIA ACCESS 9

Introduction – Link-Layer Addressing -- DLC Services – Data-Link Layer Protocols – HDLC – PPP - Media Access Control - Wired LANs: Ethernet - Wireless LANs – Introduction – IEEE 802.11, Bluetooth – Connecting Devices.

UNIT III NETWORK LAYER 9

Network Layer Services – Packet switching – Performance -- IPV4 Addresses – Forwarding of IP Packets - Network Layer Protocols: IP, ICMP v4 – Unicast Routing Algorithms – Protocols – Multicasting Basics – IPV6 Addressing – IPV6 Protocol.

UNIT IV TRANSPORT LAYER 9

Introduction – Transport Layer Protocols – Services – Port Numbers – User Datagram Protocol – Transmission Control Protocol – SCTP.

UNIT V APPLICATION LAYER 9

WWW and HTTP – FTP – Email –Telnet –SSH – DNS – SNMP.

TOTAL: 45 PERIODS

OUTCOMES:

On Completion of the course, the students should be able to:

- Understand the basic layers and its functions in computer networks.
- Evaluate the performance of a network.
- Understand the basics of how data flows from one node to another.
- Analyze and design routing algorithms.
- Design protocols for various functions in the network.
- Understand the working of various application layer protocols.

TEXT BOOK:

1. Behrouz A. Forouzan, Data Communications and Networking, Fifth Edition TMH, 2013.

REFERENCES

1. Larry L. Peterson, Bruce S. Davie, Computer Networks: A Systems Approach, Fifth Edition, Morgan Kaufmann Publishers Inc., 2012.
2. William Stallings, Data and Computer Communications, Tenth Edition, Pearson Education, 2013.

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3. Nader F. Mir, Computer and Communication Networks, Second Edition, Prentice Hall, 2014.
4. Ying-Dar Lin, Ren-Hung Hwang and Fred Baker, Computer Networks: An Open Source Approach, McGraw Hill Publisher, 2011.
5. James F. Kurose, Keith W. Ross, Computer Networking, A Top-Down Approach Featuring the Internet, Sixth Edition, Pearson Education, 2013.

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Date: 15.05.2023

CERTIFICATE OF INTERNSHIP TRAINING

This is to certify that **Mr.Anandraj M**from NPR College Engineering and Technology has successfully completed internship training from **17.04.2023 to 02.05.2023** in our organization.

During the tenure of training, we found him very sincere, attentive and good behaviour.

For C3 TECHNOLOGIES

Managing Director

Dr. J.SUNDARARAJA
B.E., M.Tech.,
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EC8691 MICROPROCESSORS AND MICROCONTROLLERS **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the Architecture of 8086 microprocessor.
- To learn the design aspects of I/O and Memory Interfacing circuits.
- To interface microprocessors with supporting chips.
- To study the Architecture of 8051 microcontroller.
- To design a microcontroller based system

UNIT I THE 8086 MICROPROCESSOR 9

Introduction to 8086 – Microprocessor architecture – Addressing modes - Instruction set and assembler directives – Assembly language programming – Modular Programming - Linking and Relocation - Stacks - Procedures – Macros – Interrupts and interrupt service routines – Byte and String Manipulation.

UNIT II 8086 SYSTEM BUS STRUCTURE 9

8086 signals – Basic configurations - System bus timing –System design using 8086 – I/O programming – Introduction to Multiprogramming – System Bus Structure – Multiprocessor configurations – Coprocessor, Closely coupled and loosely Coupled configurations – Introduction to advanced processors.

UNIT III I/O INTERFACING 9

Memory Interfacing and I/O interfacing - Parallel communication interface – Serial communication interface – D/A and A/D Interface - Timer – Keyboard /display controller – Interrupt controller – DMA controller – Programming and applications Case studies: Traffic Light control, LED display , LCD display, Keyboard display interface and Alarm Controller.

UNIT IV MICROCONTROLLER 9

Architecture of 8051 – Special Function Registers(SFRs) - I/O Pins Ports and Circuits - Instruction set - Addressing modes - Assembly language programming.

UNIT V INTERFACING MICROCONTROLLER 9

Programming 8051 Timers - Serial Port Programming - Interrupts Programming – LCD & Keyboard Interfacing - ADC, DAC & Sensor Interfacing - External Memory Interface- Stepper Motor and Waveform generation - Comparison of Microprocessor, Microcontroller, PIC and ARM processors

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Understand and execute programs based on 8086 microprocessor.
- Design Memory Interfacing circuits.
- Design and interface I/O circuits.
- Design and implement 8051 microcontroller based systems.

TEXT BOOKS:

1. Yu-Cheng Liu, Glenn A.Gibson, —Microcomputer Systems: The 8086 / 8088 Family - Architecture, Programming and Designl, Second Edition, Prentice Hall of India, 2007. (UNIT I- III)

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2. Mohamed Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay, —The 8051 Microcontroller and Embedded Systems: Using Assembly and C‖, Second Edition, Pearson education, 2011. (UNIT IV-V)

REFERENCES:

1. Doughlas V.Hall, —Microprocessors and Interfacing, Programming and Hardware‖,TMH,2012
2. A.K.Ray,K.M.Bhurchandi,‖Advanced Microprocessors and Peripherals —3rd edition, Tata McGrawHill,2012

GSM BASED LPG LEAKAGE DETECTION AND PREVENTION SYSTEM

A PROJECT REPORT

Submitted by

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in partial fulfillment for the award of degree

of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY

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ABSTRACT

The Internet of things (IoT) is the system of gadgets, vehicles, and home machines that contain hardware, programming, actuators, and network which enables these things to interface, collaborate and trade information. IoT includes broadening Internet network past standard device, for example, work areas, workstations, cell phones and tablets, to any scope of generally stupid or non-web empowered physical device and ordinary articles. Installed with innovation, these gadgets can convey and connect over the Internet, and they can be remotely observed and controlled. Not with standing causing flame and blast dangers, holes canslaughter vegetation, including huge trees, and may discharge amazing ozone harming substances to the environment. Keywords: IOT, MQ5 sensor, Arduino module, GSM networks.

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CHAPTER 11

CONCLUSION AND FUTURE WORK

This work sets out the problem of LPG leakages that have resulted innumerous fatal casualties as well as damages to properties worth billions of dollars. As such a device that is capable of detecting such leakage sand shutting off the gas supply was designed and simulated successfully with the aid of Proteus. The device is able to sense the leakage of LPG through a highly sensitiveMQ-6 gas sensor and with the aid of a microcontroller activate a buzzer which buzzes to alert anyone nearby of leakage. An SMS with information "LPG Leakage Detected" is sent from the SIM900A GSM Module as a backup to alert the appropriate authority of leakage. Also, supply is shut down by the solenoid value unit under one minute to avoid wastage and possible accident.

Future Work

In the future implementation we are going to provide voice implementation that will guide the user by audible sounds. Further it can be provided with emergency alerts in which we can send messages to the close ones . For this function GPS tracking should be implemented in this plug-in device.

This design should be taken up, funded and implemented by any individual who has an interest in the project, as it has a great potential of mitigating against accidents associated LPG leakage and a weighing scale be incorporated into the design to measure the amount of gas used or left in the gas tank or cylinder.

In this proposed model we want to achieve two aspects:

1. To design an embedded system:

In this we are going to use the AVR microcontroller that control all the module and things.

2. Accident avoiding feature:

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CS8501 **THEORY OF COMPUTATION** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the language hierarchy
- To construct automata for any given pattern and find its equivalent regular expressions
- To design a context free grammar for any given language
- To understand Turing machines and their capability
- To understand undecidable problems and NP class problems

UNIT I AUTOMATA FUNDAMENTALS 9

Introduction to formal proof – Additional forms of Proof – Inductive Proofs -Finite Automata – Deterministic Finite Automata – Non-deterministic Finite Automata – Finite Automata with Epsilon Transitions

UNIT II REGULAR EXPRESSIONS AND LANGUAGES 9

Regular Expressions – FA and Regular Expressions – Proving Languages not to be regular – Closure Properties of Regular Languages – Equivalence and Minimization of Automata.

UNIT III CONTEXT FREE GRAMMAR AND LANGUAGES 9

CFG – Parse Trees – Ambiguity in Grammars and Languages – Definition of the Pushdown Automata – Languages of a Pushdown Automata – Equivalence of Pushdown Automata and CFG, Deterministic Pushdown Automata.

UNIT IV PROPERTIES OF CONTEXT FREE LANGUAGES 9

Normal Forms for CFG – Pumping Lemma for CFL – Closure Properties of CFL – Turing Machines– Programming Techniques for TM.

UNIT V UNDECIDABILITY 9

Non Recursive Enumerable (RE) Language – Undecidable Problem with RE – Undecidable Problems about TM – Post's Correspondence Problem, The Class P and NP.

TOTAL :45PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Construct automata, regular expression for any pattern.
- Write Context free grammar for any construct.
- Design Turing machines for any language.
- Propose computation solutions using Turing machines.
- Derive whether a problem is decidable or not.

TEXT BOOK:

1. J.E.Hopcroft, R.Motwani and J.D Ullman, —Introduction to Automata Theory, Languages and Computationsl, Second Edition, Pearson Education, 2003.

REFERENCES:

1. H.R.Lewis and C.H.Papadimitriou, —Elements of the theory of Computationl, Second Edition, PHI, 2003.
2. J.Martin, —Introduction to Languages and the Theory of Computationl, Third Edition, TMH, 2003.

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3. Micheal Sipser, —Introduction of the Theory and Computation, Thomson Brokecole, 1997.

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Date: 15.05.2023

CERTIFICATE OF INTERNSHIP TRAINING

This is to certify that **Mr. Harivignesh** K from NPR College Engineering and Technology has successfully completed internship training from **17.04.2023 to 02.05.2023** i in our organization.

During the tenure of training, we found him very sincere, attentive and good behaviour.

For C3 TECHNOLOGIES
Managing Director

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CS8592 **OBJECT ORIENTED ANALYSIS AND DESIGN** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the fundamentals of object modeling
- To understand and differentiate Unified Process from other approaches.
- To design with static UML diagrams.
- To design with the UML dynamic and implementation diagrams.
- To improve the software design with design patterns.
- To test the software against its requirements specification

UNIT I UNIFIED PROCESS AND USE CASE DIAGRAMS **9**

Introduction to OOAD with OO Basics - Unified Process – UML diagrams - Use Case –Case study– the Next Gen POS system, Inception -Use case Modelling – Relating Use cases – include, extend and generalization – When to use Use-cases

UNIT II STATIC UML DIAGRAMS **9**

Class Diagram— Elaboration – Domain Model – Finding conceptual classes and description classes – Associations – Attributes – Domain model refinement – Finding conceptual class Hierarchies – Aggregation and Composition - Relationship between sequence diagrams and use cases – When to use Class Diagrams

UNIT III DYNAMIC AND IMPLEMENTATION UML DIAGRAMS **9**

Dynamic Diagrams – UML interaction diagrams - System sequence diagram – Collaboration diagram – When to use Communication Diagrams - State machine diagram and Modelling –When to use State Diagrams - Activity diagram – When to use activity diagrams

Implementation Diagrams - UML package diagram - When to use package diagrams - Component and Deployment Diagrams – When to use Component and Deployment diagrams

UNIT IV DESIGN PATTERNS **9**

GRASP: Designing objects with responsibilities – Creator – Information expert – Low Coupling – High Cohesion – Controller

Design Patterns – creational – factory method – **structural** – Bridge – Adapter – **behavioural** – Strategy – observer –Applying GoF design patterns – Mapping design to code

UNIT V TESTING **9**

Object Oriented Methodologies – Software Quality Assurance – Impact of object orientation on Testing – Develop Test Cases and Test Plans

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the students will be able to:

- Express software design with UML diagrams
- Design software applications using OO concepts.
- Identify various scenarios based on software requirements
- Transform UML based software design into pattern based design using design patterns
- Understand the various testing methodologies for OO software

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TEXT BOOKS:

1. Craig Larman, —Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Developmentl, Third Edition, Pearson Education, 2005.
2. Ali Bahrami - Object Oriented Systems Development - McGraw Hill International Edition - 1999

REFERENCES:

1. Erich Gamma, a n d Richard Helm, Ralph Johnson, John Vlissides, —Design patterns: Elements of Reusable Object-Oriented Softwarel, Addison-Wesley, 1995.
2. Martin Fowler, —UML Distilled: A Brief Guide to the Standard Object Modeling Languagel, Third edition, Addison Wesley, 2003.

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Date: 15.03.2023

CERTIFICATE OF COMPLETION

This is to certify that **Ms. Bavithra C** student of BE-CSE final year, NPR college of Engineering & Technology, Natham, Dindigul, has successfully completed in-plant training from **01.03.2023 to 08.03.2023.**

During this period her performance was found good.

We wish her good luck for all the future endeavours and looks forward to work in future.

For Xplore IT Corp

Authorized Signatory

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CS8651 **INTERNET PROGRAMMING**

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand different Internet Technologies.
- To learn java-specific web services architecture

UNIT I **WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0** **9**

Web Essentials: Clients, Servers and Communication – The Internet – Basic Internet protocols – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Semantic elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations.

UNIT II **CLIENT SIDE PROGRAMMING** **9**

Java Script: An introduction to JavaScript–JavaScript DOM Model-Date and Objects,- Regular Expressions- Exception Handling-Validation-Built-in objects-Event Handling- DHTML with JavaScript- JSON introduction – Syntax – Function Files – Http Request – SQL.

UNIT III **SERVER SIDE PROGRAMMING** **9**

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies- Installing and Configuring Apache Tomcat Web Server- DATABASE CONNECTIVITY: JDBC perspectives, JDBC program example - JSP:
Understanding Java Server Pages-JSP Standard Tag Library (JSTL)-Creating HTML forms by embedding JSP code.

UNIT IV **PHP and XML** **9**

An introduction to PHP: PHP- Using PHP- Variables- Program control- Built-in functions- Form Validation- Regular Expressions - File handling – Cookies - Connecting to Database.
XML: Basic XML- Document Type Definition- XML Schema DOM and Presenting XML, XML Parsers and Validation, XSL and XSLT Transformation, News Feed (RSS and ATOM).

UNIT V **INTRODUCTION TO AJAX and WEB SERVICES** **9**

AJAX: Ajax Client Server Architecture-XML Http Request Object-Call Back Methods; Web Services: Introduction- Java web services Basics – Creating, Publishing, Testing and Describing a Web services (WSDL)-Consuming a web service, Database Driven web service from an application –SOAP.

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Construct a basic website using HTML and Cascading Style Sheets.
- Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
- Develop server side programs using Servlets and JSP.
- Construct simple web pages in PHP and to represent data in XML format.
- Use AJAX and web services to develop interactive web applications

TEXT BOOK:

1. Deitel and Deitel and Nieto, —Internet and World Wide Web - How to Programll, Prentice Hall, 5th Edition, 2011.

REFERENCES:

1. Stephen Wynkoop and John Burke —Running a Perfect Websitell, QUE, 2nd Edition,1999.
2. Chris Bates, Web Programming – Building Intranet Applications. 3rd Edition. Wiley Publications. 2009.
3. Jeffrey C and Jackson, —Web Technologies A Computer Science Perspectivell, Pearson Education, 2011.
4. Gopalan N.P. and Akilandeswari J., —Web Technologyll, Prentice Hall of India. 2011.
5. UttamK.Roy, —Web Technologiesll, Oxford University Press, 2011.

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Expect The World From Us
A Division of CMS IT Services Pvt. Ltd

24th Nov '2022

To Whom So Ever It May Concern

This is to certify that **Mr.Hari Deevagan M,** Department of Computer Science & Engineering, NPR College of Engineering & Technology, Natham, Dindigul has undergone in-plant training from **02.11.2022 to 11.11.2022** in our organization.

During the period of his training, he had shown keen interest towards learning.

He demonstrated good design skills with self-motivated attitude to learn new things.

We wish him future endeavor.

Yours Sincerely,
For **CMS IT Services Pvt Ltd.,**

Authorized Signatory,

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CS8691 **ARTIFICIAL INTELLIGENCE** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION **9**

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents–Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

UNIT II PROBLEM SOLVING METHODS **9**

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal
Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION **9**

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining-Backward Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS **9**

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS **9**

AI applications – Language Models – Information Retrieval- Information Extraction – Natural Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL:45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXT BOOKS:

1. S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2009.

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2. I. Bratko, —Prolog: Programming for Artificial Intelligence‖, Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.

REFERENCES:

1. M. Tim Jones, —Artificial Intelligence: A Systems Approach(Computer Science)‖, Jones and Bartlett Publishers, Inc.; First Edition, 2008
2. Nils J. Nilsson, —The Quest for Artificial Intelligence‖, Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish,‖ Programming in Prolog: Using the ISO Standard‖, Fifth Edition, Springer, 2003.
4. Gerhard Weiss, —Multi Agent Systems‖, Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, —Artificial Intelligence: Foundations of Computational Agents‖, Cambridge University Press, 2010.

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REAL TIME SECURITY SYSTEM FOR ATM USER AUTHENTICATION

A PROJECT REPORT

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in

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MAY 2023

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Certified that this project report **"Real Time Security System For ATM User Authentication"** is the bonafide work of **"HARIDEEVAGAN.M (920819104013), GUHAN . P (920819104011)** who carried out theproject work under my supervision.

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ABSTRACT

ATM or Automated Teller Machines are widely used by people nowadays. Performing cash withdrawal transaction with ATM is increasing day by day. ATM is very important device throughout the world. The existing conventional ATM is vulnerable to crimes because of the rapid technology development. A total of 270,000 reports have been reported regarding debit card fraud and this was the most reported form of identity theft in 2021. A secure and efficient ATM is needed to increase the overall experience, usability, and convenience of the transaction at the ATM. In today's computer vision is advancing at a breakneck pace. The recent progress in biometric identification techniques, including finger printing, retina scanning, and facial recognition has made a great effort to rescue the unsafe situation at the ATM. Specifically, the goal of this project is to give a computer vision method to solve the security risk associated with accessing ATM machines. This project proposes an automatic teller machine security model that uses electronic facial recognition using Deep Convolutional Neural Network(DCNN). If this technology becomes widely used, faces would be protected as well as their accounts. Face Verification Clickbait Link will be generated and sent to bank account holder to verify the identity of unauthorized user through some dedicated artificial intelligent agents, for remote certification.

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CHAPTER 11

CONCLUSION

11.1 Conclusion

Biometrics as means of identifying and authenticating account owners at the Automated Teller Machines gives the needed and much anticipated solution to the problem of illegal transactions. In this project, we have developed to proffer a solution to the much-dreaded issue of fraudulent transactions through Automated Teller Machine by biometrics and Unknown Face Forwarder that can be made possible only when the account holder is physically or far present. Thus, it eliminates cases of illegal transactions at the ATM points without the knowledge of the authentic owner. Using a biometric feature for identification is strong and it is further fortified when another is used at authentication level. The ATM security design incorporates the possible proxy usage of the existing security tools (such as ATM Card) and information (such as PIN) into the existing ATM security mechanisms. It involves, on real-time basis, the bank account owner in all the available and accessible transactions

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CS8601 **MOBILE COMPUTING** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the basic concepts of mobile computing.
- To learn the basics of mobile telecommunication system .
- To be familiar with the network layer protocols and Ad-Hoc networks.
- To know the basis of transport and application layer protocols.
- To gain knowledge about different mobile platforms and application development.

UNIT I INTRODUCTION **9**

Introduction to Mobile Computing – Applications of Mobile Computing- Generations of Mobile Communication Technologies- Multiplexing – Spread spectrum -MAC Protocols – SDMA- TDMA- FDMA- CDMA

UNIT II MOBILE TELECOMMUNICATION SYSTEM **9**

Introduction to Cellular Systems - GSM – Services & Architecture – Protocols – Connection Establishment – Frequency Allocation – Routing – Mobility Management – Security – GPRS-UMTS – Architecture – Handover - Security

UNIT III MOBILE NETWORK LAYER **9**

Mobile IP – DHCP – AdHoc– Proactive protocol-DSDV, Reactive Routing Protocols – DSR, AODV , Hybrid routing –ZRP, Multicast Routing- ODMRP, Vehicular Ad Hoc networks (VANET) –MANET Vs VANET – Security.

UNIT IV MOBILE TRANSPORT AND APPLICATION LAYER **9**

Mobile TCP– WAP – Architecture – WDP – WTLS – WTP –WSP – WAE – WTA Architecture – WML

UNIT V MOBILE PLATFORMS AND APPLICATIONS **9**

Mobile Device Operating Systems – Special Constraints & Requirements – Commercial Mobile Operating Systems – Software Development Kit: iOS, Android, BlackBerry, Windows Phone - MCommerce – Structure – Pros & Cons – Mobile Payment System – Security Issues

TOTAL 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Explain the basics of mobile telecommunication systems
- Illustrate the generations of telecommunication systems in wireless networks
- Determine the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network
- Explain the functionality of Transport and Application layers
- Develop a mobile application using android/blackberry/ios/Windows SDK

TEXT BOOKS:

1. Jochen Schiller, —Mobile Communicationsl, PHI, Second Edition, 2003.
2. Prasant Kumar Pattnaik, Rajib Mall, —Fundamentals of Mobile Computingl, PHI Learning Pvt.Ltd, New Delhi – 2012

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REFERENCES

1. Dharma Prakash Agarval, Qing and An Zeng, "Introduction to Wireless and Mobile systems",Thomson Asia Pvt Ltd. 2005.
2. Uwe Hansmann, Lothar Merk, Martin S, Nicklons and Thomas Stober, —Principles of
3. Mobile Computingl, Springer, 2003.
4. William.C.Y.Lee,—Mobile Cellular Telecommunications-Analog and Digital Systemsl. Second Edition.TataMcGraw Hill Edition ,2006.
5. C.K.Toh, —AdHoc Mobile Wireless Networksl, First Edition, Pearson Education, 2002.
6. Android Developers : http://developer.android.com/index.html
   Apple Developer : https://developer.apple.com/
7. Windows Phone DevCenter : http://developer.windowsphone.com
   BlackBerry Developer : http://developer.blackberry.com

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MOBILE APPLICATION FOR MECHANIC SERVICE MANAGEMENT SYSTEM

A PROJECT REPORT

Submitted by

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in partial fulfillment for the award of degree

of

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BONAFIDE CERTIFICATE

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INTERNAL EXAMINER

EXTERNAL EXAMINER

Dr. J.SUNDARARAJAN,
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ABSTRACT

It is not very unusual for anyone to have a break down with their car at least once. Now, if the break down happens in a familiar place or a well-populated one, it is easy to inquire about a service centre or a mechanic who can come to our rescue. But many of these unfortunate incidents like highway journey it happens in the most possible remote locations without a soul nearby to help. It is in these situations our proposed app is very useful to people. The project presents an approach to solve the problem in vehicles repairing / services in emergency situations at highway. Collecting the information reports from all vehicle service / repairing shops in separate area / district. In that emergency period user's location and the problem is send then nearby shops mechanic quickly come to this place and solve the problem and also available to payment for this service via card / cash. The project includes some algorithm to assign geo graphical (Navigation) algorithm used on particular lace will be track. In our daily life we don't know when and where we get stuck on the road and we don't know where we are and we also won't be able to find the nearest mechanic location. This project targets to develop an android application that will help the user to register through installing the application and can get access to the nearest mechanics location and contact him personally this uses the internet and messages permissions to go on with the application.

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CHAPTER – 11

CONCLUSION

Car being an important part of our daily life needs to be regularly serviced for efficient working. Automation with IOT makes the whole experience of car servicing smart and fast. Above proposed system not only manages real-time service of our car but also provides necessary data and predictions to help us determine the time for next service and approximate cost. Though this system adds to the servicing cost, but it prevents service centers from charging more and makes customer aware about all the modulations done on car. All in all, this system saves time and money of customer. Technologies like IoT and RPA has fundamentally altered the way we live and work. It has made our life easier. This system increases the efficiency of our car and also reduces customer's effort at the same time in highways.

The proposed paper shows the flow, structure and working of the E-Mechanic Service EMS is user friendly i.e. easy to use in highways. It is free of cost on android store. Thus, it is time a time saving as well as cost efficient application. So, we can conclude that the proposed system can be used to reduce human efforts and luxuriate human lives, hand in hand, with the modern technology.

NATHAM

Dr. J.SUNDARARAJA M.E.,M.Tech.,P.
Principal
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CS8602 **COMPILER DESIGN**

L	T	P	C
3	0	2	4

OBJECTIVES:

- To learn the various phases of compiler.
- To learn the various parsing techniques.
- To understand intermediate code generation and run-time environment.
- To learn to implement front-end of the compiler.
- To learn to implement code generator.

UNIT I INTRODUCTION TO COMPILERS **9**

Structure of a compiler – Lexical Analysis – Role of Lexical Analyzer – Input Buffering – Specification of Tokens – Recognition of Tokens – Lex – Finite Automata – Regular Expressions to Automata – Minimizing DFA.

UNIT II SYNTAX ANALYSIS **12**

Role of Parser – Grammars – Error Handling – Context-free grammars – Writing a grammar – Top Down Parsing - General Strategies Recursive Descent Parser Predictive Parser-LL(1) Parser-Shift Reduce Parser-LR Parser-LR (0)Item Construction of SLR Parsing Table - Introduction to LALR Parser - Error Handling and Recovery in Syntax Analyzer-YACC.

UNIT III INTERMEDIATE CODE GENERATION **8**

Syntax Directed Definitions, Evaluation Orders for Syntax Directed Definitions, Intermediate Languages: Syntax Tree, Three Address Code, Types and Declarations, Translation of Expressions, Type Checking.

UNIT IV RUN-TIME ENVIRONMENT AND CODE GENERATION **8**

Storage Organization, Stack Allocation Space, Access to Non-local Data on the Stack, Heap Management - Issues in Code Generation - Design of a simple Code Generator.

UNIT V CODE OPTIMIZATION **8**

Principal Sources of Optimization – Peep-hole optimization - DAG- Optimization of Basic Blocks-Global Data Flow Analysis - Efficient Data Flow Algorithm.

LIST OF EXPERIMENTS:

1. Develop a lexical analyzer to recognize a few patterns in C. (Ex. identifiers, constants, comments, operators etc.). Create a symbol table, while recognizing identifiers.
2. Implement a Lexical Analyzer using Lex Tool
3. Implement an Arithmetic Calculator using LEX and YACC
4. Generate three address code for a simple program using LEX and YACC.
5. Implement simple code optimization techniques (Constant folding, Strength reduction and Algebraic transformation)
6. Implement back-end of the compiler for which the three address code is given as input and the 8086 assembly language code is produced as output.

PRACTICALS	**30**	**PERIODS**
THEORY	**45**	**PERIODS**
TOTAL :	**75**	**PERIODS**

OUTCOMES:

On Completion of the course, the students should be able to:

- Understand the different phases of compiler.
- Design a lexical analyzer for a sample language.
- Apply different parsing algorithms to develop the parsers for a given grammar.
- Understand syntax-directed translation and run-time environment.
- Learn to implement code optimization techniques and a simple code generator.
- Design and implement a scanner and a parser using LEX and YACC tools.

TEXT BOOK:

1. Alfred V. Aho, Monica S. Lam, Ravi Sethi, Jeffrey D. Ullman, Compilers: Principles, Techniques and Tools‖, Second Edition, Pearson Education, 2009.

REFERENCES

1. Randy Allen, Ken Kennedy, Optimizing Compilers for Modern Architectures: A Dependence based Approach, Morgan Kaufmann Publishers, 2002.
2. Steven S. Muchnick, Advanced Compiler Design and Implementation‖, Morgan Kaufmann Publishers - Elsevier Science, India, Indian Reprint 2003.
3. Keith D Cooper and Linda Torczon, Engineering a Compiler‖, Morgan Kaufmann Publishers Elsevier Science, 2004.
4. V. Raghavan, Principles of Compiler Design‖, Tata McGraw Hill Education Publishers, 2010.
5. Allen I. Holub, Compiler Design in C‖, Prentice-Hall Software Series, 1993.

CMS
Expect The World From Us
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11th, Oct' 2022

To Whom So Ever It May Concern

This is to certify that **Mr.Karthik K**, Department of Computer Science & Engineering, NPR College of Engineering & Technology, Natham, Dindigul has undergone internship training from **19.09.2022 to 04.10.2022** in our organization.

During the period of his training, he had shown keen interest towards learning.

He demonstrated good design skills with self-motivated attitude to learn new things.

We wish him future endeavor.

Yours Sincerely,
For **CMS IT Services Pvt Ltd.,**

Authorized Signatory,

Dr. J.SUNDARARAJAN, B.E., M.Tech., Ph.D.,
Principal
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CS8603 **DISTRIBUTED SYSTEMS** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the foundations of distributed systems.
- To learn issues related to clock Synchronization and the need for global state in distributed systems.
- To learn distributed mutual exclusion and deadlock detection algorithms.
- To understand the significance of agreement, fault tolerance and recovery protocols in Distributed Systems.
- To learn the characteristics of peer-to-peer and distributed shared memory systems.

UNIT I INTRODUCTION **9**

Introduction: Definition –Relation to computer system components –Motivation –Relation to parallel systems – Message-passing systems versus shared memory systems –Primitives for distributed communication –Synchronous versus asynchronous executions –Design issues and challenges. **A model of distributed computations:** A distributed program –A model of distributed executions –Models of communication networks –Global state – Cuts –Past and future cones of an event –Models of process communications. **Logical Time**: A framework for a system of logical clocks –Scalar time –Vector time – Physical clock synchronization: NTP.

UNIT II MESSAGE ORDERING & SNAPSHOTS **9**

Message ordering and group communication: Message ordering paradigms – Asynchronous execution with synchronous communication –Synchronous program order on an asynchronous system –Group communication – Causal order (CO) - Total order. **Global state and snapshot recording algorithms:** Introduction –System model and definitions – Snapshot algorithms for FIFO channels

UNIT III DISTRIBUTED MUTEX & DEADLOCK **9**

Distributed mutual exclusion algorithms: Introduction – Preliminaries – Lamport's algorithm – Ricart-Agrawala algorithm – Maekawa's algorithm – Suzuki–Kasami's broadcast algorithm. **Deadlock detection in distributed systems:** Introduction – System model – Preliminaries – Models of deadlocks – Knapp's classification – Algorithms for the single resource model, the AND model and the OR model.

UNIT IV RECOVERY & CONSENSUS **9**

Checkpointing and rollback recovery: Introduction – Background and definitions – Issues in failure recovery – Checkpoint-based recovery – Log-based rollback recovery – Coordinated checkpointing algorithm – Algorithm for asynchronous checkpointing and recovery. **Consensus and agreement algorithms:** Problem definition – Overview of results – Agreement in a failure – free system – Agreement in synchronous systems with failures.

UNIT V P2P & DISTRIBUTED SHARED MEMORY **9**

Peer-to-peer computing and overlay graphs: Introduction – Data indexing and overlays – Chord – Content addressable networks – Tapestry. **Distributed shared memory:** Abstraction and advantages – Memory consistency models –Shared memory Mutual Exclusion.

TOTAL: 45 PERIODS

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OUTCOMES:

At the end of this course, the students will be able to:

- Elucidate the foundations and issues of distributed systems
- Understand the various synchronization issues and global state for distributed systems.
- Understand the Mutual Exclusion and Deadlock detection algorithms in distributed systems
- Describe the agreement protocols and fault tolerance mechanisms in distributed systems.
- Describe the features of peer-to-peer and distributed shared memory systems

TEXT BOOKS:

1. Kshemkalyani, Ajay D., and Mukesh Singhal. Distributed computing: principles, algorithms, and systems. Cambridge University Press, 2011.
2. George Coulouris, Jean Dollimore and Tim Kindberg, —Distributed Systems Concepts and Design‖, Fifth Edition, Pearson Education, 2012.

REFERENCES:

1. Pradeep K. Sinha, "Distributed Operating Systems: Concepts and Design", Prentice Hall of India, 2007.
2. Mukesh Singhal and Niranjan G. Shivaratri, Advanced concepts in operating systems. McGraw-Hill, Inc., 1994.
3. Tanenbaum A.S., Van Steen M., —Distributed Systems: Principles and Paradigms‖, Pearson Education, 2007.
4. Liu M.L., —Distributed Computing, Principles and Applications‖, Pearson Education, 2004.
5. Nancy A Lynch, —Distributed Algorithms‖, Morgan Kaufman Publishers, USA, 2003.

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A Division of CMS IT Services Pvt. Ltd

24th Nov '2022

To Whom So Ever It May Concern

This is to certify that **Mr.Muthu Kumar P**,Department of Computer Science & Engineering, NPR College of Engineering & Technology, Natham, Dindigul has undergone in-plant training from **02.11.2022 to 11.11.2022** in our organization.

During the period of his training, he had shown keen interest towards learning.

He demonstrated good design skills with self-motivated attitude to learn new things.

We wish him future endeavor.

Yours Sincerely,
For **CMS IT Services Pvt Ltd.,**

Authorized Signatory,

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
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CS8792 CRYPTOGRAPHY AND NETWORK SECURITY

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand Cryptography Theories, Algorithms and Systems.
- To understand necessary Approaches and Techniques to build protection mechanisms in order to secure computer networks.

UNIT I INTRODUCTION 9

Security trends - Legal, Ethical and Professional Aspects of Security, Need for Security at Multiple levels, Security Policies - Model of network security – Security attacks, services and mechanisms – OSI security architecture – Classical encryption techniques: substitution techniques, transposition techniques, steganography- Foundations of modern cryptography: perfect security – information theory – product cryptosystem – cryptanalysis.

UNIT II SYMMETRIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF SYMMETRIC KEY CRYPTOGRAPHY: Algebraic structures - Modular arithmetic-Euclid"s algorithm- Congruence and matrices - Groups, Rings, Fields- Finite fields- SYMMETRIC KEY CIPHERS: SDES – Block cipher Principles of DES – Strength of DES – Differential and linear cryptanalysis - Block cipher design principles – Block cipher mode of operation – Evaluation criteria for AES – Advanced Encryption Standard - RC4 – Key distribution.

UNIT III PUBLIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF ASYMMETRIC KEY CRYPTOGRAPHY: Primes – Primality Testing – Factorization – Euler's totient function, Fermat's and Euler's Theorem - Chinese Remainder Theorem – Exponentiation and logarithm - ASYMMETRIC KEY CIPHERS: RSA cryptosystem – Key distribution – Key management – Diffie Hellman key exchange - ElGamal cryptosystem – Elliptic curve arithmetic-Elliptic curve cryptography.

UNIT IV MESSAGE AUTHENTICATION AND INTEGRITY 9

Authentication requirement – Authentication function – MAC – Hash function – Security of hash function and MAC – SHA –Digital signature and authentication protocols – DSS- Entity Authentication: Biometrics, Passwords, Challenge Response protocols- Authentication applications - Kerberos, X.509

UNIT V SECURITY PRACTICE AND SYSTEM SECURITY 9

Electronic Mail security – PGP, S/MIME – IP security – Web Security - SYSTEM SECURITY: Intruders – Malicious software – viruses – Firewalls.

TOTAL: 45 PERIODS

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A ROBUST CHAOS BASED-TECHNIQUE FOR MEDICAL IMAGE ENCRYPTION

A PROJECT REPORT

Submitted by

SAI PRASANTHY.N. S (920819104030)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY,

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MAY 2023

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BONAFIDE CERTIFICATE

Certified that this project report **"A ROBUST CHAOS BASED - TECHNIQUE FOR MEDICAL IMAGE ENCRYPTION"** is the bonafide work of **"SAI PRASANTHY.N.S (920819104030)"** who carried out the project work under my supervision.

16/5/23

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16/5/23

INTERNAL EXAMINER

16/5/23

EXTERNAL EXAMINER

NEW COLLEGE OF ENGG & TECHNOLOGY NATHAM

Dr. J.SUNDARARAJAN, B.E., M.Tech., Ph.D.
Principal
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ABSTRACT

Transmission and storage of medical data using cloud-based Internet-of-health-systems (IoHS) necessitate important prerequisites, such as secrecy, legitimacy, and integrity. The system is developed encryption/decryption scheme that can be applied in e-healthcare, or IoHS, for the protection of medical images. Cloud is a new technology that is developed to reduce the storage area and cost of storage. E-Health Care having same images share a common storage area and that images can be fetched whenever needed. The proposed system explores the multiple medical images are encrypted and decrypted. The medical data manager encrypts the medical images and stored in cloud increasing exponentially day by day. An Admin generate a secret key for each and every image. And Health care provider will decrypt the encrypted images from cloud. The only way to reduce the time for medical department is multiple medical images encrypted and decrypted at a time and elimination of repeated images in cloud.

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CHAPTER 11

CONCLUSION AND FUTURE ENHANCEMENT

I conclude that, medical image encryption scheme that can integrated in cloud-based internet-of-health systems (IoHS). An input parameter besides the medical image and the secret key unlike those encryption algorithms based on one-time keys. The latter has the advantage that it permits controlling the encrypted image without affecting the secret keys. Thus, my system possesses multiple advantage, including improved encryption quality, performance, and robustness; and also secure and speed encryption of multiple images using key. This has been documented using various experiments and various test medical images. Additional companion with state-of-the art encryption scheme using benchmark images (both color and greyscale) highlighted the high effectiveness and robustness of the proposed scheme to prevent many existing cryptography attacks and cryptanalysis techniques.

For our future work, we will investigate how to achieve the same functionalities using another algorithm with the same security guarantee without independent key servers.

CS8791 **CLOUD COMPUTING** **L T P C**
3 0 0 3

OBJECTIVES:

- To understand the concept of cloud computing.
- To appreciate the evolution of cloud from the existing technologies.
- To have knowledge on the various issues in cloud computing.
- To be familiar with the lead players in cloud.
- To appreciate the emergence of cloud as the next generation computing paradigm

UNIT I INTRODUCTION **9**

Introduction to Cloud Computing – Definition of Cloud – Evolution of Cloud Computing – Underlying Principles of Parallel and Distributed Computing – Cloud Characteristics – Elasticity in Cloud – On-demand Provisioning.

UNIT II CLOUD ENABLING TECHNOLOGIES **10**

Service Oriented Architecture – REST and Systems of Systems – Web Services – Publish-Subscribe Model – Basics of Virtualization – Types of Virtualization – Implementation Levels of Virtualization – Virtualization Structures – Tools and Mechanisms – Virtualization of CPU – Memory – I/O Devices –Virtualization Support and Disaster Recovery.

UNIT III CLOUD ARCHITECTURE, SERVICES AND STORAGE **8**

Layered Cloud Architecture Design – NIST Cloud Computing Reference Architecture – Public, Private and Hybrid Clouds - IaaS – PaaS – SaaS – Architectural Design Challenges – Cloud Storage – Storage-as-a-Service – Advantages of Cloud Storage – Cloud Storage Providers – S3.

UNIT IV RESOURCE MANAGEMENT AND SECURITY IN CLOUD **10**

Inter Cloud Resource Management – Resource Provisioning and Resource Provisioning Methods – Global Exchange of Cloud Resources – Security Overview – Cloud Security Challenges – Software-as-a-Service Security – Security Governance – Virtual Machine Security – IAM – Security Standards.

UNIT V CLOUD TECHNOLOGIES AND ADVANCEMENTS **8**

Hadoop – MapReduce – Virtual Box -- Google App Engine – Programming Environment for Google App Engine — Open Stack – Federation in the Cloud – Four Levels of Federation – Federated Services and Applications – Future of Federation.

TOTAL: 45 PERIODS

OUTCOMES:

On Completion of the course, the students should be able to:

- Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
- Learn the key and enabling technologies that help in the development of cloud.
- Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.
- Explain the core issues of cloud computing such as resource management and security.
- Be able to install and use current cloud technologies.
- Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.

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TEXT BOOKS:

1. Kai Hwang, Geoffrey C. Fox, Jack G. Dongarra, "Distributed and Cloud Computing. From Parallel Processing to the Internet of Things", Morgan Kaufmann Publishers, 2012.
2. Rittinghouse, John W., and James F. Ransome, —Cloud Computing: Implementation, Management and Security‖, CRC Press, 2017.

REFERENCES:

1. Rajkumar Buyya, Christian Vecchiola, S. ThamaraiSelvi, —Mastering Cloud Computing‖, Tata Mcgraw Hill, 2013.
2. Toby Velte, Anthony Velte, Robert Elsenpeter, "Cloud Computing - A Practical Approach‖, Tata Mcgraw Hill, 2009.
3. George Reese, "Cloud Application Architectures: Building Applications and Infrastructure in the Cloud: Transactional Systems for EC2 and Beyond (Theory in Practice)‖, O'Reilly, 2009.

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Natham, Dindigul

INVENTORY MANAGEMENT SYSTEM

A PROJECT REPORT

Submitted by

JANANI .R	**(920819104016)**
SELVANJALI. P	**(920819104035)**
SUBHASHINI. K	**(920819104043)**

in partial fulfillment for the award of degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

NPR COLLEGE OF ENGINEEERING AND TECHNOLOGY

NATHAM, DINDIGUL.

ANNA UNIVERSITY::CHENNAI 600 025

MAY 2023

ANNA UNVIERSITY::CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **"INVENTORY MANAGEMENT SYSTEM"** is the bonafide work of **"JANANI .R (920819104016), SELVANJALI .P (920819104035) & SUBHASHINI .K (920819104043)"** who carried out the project work under my supervision.

17/5/23

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Submitted for the ANNA UNIVERSITY viva-voce Examination held on 17.5.23 at NPR College of Engineering and Technology, Natham.

17/5/23

INTERNAL EXAMINER

EXTERNAL EXAMINER

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ABSTRACT

The website hosts the fashion dresses to be sold in the online. Every Seller can register their information and their clothe details in the site to sale using this application. Administrator creates the products types and items and uploads it on the site to sale. This system allows the small scale clothe merchants and familiar middle class clothe merchants can register their products to trade their clothes through this online application. Using this portal, customers who are surrounding the particular city can purchase clothes online from specified shops which are nearby their places and which are familiar shops in the city. So customers get the delivery of clothe items from the specified shop quickly. All the uploaded products in the site are available online. Any user visits the site can view the products and can purchase online. The products are displayed category wise so that the search of the product is easy. Users can select the products from the site and can add in their account. Then on finishing the purchase of items from the site, user needs to confirm the products purchased. Then the order is send to the site.

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CHAPTER – 11

CONCLUSION AND FUTURE ENHANCEMENT

This online shopping helps the user to shop fashion clothing for men, women and children through online. So that the user is not needed to leave his/her house for shopping. The invention of the new system is an achievement since it satisfies the requirements of the users. Therefore it is time saving and easier to access. Small clothe merchants surrounding the city can register their products for online sales and getting benefits to both clothe shop merchants and customers who are in the same place.

Even some small clothe merchants sell the high quality of clothe with affordable price, they don't get popular and they could not get the right revenue from their business. These kinds of small clothe merchants surrounding the city can register their products for online sales and getting benefits to both clothe shop merchants and customers who are in the same place. In future, it can be implemented securely with help of wallet code or quick response code to verify and approve legitimate and honest users only. Based on friend recommendation, customer's can decide to select the shop and purchase the items from recommended shops only.

The future enhancement of our project is to make an online payment process ,like adding the UPI, Banking, etc.

IT8075 **SOFTWARE PROJECT MANAGEMENT**

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the Software Project Planning and Evaluation techniques.
- To plan and manage projects at each stage of the software development life cycle (SDLC).
- To learn about the activity planning and risk management principles.
- To manage software projects and control software deliverables.
- To develop skills to manage the various phases involved in project management and people management.
- To deliver successful software projects that support organization's strategic goals.

UNIT I PROJECT EVALUATION AND PROJECT PLANNING 9

Importance of Software Project Management – Activities - Methodologies – Categorization of Software Projects – Setting objectives – Management Principles – Management Control – Project portfolio Management – Cost-benefit evaluation technology – Risk evaluation – Strategic program Management – Stepwise Project Planning.

UNIT II PROJECT LIFE CYCLE AND EFFORT ESTIMATION 9

Software process and Process Models – Choice of Process models - Rapid Application development – Agile methods – Dynamic System Development Method – Extreme Programming– Managing interactive processes – Basics of Software estimation – Effort and Cost estimation techniques – COSMIC Full function points - COCOMO II - a Parametric Productivity Model.

UNIT III ACTIVITY PLANNING AND RISK MANAGEMENT 9

Objectives of Activity planning – Project schedules – Activities – Sequencing and scheduling – Network Planning models – Formulating Network Model – Forward Pass & Backward Pass techniques – Critical path (CRM) method – Risk identification – Assessment – Risk Planning –Risk Management – – PERT technique – Monte Carlo simulation – Resource Allocation – Creation of critical paths – Cost schedules.

UNIT IV PROJECT MANAGEMENT AND CONTROL 9

Framework for Management and control – Collection of data – Visualizing progress – Cost monitoring – Earned Value Analysis – Prioritizing Monitoring – Project tracking – Change control – Software Configuration Management – Managing contracts – Contract Management.

UNIT V STAFFING IN SOFTWARE PROJECTS 9

Managing people – Organizational behavior – Best methods of staff selection – Motivation – The Oldham – Hackman job characteristic model – Stress – Health and Safety – Ethical and Professional concerns – Working in teams – Decision making – Organizational structures – Dispersed and Virtual teams – Communications genres – Communication plans – Leadership.

TOTAL45 PERIODS

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Natham Dindigul Dist.

OUTCOMES:

At the end of the course, the students should be able to:

- Understand Project Management principles while developing software.
- Gain extensive knowledge about the basic project management concepts, framework and the process models.
- Obtain adequate knowledge about software process models and software effort estimation techniques.
- Estimate the risks involved in various project activities.
- Define the checkpoints, project reporting structure, project progress and tracking mechanisms using project management principles.
- Learn staff selection process and the issues related to people management

TEXT BOOK:

1. Bob Hughes, Mike Cotterell and Rajib Mall: Software Project Management – Fifth Edition, Tata McGraw Hill, New Delhi, 2012.

REFERENCES:

1. Robert K. Wysocki —Effective Software Project Managementll – Wiley Publication, 2011.

2. Walker Royce: —Software Project Managementll- Addison-Wesley, 1998.

3. Gopalaswamy Ramesh, —Managing Global Software Projectsll – McGraw Hill Education (India), Fourteenth Reprint 2013.

NATHAM

Dr. J.SUNDARARAJAN, B.E., M.Tech., Ph.D.
Principal
N.P.R. College of Engg. & Tech.
Natham, Dindigul

Triflorum

Triflorum Engineering and Business Solutions

Date: 20.12.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Sai Prasanthy N S,** final year student of BE-Computer science and Engineering**, NPR college of Engineering & Technology, Natham, Dindigul**, has successfully completed Internship training in our organization from **01.12.2022 to 08.12.2022.**

During the above period we found her sincere and hardworking. He has taken proper initiative efforts towards completed his training

We wish him all the best for the future career.

Managing Director
Mr.S.Kumaraguru

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
NPR College of Engineering & Technology
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OIE751 **ROBOTICS**

L	T	P	C
3	0	0	3

OBJECTIVES:

- To understand the functions of the basic components of a Robot.
- To study the use of various types of End of Effectors and Sensors
- To impart knowledge in Robot Kinematics and Programming
- To learn Robot safety issues and economics.

UNIT I FUNDAMENTALS OF ROBOT 6

Robot - Definition - Robot Anatomy - Co ordinate Systems, Work Envelope Types and Classification- Specifications-Pitch, Yaw, Roll, Joint Notations, Speed of Motion, Pay Load-Robot Parts and their Functions-Need for Robots-Different Applications.

UNIT II ROBOT DRIVE SYSTEMS AND END EFFECTORS 9

Pneumatic Drives-Hydraulic Drives-Mechanical Drives-Electrical Drives-D.C. Servo Motors, Stepper Motors, A.C. Servo Motors-Salient Features, Applications and Comparison of all these Drives. End Effectors-Grippers-Mechanical Grippers, Pneumatic and Hydraulic-Grippers, Magnetic Grippers,

Vacuum Grippers; Two Fingered and Three Fingered Grippers; Internal Grippers and External Grippers; Selection and Design Considerations.

UNIT III SENSORS AND MACHINE VISION 12

Requirements of a sensor, Principles and Applications of the following types of sensors-Position sensors - Piezo Electric Sensor, LVDT, Resolvers, Optical Encoders, pneumatic Position Sensors, Range Sensors Triangulations Principles, Structured, Lighting Approach, Time of Flight, Range Finders, Laser Range Meters, Touch Sensors ,binary Sensors., Analog Sensors, Wrist Sensors, Compliance Sensors, Slip Sensors, Camera, Frame Grabber, Sensing and Digitizing Image Data- Signal Conversion, Image Storage, Lighting Techniques, Image Processing and Analysis-Data Reduction, Segmentation, Feature Extraction, Object Recognition, Other Algorithms, Applications- Inspection, Identification, Visual Serving and Navigation.

UNIT IV ROBOT KINEMATICS AND ROBOT PROGRAMMING 13

Forward Kinematics, Inverse Kinematics and Difference; Forward Kinematics and Reverse Kinematics of manipulators with Two, Three Degrees of Freedom (in 2 Dimension), Four Degrees of freedom (in 3 Dimension) Jacobians, Velocity and Forces-Manipulator Dynamics, Trajectory Generator, Manipulator Mechanism Design-Derivations and problems, Lead through Programming, Robot programming Languages-VAL Programming-Motion Commands, Sensor Commands, End Effector commands and simple Programs.

UNIT V IMPLEMENTATION AND ROBOT ECONOMICS 5

RGV, AGV; Implementation of Robots in Industries-Various Steps; Safety Considerations for Robot Operations - Economic Analysis of Robots.

TOTAL: 45 PERIODS

OUTCOME:

- Upon completion of this course, the students can able to apply the basic engineering knowledge for the design of robotics

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TEXT BOOKS:

1. Klafter R.D., Chmielewski T.A and Negin M., "Robotic Engineering - An Integrated Approach", Prentice Hall, 2003.
2. Groover M.P., "Industrial Robotics -Technology Programming and Applications", McGraw Hill, 2001.

REFERENCES:

1. Craig J.J., "Introduction to Robotics Mechanics and Control", Pearson Education, 2008.
2. Deb S.R., "Robotics Technology and Flexible Automation" Tata McGraw Hill Book Co., 1994.
3. Koren Y., "Robotics for Engineers", Mc Graw Hill Book Co., 1992.
4. Fu.K.S.,Gonzalz R.C. and Lee C.S.G., "Robotics Control, Sensing, Vision and Intelligence", McGraw Hill Book Co., 1987.
5. Janakiraman P.A., "Robotics and Image Processing", Tata McGraw Hill, 1995.
6. Rajput R.K., "Robotics and Industrial Automation", S.Chand and Company, 2008.
7. Surender Kumar, "Industrial Robots and Computer Integrated Manufacturing", Oxford and IBH Publishing Co. Pvt. Ltd., 1991.

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C3 TECHNOLOGIES
TRAINING | PROJECTS | PLACEMENTS
An ISO 29990:2010 Certified Institution

52/33, T.Nagar 3rd Cross, Ramanathapuram, Coimbatore -641 045.

Ph: 72000 55778 / 98435 55778. E-mail: c3technologiescbe@gmail.com

Date: 24.04.2023

CERTIFICATE OF INPLANT TRAINING

This is to certify that **Mr. Thirunavukkarasar T** from NPR College Engineering and Technology has successfully completed in-plant training from **03.04.2023 to 17.04.2023** in our organization.

During the tenure of training, we found him very sincere, attentive and good behaviour.

For C3 TECHNOLOGIES
Managing Director

Dr. J.SUNDARARAJAN,
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GE8076 **PROFESSIONAL ETHICS IN ENGINEERING** **L T P C**
3 0 0 3

OBJECTIVES:

- To enable the students to create an awareness on Engineering Ethics and Human Values, to instill Moral and Social Values and Loyalty and to appreciate the rights of others.

UNIT I HUMAN VALUES **10**

Morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self confidence – Character – Spirituality – Introduction to Yoga and meditation for professional excellence and stress management.

UNIT II ENGINEERING ETHICS **9**

Senses of 'Engineering Ethics' – Variety of moral issues – Types of inquiry – Moral dilemmas – Moral Autonomy – Kohlberg's theory – Gilligan's theory – Consensus and Controversy – Models of professional roles - Theories about right action – Self-interest – Customs and Religion – Uses of Ethical Theories.

UNIT III ENGINEERING AS SOCIAL EXPERIMENTATION **9**

Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics – A Balanced Outlook on Law.

UNIT IV SAFETY, RESPONSIBILITIES AND RIGHTS **9**

Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk - Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination.

UNIT V GLOBAL ISSUES **8**

Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership –Code of Conduct – Corporate Social Responsibility.

TOTAL: 45 PERIODS

OUTCOMES:

- Upon completion of the course, the student should be able to apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society.

TEXT BOOKS:

1. Mike W. Martin and Roland Schinzinger, —Ethics in Engineering‖, Tata McGraw Hill, New Delhi, 2003.
2. Govindarajan M, Natarajan S, Senthil Kumar V. S. —Engineering Ethics‖, Prentice Hall of India, New Delhi, 2004.

REFERENCES:

1. Charles B. Fleddermann, —Engineering Ethics‖, Pearson Prentice Hall, New Jersey, 2004.

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2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins. —Engineering Ethics – Concepts and Cases‖, Cengage Learning, 2009.
3. John R Boatright, —Ethics and the Conduct of Business‖, Pearson Education. New Delhi, 2003
4. Edmund G Seebauer and Robert L Barry, —Fundamentals of Ethics for Scientists and Engineers‖, Oxford University Press. Oxford, 2001.
5. Laura P. Hartman and Joe Desjardins, —Business Ethics: Decision Making for Personal Integrity and Social Responsibility‖ Mc Graw Hill education, India Pvt. Ltd.,New Delhi, 2013.
6. World Community Service Centre, ‗ Value Education', Vethathiri publications. Erode, 2011.

Web sources:

1. www.onlineethics.org
2. www.nspe.org
3. www.globalethics.org
4. www.ethics.org

Expect The World From Us
A Division of CMS IT Services Pvt. Ltd

24th Nov '2022

To Whom So Ever It May Concern

This is to certify that **Mr.Naveen Kumar S**, Department of Computer Science & Engineering, NPR College of Engineering & Technology, Natham, Dindigul has undergone in-plant training from **02.11.2022 to 11.11.2022** in our organization.

During the period of his training, he had shown keen interest towards learning.

He demonstrated good design skills with self-motivated attitude to learn new things.

We wish him future endeavor.

Yours Sincerely,
For **CMS IT Services Pvt Ltd.,**

Authorized Signatory,

Dr. J.SUNDARARAJAN, M.E., M.Tech., Ph.D.,
Principal
NPR College of Engineering & Technology
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CS8078 **GREEN COMPUTING**

L	T	P	C
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OBJECTIVES:

- To learn the fundamentals of Green Computing.
- To analyze the Green computing Grid Framework.
- To understand the issues related with Green compliance.
- To study and develop various case studies.

UNIT I FUNDAMENTALS **9**

Green IT Fundamentals: Business, IT, and the Environment – Green computing: carbon foot print, scoop on power – Green IT Strategies: Drivers, Dimensions, and Goals – Environmentally Responsible Business: Policies, Practices, and Metrics.

UNIT II GREEN ASSETS AND MODELING **9**

Green Assets: Buildings, Data Centers, Networks, and Devices – Green Business Process Management: Modeling, Optimization, and Collaboration – Green Enterprise Architecture – Environmental Intelligence – Green Supply Chains – Green Information Systems: Design and Development Models.

UNIT III GRID FRAMEWORK **9**

Virtualization of IT systems – Role of electric utilities, Telecommuting, teleconferencing and teleporting – Materials recycling – Best ways for Green PC – Green Data center – Green Grid framework.

UNIT IV GREEN COMPLIANCE **9**

Socio-cultural aspects of Green IT – Green Enterprise Transformation Roadmap – Green Compliance: Protocols, Standards, and Audits – Emergent Carbon Issues: Technologies and Future.

UNIT V CASE STUDIES **9**

The Environmentally Responsible Business Strategies (ERBS) – Case Study Scenarios for Trial Runs – Case Studies – Applying Green IT Strategies and Applications to a Home, Hospital, Packaging Industry and Telecom Sector.

TOTAL : 45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Acquire knowledge to adopt green computing practices to minimize negative impacts on the environment.
- Enhance the skill in energy saving practices in their use of hardware.
- Evaluate technology tools that can reduce paper waste and carbon footprint by the stakeholders.
- Understand the ways to minimize equipment disposal requirements .

NATHAM

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TEXT BOOKS:

1. Bhuvan Unhelkar, —Green IT Strategies and Applications-Using Environmental Intelligence‖, CRC Press, June 2014.
2. Woody Leonhard, Katherine Murray, —Green Home computing for dummies‖, August 2012.

REFERENCES:

1. Alin Gales, Michael Schaefer, Mike Ebbers, —Green Data Center: steps for the Journey‖, Shroff/IBM rebook, 2011.
2. John Lamb, —The Greening of IT‖, Pearson Education, 2009.
3. Jason Harris, —Green Computing and Green IT- Best Practices on regulations & industry‖, Lulu.com, 2008
4. Carl speshocky, —Empowering Green Initiatives with IT‖, John Wiley & Sons, 2010.
5. Wu Chun Feng (editor), —Green computing: Large Scale energy efficiency‖, CRC Press

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XPLORE IT CORP
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Date: 18.05.2023

CERTIFICATE OF COMPLETION

This is to certify that **Mr.Vijayakumar N** student of BE-CSE third year, NPR college of Engineering & Technology, Natham, Dindigul, has successfully completed internship training from **26.04.2023 to 11.05.2023**

During this period her performance was found good.

We wish him good luck for all the future endeavours and looks forward to work in future.

For Xplore IT Corp

Authorized Signatory

Dr. J.SUNDARARAJAN,
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CS8811 **PROJECT WORK** **L T P C**
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OBJECTIVES:

- To develop the ability to solve a specific problem right from its identification and literature review till the successful solution of the same. To train the students in preparing project reports and to face reviews and viva voce examination.

The students in a group of 3 to 4 works on a topic approved by the head of the department under the guidance of a faculty member and prepares a comprehensive project report after completing the work to the satisfaction of the supervisor. The progress of the project is evaluated based on a minimum of three reviews. The review committee may be constituted by the Head of the Department. A project report is required at the end of the semester. The project work is evaluated based on oral presentation and the project report jointly by external and internal examiners constituted by the Head of the Department.

TOTAL: 300 PERIODS

OUTCOME:

- On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.

ACCIDENT DETECTION AND ALERT SYSTEM

A PROJECT REPORT

Submitted by

DEVA DHARSHINI.N (920819104008)

MANGALA DHARSHINI.R (920819104021)

SUJITHA.P (920819104044)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

NPR COLLEGE OF ENGINEERING & TECHNOLOGY,

NATHAM, DINDIGUL.

ANNA UNIVERSITY:: CHENNAI 600 025

MAY 2023

ANNA UNIVERSITY:: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "**ACCIDENT DETECTION AND ALERT SYSTEM**" is the bonafide work of "**DEVA DHARSHINI.N (920819104008), MANGALA DHARSHINI.R (920819104018), SUJITHA.P (920819104044)**" who carried out the project work under my supervision.

SIGNATURE
Dr. K. RAMANAN M.Tech., Ph.D
HEAD OF THE DEPARTMENT
Professor,
Computer Science and
Engineering,
NPR College of Engineering
& Technology,
Natham,
Dindigul – 624001.

SIGNATURE
Dr..M. .JENIFER M.E., Ph.D.,
SUPERVISOR
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Submitted for the ANNA UNIVERSITY viva-voce Examination held on ..17.5.23.... at NPR College of Engineering & Technology, Natham.

INTERNAL EXAMINER

EXTERNAL EXAMINER

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ABSTRACT

Accident detection using an Android application is an innovative and efficient approach to identify and report road accidents in real-time. The application uses various sensors and algorithms to detect the occurrence of an accident, such as sudden changes in acceleration, orientation, and speed. Once an accident is detected, the application automatically sends an alert to the emergency services, providing the precise location of the accident and other vital information. Accident detection and alerting the respective contacts using an Android mobile application is an innovative and potentially life-saving technology. This application will detect whether the accident occurred or not by analyzing the movement of the phone using the accelerometer, or by detecting a user input signal such as pressing the volume button or by clicking the help button on the application. Once an accident is detected, the app can alert emergency services and pre-selected contacts with the user's location and any relevant information. The implementation of this system requires the integration of several technologies, such as GPS, accelerometer, gyroscope, and Bluetooth. Once an accident is detected, the application will send an alert to emergency services automatically with the user's location, any relevant medical information, and an option for the user to contact emergency services directly.

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CHAPTER 10

CONCLUSION AND FUTURE ENHANCEMENT

10.1 Overview

The use of an android mobile application for accident detection and informing emergency services and pre-selected contacts can significantly improve response times and reduce the severity of injuries resulting from accidents. This application can detect accidents through shaking the phone, pressing the volume button, or clicking a help button on the application and can transmit real-time location information to emergency services and pre-selected contacts. The application's user registration module allows users to create a personalized account, while the enroll emergency contact module allows users to enroll their emergency contacts, including family members, friends, or healthcare professionals. The alert feature module triggers an alert to emergency services and pre-selected contacts when an accident is detected, while the notification module sends notifications to the user and emergency contacts when an accident is detected or when the alert feature is activated. The application's feedback module allows users to provide feedback on the application's performance and reporting any issues or bugs. Finally, the application's user education module provides education and training to users on how to use the application effectively.

10.2 Future Enhancement

This mobile application is helpful in future when any problem arises in travelling or any kind of situations. As the technology emerges it is possible to upgrade the system and can be adaptable to desired environment because it is based on object oriented design, any further changes can be easily adaptable. Based on the future security issues, security can be improved using emerging technologies.

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