



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



INDEX

S.No	Description	Page No's.
1	Geo Tag Photos of POs, PSOs, PEOs	2-9
2	Geo Tag Photos of COs Displayed in the Department Notice Boards	10-12
3	Screenshots of POs, PEOs, PSOs and COs Uploaded in the College Website	13-23
4	Program Outcomes(POs), Program Specific Outcomes, Program Educational Objectives(PEOs) and Course Outcomes(COs) of all the courses	24-79



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



1. Geo Tag Photos of POs, PSOs, and PEOs

Sri Indu Institute of Engineering & Technology
Recognized under 2(f) and 12(B) of UGC Act 1956
Approved by AICTE, New Delhi & Affiliated to JNTUH Hyderabad
Sheriguda (V), Ibrahimpatnam (M), R.R. Dist., Hyderabad, TS- 501510.

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
PROGRAM OUTCOMES

- 1.ENGINEERING KNOWLEDGE:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2.PROBLEM ANALYSIS:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3.DESIGN/DEVELOPMENT OF SOLUTIONS:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health safety, cultural, societal and environmental considerations.
- 4.CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
- 5.MODERN TOOL USAGE:** Create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6.THE ENGINEER AND SOCIETY:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7.ENVIRONMENT AND SUSTAINABILITY:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- 8.ETHICS:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9.INDIVIDUAL AND TEAM WORK:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10.COMMUNICATION:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
- 11.PROJECT MANAGEMENT AND FINANCE:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12.LIFE-LONG LEARNING:** Recognize the need for and have the preparation and ability to engage in independent and life long learning in the broadest context of technological change.

 &...
ECE Department (PO'S)
Sri Indu Institute of Engineering and Technology
Sheriguda, Ibrahimpatnam, Hyderabad -
Nagarjuna Sagar Rd, Telangana 501510, India
Lat N 17° 12' 34.8048" Long E 78° 36' 45.0828"

Department of ECE- Program Outcomes



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

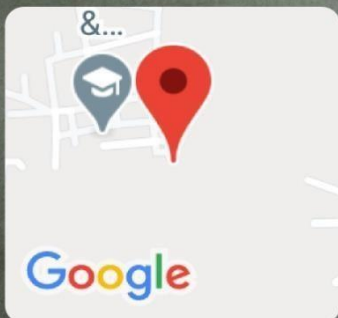
Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



Sri Indu Institute of Engineering & Technology
Recognized under 2(f) and 12(B) of UGC Act 1956
Approved by AICTE, New Delhi & Affiliated to JNTUH Hyderabad
Sheriguda (V), Ibrahimpatnam (M), R.R. Dist., Hyderabad, TS- 501510.
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
PROGRAM OUTCOMES

- 1.ENGINEERING KNOWLEDGE:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2.PROBLEM ANALYSIS:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3.DESIGN/DEVELOPMENT OF SOLUTIONS:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health safety, cultural, societal and environmental considerations.
- 4.CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
- 5.MODERN TOOL USAGE:** Create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6.THE ENGINEER AND SOCIETY:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7.ENVIRONMENT AND SUSTAINABILITY:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- 8.ETHICS:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9.INDIVIDUAL AND TEAM WORK:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10.COMMUNICATION:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
- 11.PROJECT MANAGEMENT AND FINANCE:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12.LIFE-LONG LEARNING:** Recognize the need for and have the preparation and ability to engage in independent and life long learning in the broadest context of technological change.



Department of CSE(Program Outcomes)
Sri Indu Institute of Engineering and
Technology, Sheriguda, Ibrahimpatnam, Nagarjuna
Sagar Rd , , Telangana 501510, India
Lat N 17° 12' 35.0064" Long E 78° 36' 46.458"

Department of CSE- Program Outcomes



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

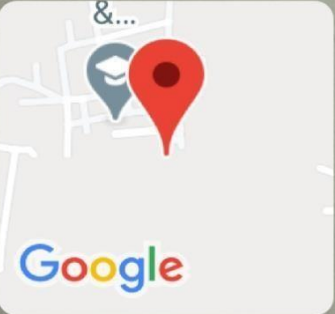
Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siet.ac.in



Sri Indu Institute of Engineering & Technology
ESTD - 2007
Recognized under 2(f) and 12(B) of UGC Act 1956
Approved by AICTE, New Delhi & Affiliated to JNTUH Hyderabad
Sheriguda (V), Ibrahimpatnam (M), R.R. Dist., Hyderabad, TS- 501510.
DEPARTMENT OF MECHANICAL ENGINEERING
PROGRAM OUTCOMES

- 1.ENGINEERING KNOWLEDGE:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2.PROBLEM ANALYSIS:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3.DESIGN/DEVELOPMENT OF SOLUTIONS:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health safety, cultural, societal and environmental considerations.
- 4.CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
- 5.MODERN TOOL USAGE:** Create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6.THE ENGINEER AND SOCIETY:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7.ENVIRONMENT AND SUSTAINABILITY:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- 8.ETHICS:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9.INDIVIDUAL AND TEAM WORK:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10.COMMUNICATION:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
- 11.PROJECT MANAGEMENT AND FINANCE:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12.LIFE-LONG LEARNING:** Recognize the need for and have the preparation and ability to engage in independent and life long learning in the broadest context of technological change.


Department of Mechanical Engineering Program Outcomes
Sri Indu Institute of Engineering and
Technology, Sheriguda, Ibrahimpatnam, Nagarjuna
Sagar Rd, , Telangana 501510, India
Lat N 17° 12' 34.7616" Long E 78° 36' 45.4536"

Department of Mechanical Engineering - Program Outcomes



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

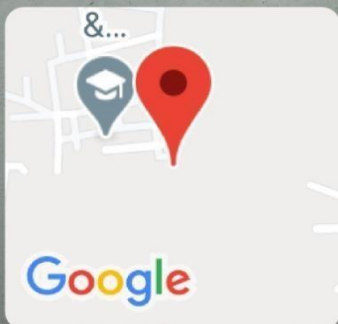


Sri Indu Institute of Engineering & Technology
Recognized under 2(f) and 12(B) of UGC Act 1956
Approved by AICTE, New Delhi & Affiliated to JNTUH Hyderabad
Sheriguda (V), Ibrahimpatnam (M), R.R. Dist., Hyderabad, TS- 501510.

DEPARTMENT OF CIVIL ENGINEERING

PROGRAM OUTCOMES

- 1.ENGINEERING KNOWLEDGE:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2.PROBLEM ANALYSIS:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3.DESIGN/DEVELOPMENT OF SOLUTIONS:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health safety, cultural, societal and environmental considerations.
- 4.CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
- 5.MODERN TOOL USAGE:** Create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6.THE ENGINEER AND SOCIETY:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7.ENVIRONMENT AND SUSTAINABILITY:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- 8.ETHICS:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9.INDIVIDUAL AND TEAM WORK:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10.COMMUNICATION:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
- 11.PROJECT MANAGEMENT AND FINANCE:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12.LIFE-LONG LEARNING:** Recognize the need for and have the preparation and ability to engage in independent and life long learning in the broadest context of technological change.



Department of Civil Engineering Program Outcomes
Sri Indu Institute of Engineering and
Technology, Sheriguda, Ibrahimpatnam, Nagarjuna
Sagar Rd , Telangana 501510, India
Lat N 17° 12' 35.0856" Long E 78° 36' 46.296"



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



Sri Indu Institute of Engineering & Technology
Recognized under 2(f) and 12(B) of UGC Act 1956
Approved by AICTE, New Delhi & Affiliated to JNTUH Hyderabad
Sheriguda (V), Ibrahimpatnam (M), R.R. Dist., Hyderabad, TS- 501510.

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

PEOs


PROGRAM EDUCATIONAL OBJECTIVES ARE TO PROMOTE:

- PEO1 :** Graduates with a strong foundation in Electronics and Communication Engineering, Science and Technology to become successful in the chosen professional career.
- PEO2 :** Graduates with ability to execute innovative ideas for Research and Development with continuous learning.
- PEO3 :** Graduates inculcated with industry based soft skills to enable employability.
- PEO4 :** Graduates demonstrate with ability to work in interdisciplinary teams and ethical professional behavior.

PSOs

PROGRAM SPECIFIC OUTCOMES

- PSO1 : Design Skills:** Design, analysis and development a economical system in the area of Embedded system & VLSI design.
- PSO2 : Software Usage:** Ability to investigate and solve the engineering problems using MATLAB, Keil and Xilinx.

 **ECE Department (PEOs & PSOs)**
Sri Indu Institute of Engineering and Technology
Sheriguda, Ibrahimpatnam, Hyderabad -
Nagarjuna Sagar Rd, Telangana 501510, India
Lat N 17° 12' 36.4392" Long E 78° 36' 43.2288"



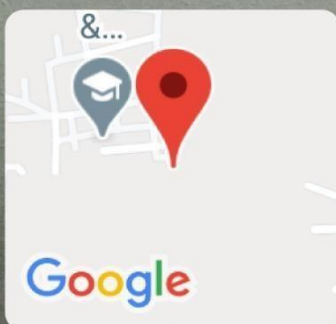
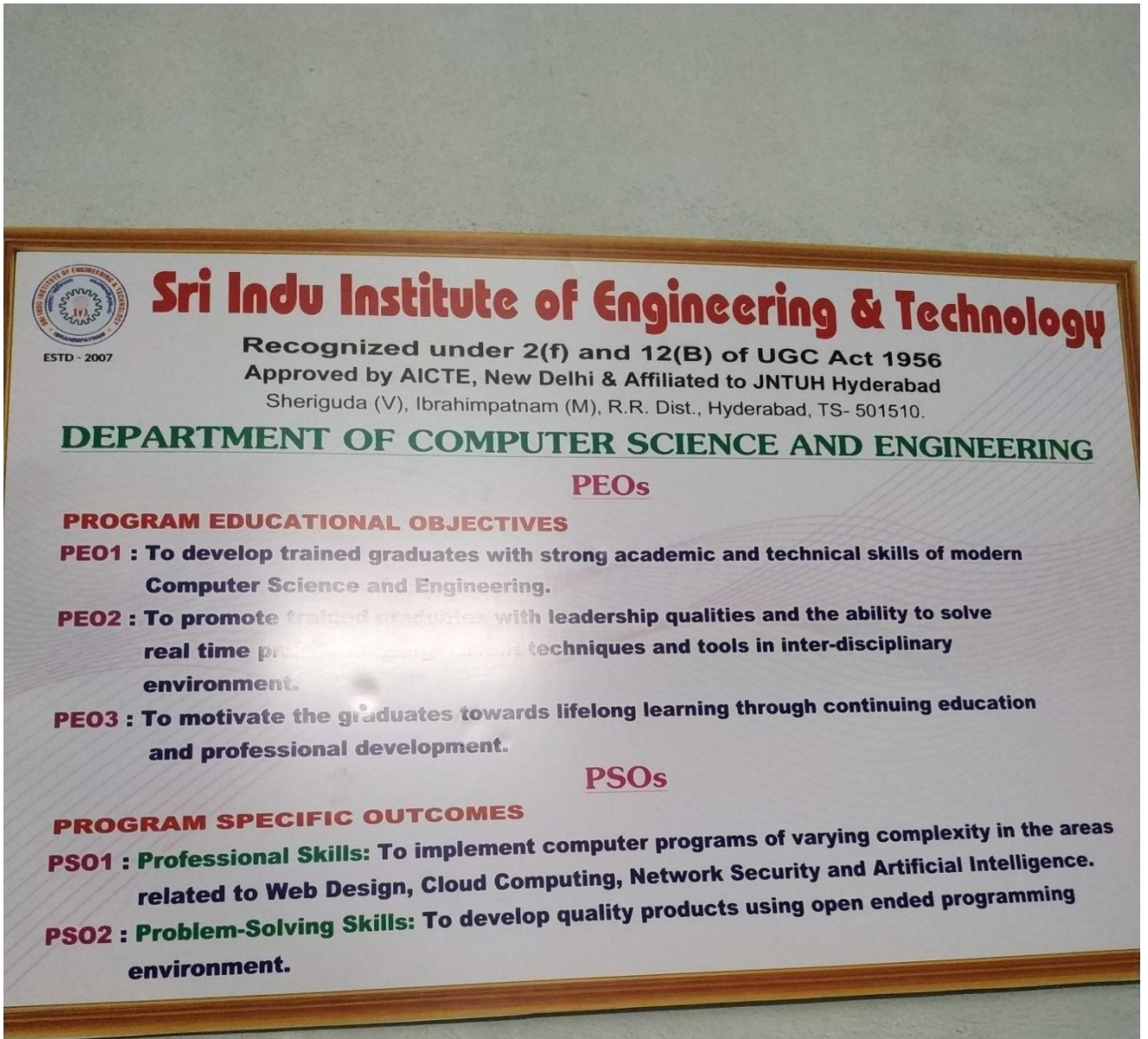
SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



Department of CSE(PEOs & PSOs)
Sri Indu Institute of Engineering and
Technology, Sheriguda, Ibrahimpatnam, Nagarjuna
Sagar Rd, , Telangana 501510, India
Lat N 17° 12' 35.0064" Long E 78° 36' 46.4544"



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



Sri Indu Institute of Engineering & Technology
ESTD - 2007
Recognized under 2(f) and 12(B) of UGC Act 1956
Approved by AICTE, New Delhi & Affiliated to JNTUH Hyderabad
Sheriguda (V), Ibrahimpatnam (M), R.R. Dist., Hyderabad, TS- 501510.

DEPARTMENT OF MECHANICAL ENGINEERING

PEOs

PROGRAMME EDUCATIONAL OBJECTIVES:

- PEO1: Domain knowledge:** Graduates with the ability to analyze and solve mechanical engineering problems with fundamentals of Engineering, Mathematics and Physical sciences.
- PEO2: Professional employment:** Graduates employable in the industry (automobile and manufacturing) and contribute towards, R&D with continuous learning.
- PEO3: Engineering citizenship:** Graduates prepared to communicate and work effectively on interdisciplinary engineering projects and practice ethics, Social responsibility.

PSOs

PROGRAMME SPECIFIC OUTCOMES:

- PSO1: Able to Design, Analyze Manufacturing processes, Thermal systems and Industrial engineering.**
- PSO2: Ability to use the drafting software like AUTO CAD/CATIA/PRO E/CREO and ANSYS for Design and Analyze the Automobile and Aeronautical components.**

Department of Mechanical Engineering(PEOs & PSOs)
Sri Indu Institute of Engineering and Technology, Sheriguda,
Ibrahimpatnam, Nagarjuna Sagar Rd, , Telangana 501510,
India
Lat N 17° 12' 34.8048" Long E 78° 36' 45.5004"

Department of Mechanical Engineering – PEOs & PSOs



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



Sri Indu Institute of Engineering & Technology
(Formerly RVR institute of Engineering & Technology)
Approved by AICTE, New Delhi & Affiliated to JNTUH Hyderabad
Sheriguda (V), Ibrahimpatnam (M), R.R. Dist., Hyderabad, TS- 501510.

DEPARTMENT OF CIVIL ENGINEERING
PEOs

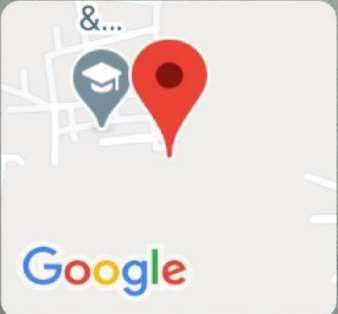
PROGRAMME EDUCATIONAL OBJECTIVES :

- PEO1 :** To provide the students with a strong foundation in the basic Sciences and Mathematics that will enable them to identify and solve real time problems in Civil engineering for Industries and Research activities.
- PEO2 :** To provide opportunity for students to work as part of teams on multidisciplinary projects. Students shall have relevant engineering design experience so that they shall understand the relationship between theory and practice for Core Subjects.
- PEO3 :** To adopt new innovative technology by continuously updating their knowledge through lifelong learning achieving personal and organization growth.

PSOs

PROGRAMME SPECIFIC OUTCOMES :

- PSO1 :** Graduates will be able to apply technical skills and modern engineering tools for civil engineering day to day practice.
- PSO2 :** Graduates will be able to design civil engineering structures, components and process to meet desired needs with appropriate consideration for the public health and safety, cultural, societal, sustainability and environmental considerations.

 Department of Civil Engineering(PEOs & PSOs)
Sri Indu Institute of Engineering and
Technology,Sheriguda, Ibrahimpatnam,Nagarjuna
Sagar Rd, , Telangana 501510, India
Lat N 17° 12' 35.0712" Long E 78° 36' 46.2852"

Department of Civil Engineering – PEOs & PSO



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

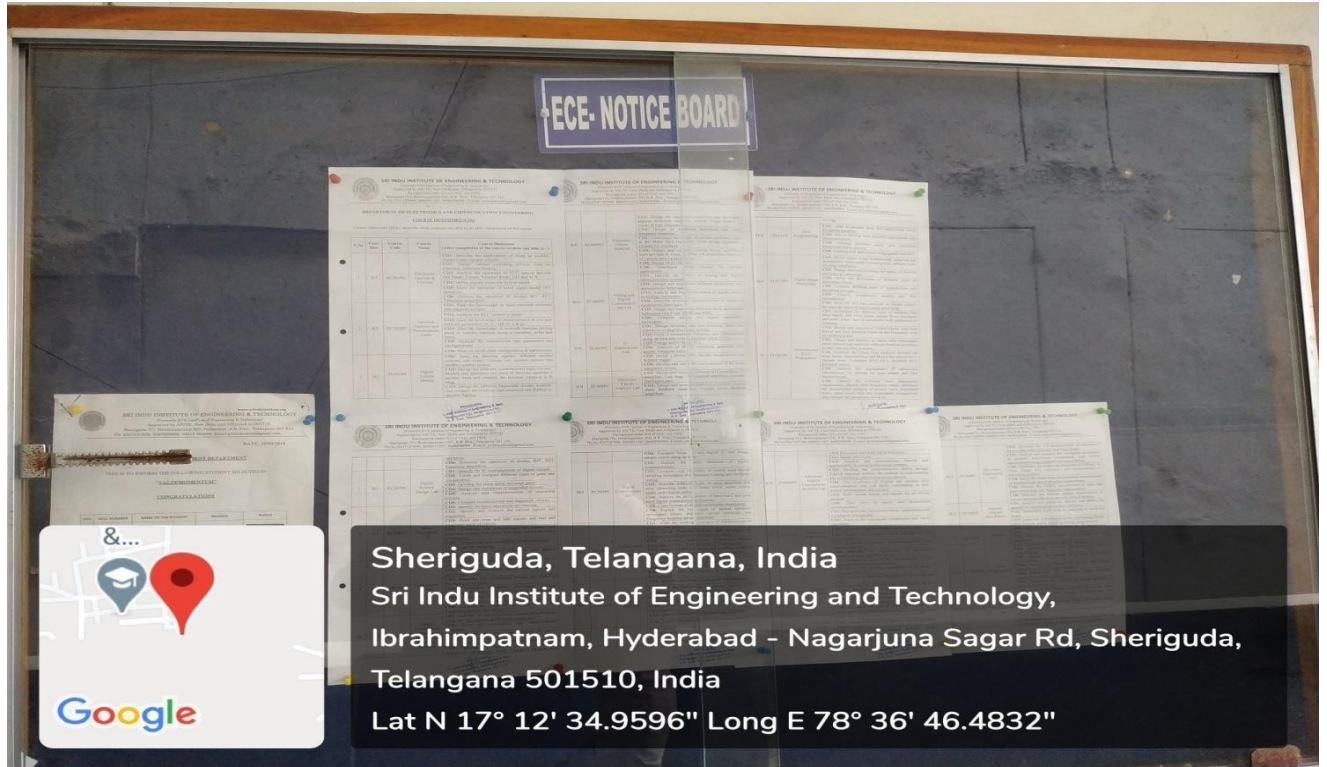
Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

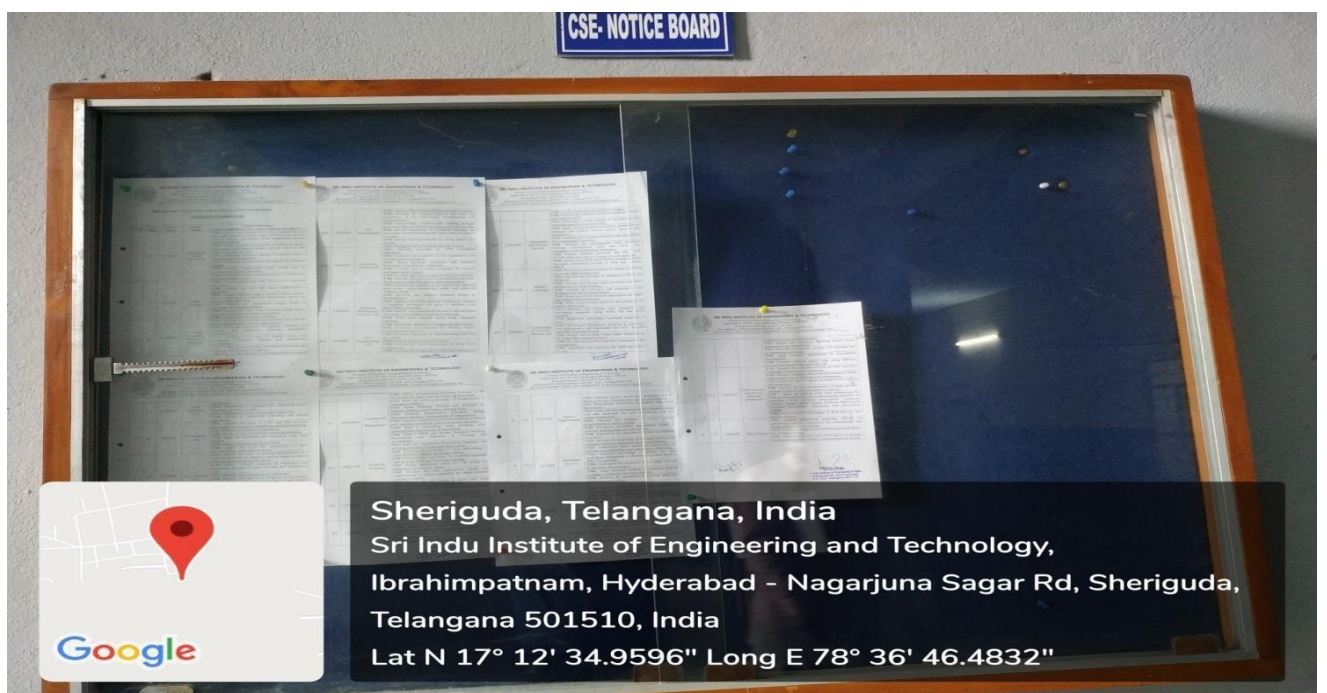
www.siiet.ac.in



2. Geo Tag Photos of COs Displayed in the Department Notice Boards



COs Displayed in the ECE Department Notice Board



COs Displayed in the CSE Department Notice Board



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



COs Displayed in the Mechanical Department Notice Board



COs Displayed in the H&S Department Notice Board



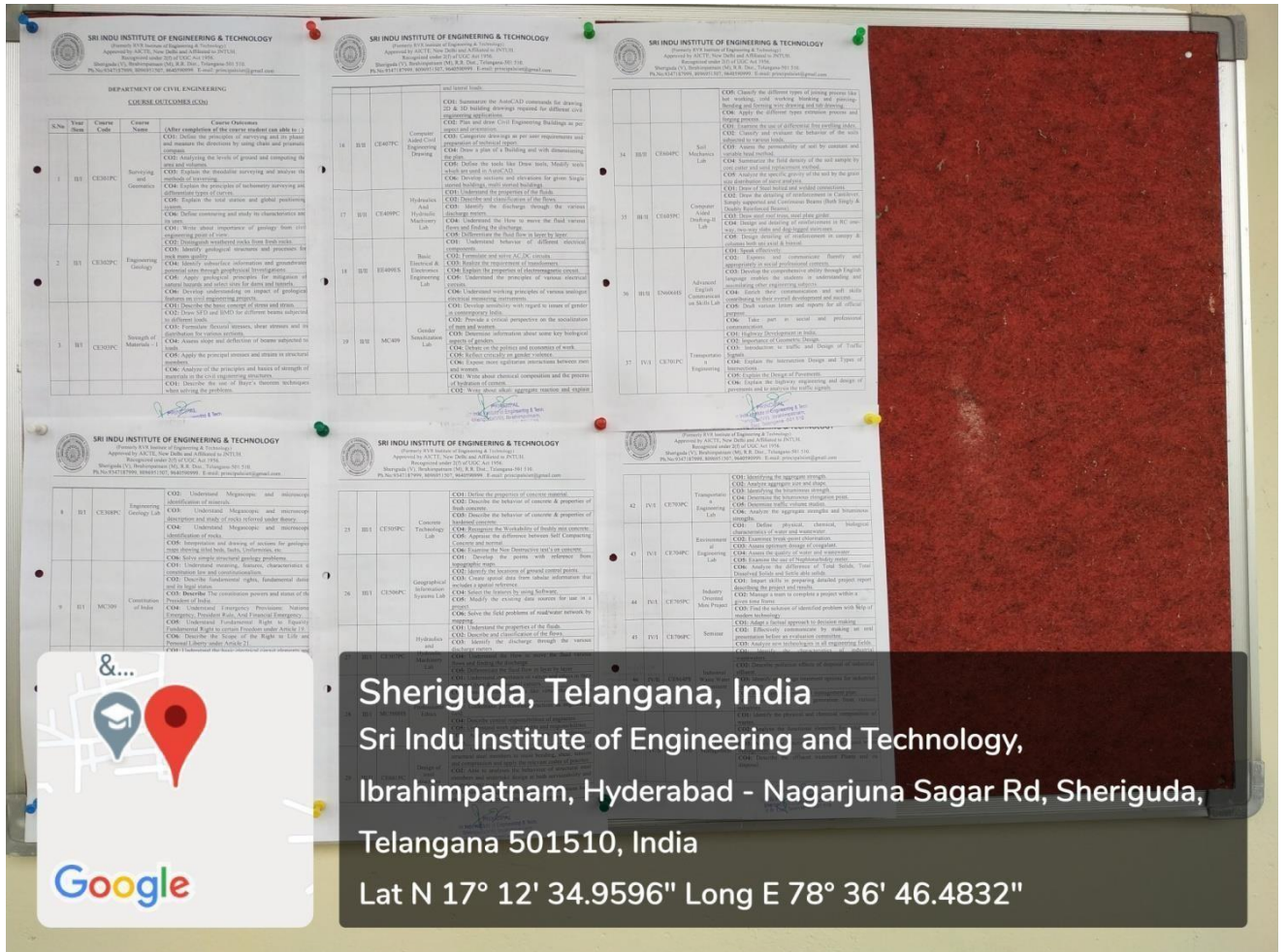
SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siet.ac.in



Sheriguda, Telangana, India
Sri Indu Institute of Engineering and Technology,
Ibrahimpatnam, Hyderabad - Nagarjuna Sagar Rd, Sheriguda,
Telangana 501510, India
Lat N 17° 12' 34.9596" Long E 78° 36' 46.4832"

COs Displayed in the Civil Department Notice Board



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

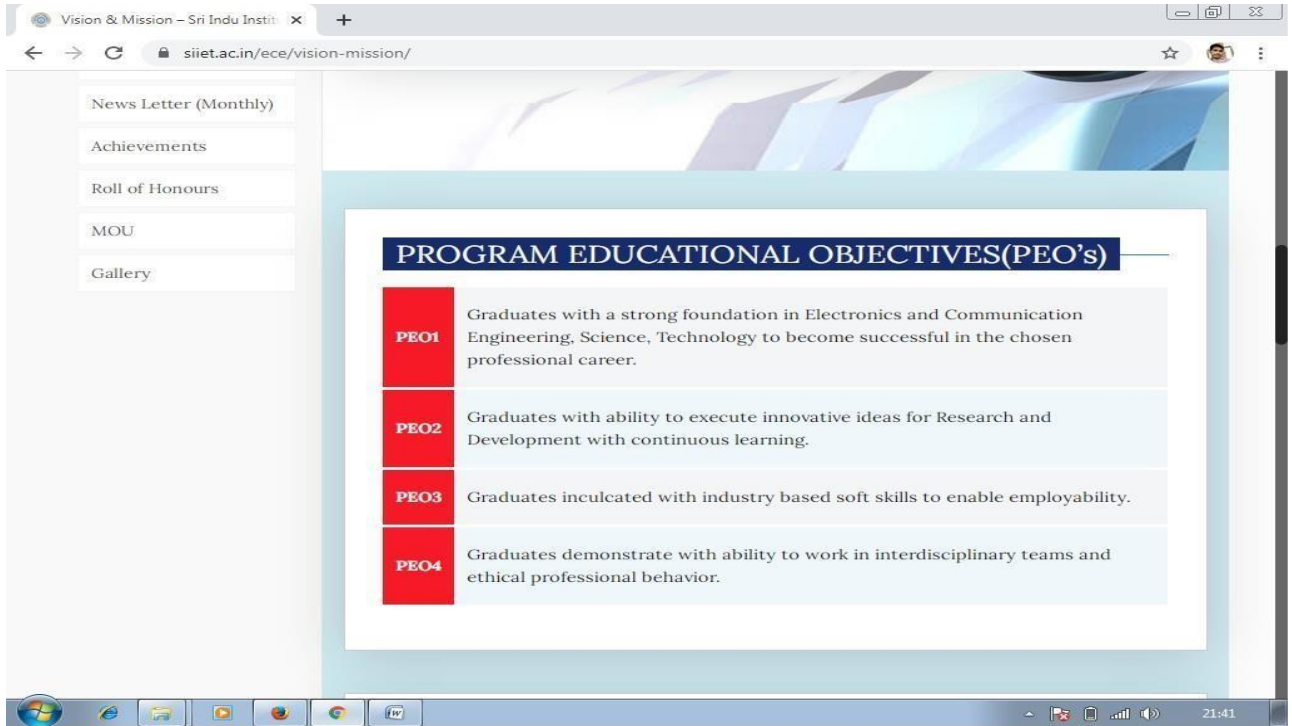
Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

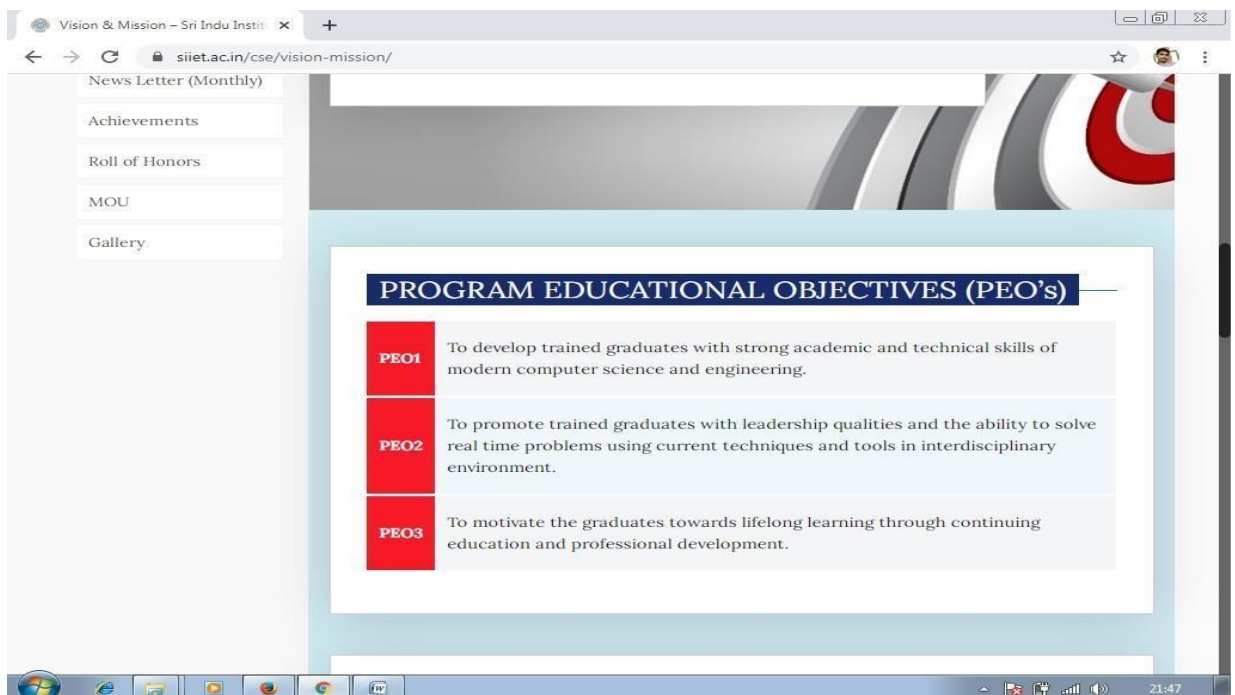
www.siiet.ac.in



3. Screenshots of POs, PEOs, PSOs and COs uploaded in the college website.



ECE Department PEOs in the website



CSE Department PEOs in the website



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



The screenshot shows a web browser window with the URL siiet.ac.in/civil/vision-mission/. The page features a navigation menu on the left with links for 'Achievements', 'Roll of Honors', 'MOU', and 'Gallery'. The main content area is titled 'PROGRAM EDUCATIONAL OBJECTIVES (PEO's)' and lists three objectives:

- PEO1** To provide the students with a strong foundation in the basic Sciences and Mathematics that will enable them to identify and solve real time problems in Civil engineering for Industries and Research activities.
- PEO2** To provide opportunity for students to work as part of teams on multidisciplinary projects. Students shall have relevant engineering design experience so that they shall understand the relationship between theory and practice for Core Subjects.
- PEO3** To adopt new innovative technology by continuously updating their knowledge through lifelong learning achieving personal and organization growth.

CIVIL Department PEOs in the website

The screenshot shows a web browser window with the URL siiet.ac.in/mech/vision-mission/. The page features a navigation menu on the left with links for 'Internships', 'News Letter (monthly)', 'Achievements', 'Roll of Honors', 'MOU', and 'Gallery'. The main content area is titled 'PROGRAM EDUCATIONAL OBJECTIVES (PEO's)' and lists three objectives:

- PEO1** Domain knowledge: Graduates with the ability to analyze and solve mechanical engineering problems with fundamentals of engineering, Mathematics and Physical sciences.
- PEO2** Professional employment: Graduates employable in the industry (automobile and manufacturing) and contribute towards, R&D with continuous learning.
- PEO3** Engineering citizenship: Graduates prepared to communicate and work effectively on interdisciplinary engineering projects and practice ethics, Social responsibility.

Mechanical Department PEOs in the website



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siet.ac.in



The screenshot shows a web browser window with the address bar displaying "siet.ac.in/ece/vision-mission/". The main content area features a section titled "PROGRAM OUTCOMES (PO's)" with a list of 12 outcomes, each with a red header and a light blue background. The outcomes are:

- PO1 Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.
- PO2 Problem Analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3 Design / Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4 Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5 Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- PO6 The Engineer & Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7 Environment & Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8 Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9 Individual & Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10 Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
- PO11 Project Management & Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12 Life-Long Learning:** Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

POs in the ECE Department Website Page



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



The screenshot shows a web browser window displaying the 'Vision & Mission' page of Sri Indu Institute of Engineering & Technology. The URL is siiet.ac.in/cse/vision-mission/. The main content is a list of 12 Program Outcomes (POs) for the CSE department, each with a brief description of the skill or knowledge area.

PROGRAM OUTCOMES (PO's)	
PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design / Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer & Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment & Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual & Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
PO11	Project Management & Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-Long Learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

POs in the CSE Department Website Page



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



PROGRAM OUTCOMES (PO's)

PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design / Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer & Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment & Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual & Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
PO11	Project Management & Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-Long Learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

POs in the Civil Department Website Page



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



PROGRAM OUTCOMES (POs)

PO1	Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialisation to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design / Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer & Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment & Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual & Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
PO11	Project Management & Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-Long Learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

POs in the Mechanical Department Website Page



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



ECE Department PSOs in the website

CSE Department PSOs in the website



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



The screenshot shows a web browser window with the URL siiet.ac.in/civil/vision-mission/. The main content area is titled "PROGRAM SPECIFIC OUTCOMES (PSO's)" and lists two outcomes:

- PSO1**: Graduates will be able to apply technical skills and modern engineering tools for civil engineering day to day practice.
- PSO2**: Graduates will be able to design civil engineering structures, component or process to meet desired needs with appropriate consideration for the public health and safety, cultural, societal, sustainability and environmental considerations.

The footer contains the Sri Indu Institute of Engineering & Technology logo, a "Quick Menu" with links to About us, Academics, Departments, Facilities, Examination, R & D, Library, Committees, IQAC, and Events, and an "ADMISSION NOTIFICATION" button. The text in the footer states: "Sri Indu Institute of Engineering & Technology was established by G.T. Educational Society-2006, Vanasthalipuram, Hyderabad. Sri Indu Group of Institutions was established in 2001 by New Loyola Model Education".

CIVIL Department PSOs in the website

The screenshot shows a web browser window with the URL siiet.ac.in/mech/vision-mission/. The main content area is titled "PROGRAM SPECIFIC OUTCOMES (PSO's)" and lists two outcomes:

- PSO1**: Able to design, Analyze Manufacturing Processes, Thermal systems and Industrial engineering.
- PSO2**: Ability to use the drafting software like AUTO CAD/CATIA/PRO E/CREO and ANSYS for Design and Analyze the Automobile and Aeronautical components.

The footer contains the Sri Indu Institute of Engineering & Technology logo, a "Quick Menu" with links to About us, Academics, Departments, Facilities, Examination, Training & Events, R & D, Library, Committees, IQAC, and Contact Us, and an "ADMISSION NOTIFICATION" button. The text in the footer states: "Sri Indu Institute of Engineering & Technology was established by G.T. Educational Society-2006, Vanasthalipuram, Hyderabad. Sri Indu Group of Institutions was established in 2001 by New Loyola Model Education".

MECHANICAL Department PSOs in the website



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siet.ac.in



The screenshot shows a PDF document titled "ECE-COs-A.Y-2021-22-SEM-1-2.pdf" on the website. The document header includes the SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY logo and name, along with accreditation details. The main content is titled "COURSE OUTCOMES (COs)" and describes the outcomes for the B.Tech-Electronics and Communication Engineering program in the 2021-22 academic year, Semester I & II. A table lists the course details and outcomes for EC301PC (Electronic Devices and Circuits).

S.No	Year/Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	II/I	EC301PC	Electronic Devices and Circuits	<p>CO1: Describe the applications of diode as rectifier, clippers, and clamper circuits.</p> <p>CO2: Design various switching devices such as transistor, transistor biasing.</p> <p>CO3: Analyse the operation of FET, special devices like Zener, Tunnel, Varactor diode, UJT and SCR.</p> <p>CO4: Define explain transistor hybrid model.</p> <p>CO5: Draw the operation of small signal model FET operation.</p> <p>CO6: Explain the operation of diodes, BJT, FET, Transistor amplifiers.</p>

ECE Department A.Y 2021-22 COs in the website

The screenshot shows a PDF document titled "CSE-COs-A.Y-2021-22-SEM-1-2.pdf" on the website. The document header includes the SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY logo and name, along with accreditation details. The main content is titled "COURSE OUTCOMES (COs)" and describes the outcomes for the B.Tech-Computer Science and Engineering program in the 2021-22 academic year, Semester I & II. A table lists the course details and outcomes for CS301ES (Analog and Digital Electronics).

S.No	Year/Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	II/I	CS301ES	Analog and Digital Electronics	<p>CO1: Acquire knowledge of electrical characteristics of ideal and practical diodes under forward and reverse bias to analyze and design diode application circuits such as rectifiers.</p> <p>CO2: Utilize operational principles of bipolar to derive appropriate small-signal models and use them for the analysis of basic circuits.</p> <p>CO3: Understand the basic concept of number systems, Boolean algebra principles.</p> <p>CO4: Understand minimization techniques for Boolean algebra.</p>

CSE Department A.Y 2021-22 COs in the website



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siet.ac.in



CIVIL Department A.Y 2021-22 COs in the website

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
 An UGC Autonomous Institution , Accredited by NAAC with A+ Grade
 Recognized Under 2(f) of UGC Act 1956
 Approved by AICTE, Affiliated to JNTU Hyderabad
 Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510 www.siet.ac.in

COURSE OUTCOMES (COs)
 Course Outcomes (COs) describe what students can able to do after completion of the course.

Program : B.Tech-Civil Engineering		Academic Year : 2021-22	Semester : I & II
--	--	--------------------------------	-----------------------------

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	II/I	CE301PC	Surveying and Geomatics	CO1: Define the principles of surveying and its phases and measure the directions by using chain and prismatic compass. CO2: Analyzing the levels of ground and computing the area and volumes. CO3: Explain the theodolite surveying and analyse the methods of traversing. CO4: Explain the principles of tachometry surveying and differentiate types of curves. CO5: Explain the total station and global positioning system. CO6: Define contouring and study its characteristics and its uses. CO1: Write about importance of geology from civil

CIVIL Department A.Y 2021-22 COs in the website

MECHANICAL Department A.Y 2021-22 COs in the website

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
 An UGC Autonomous Institution , Accredited by NAAC with A+ Grade
 Recognized Under 2(f) of UGC Act 1956
 Approved by AICTE, Affiliated to JNTU Hyderabad
 Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510 www.siet.ac.in

COURSE OUTCOMES (COs)
 Course Outcomes (COs) describe what students can able to do after completion of the course.

Program : B.Tech-Mechanical Engineering		Academic Year : 2021-22	Semester : I & II
---	--	--------------------------------	-----------------------------

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	III/I	ME501PC	Dynamics of Machinery	CO1: Assess the effect of Gyroscopic couple in a dynamic body such as aero plane, 4-wheeler etc. CO2: Perform static and dynamic analysis to attain equilibrium in mechanisms. CO3: Analyze friction clutches, brakes dynamometer and Governors. CO4: Determine balancing mass for rotating and reciprocating mass systems. CO5: Perform analysis of the response of one degree freedom system with free and forced vibrations. CO1: Apply fundamental design practices with regard to material selection, material properties, manufacturing considerations and standards and codes.

MECHANICAL Department A.Y 2021-22 COs in the website



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siet.ac.in



The screenshot shows a PDF document titled "HS-COs-A.Y-2021-22-SEM-1-2-1-1.pdf" from the website www.siet.ac.in. The document header includes the institute's name, accreditation details, and contact information. The main content is titled "COURSE OUTCOMES (COs)" and explains that these describe what students can do after completing the course. A table provides details for two courses: Mathematics - I and Chemistry. The Mathematics course (MA101BS) lists six COs, and the Chemistry course (CH102BS) lists three COs.

Program :	Academic Year :	Semester :
I B.Tech	2021-22	I & II

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	I/I	MA101BS	Mathematics - I	CO1: Analyze the solution of the system of linear equations in matrix representation. CO2: Find the diagonalization of the matrix. CO3: Compare the convergence between two tests for the given sequence. CO4: Evaluate Improper integrals using Beta and Gamma functions. CO5: Explain the concept of total derivative. CO6: Find the Maxima and Minima of functions of two variables and three variables.
2	I/I	CH102BS	Chemistry	CO1: Analyze the type of crystal field splitting in complexes. CO2: Develop the water free from hardness using water technology. CO3: Solve the problems of E.M.F, Electrode Potential.

First Year COs in the H&S department website



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



4. Program Outcomes (POs), Program Specific Outcomes, Program Educational Objectives (PEOs) and Course Outcomes (COs) of all the courses:-

PROGRAM OUTCOMES (POs):

Program Outcomes (POs) describe what students are expected to know and be able to do by the time of graduation. The program outcomes are:

PO1: ENGINEERING KNOWLEDGE: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: PROBLEM ANALYSIS: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: DESIGN/DEVELOPMENT OF SOLUTIONS: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: MODERN TOOL USAGE: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: THE ENGINEER AND SOCIETY: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: ENVIRONMENT AND SUSTAINABILITY: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: ETHICS: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: INDIVIDUAL AND TEAM WORK: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: COMMUNICATION: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



effective reports and design documentation, make effective presentations, give and receive clear instructions.

PO11: PROJECT MANAGEMENT AND FINANCE: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: LIFE-LONG LEARNING: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

Program Educational Objectives (PEOs) describe the career and professional accomplishments that programs are preparing graduates to attain within a few years of graduation.

The B.Tech. in **Electronics and Communications Engineering (ECE)** program has the following Program Educational Objectives.

PEO1 : Graduates with a strong foundation in Electronics and Communication Engineering, Science and Technology to become successful in the chosen professional career.

PEO2 : Graduates with ability to execute innovative ideas for Research and Development with continuous learning.

PEO3 : Graduates inculcated with industry based soft-skills to enable employability.

PEO4 : Graduates demonstrate with ability to work in interdisciplinary teams and ethical professional behaviour.

The B.Tech. in **Computer Science and Engineering (CSE)** program has the following Program Educational Objectives.

PEO1 : To develop trained graduates with strong academic and technical skills of modern computer science and engineering.

PEO2 : To promote trained graduates with leadership qualities and the ability to solve real time problems using current techniques and tools in interdisciplinary environment.

PEO3 : To motivate the graduates towards lifelong learning through continuing education and professional development.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



The B.Tech. in **Mechanical Engineering(MECH)** program has the following Program Educational Objectives.

- PEO1** : Domain Knowledge: Graduates with the ability to analyze and solve mechanical engineering problems with fundamentals of engineering, Mathematics and Physical sciences.
- PEO2** : Professional Employment: Graduates employable in the industry (automobile and manufacturing) and contribute towards, R&D with continuous learning.
- PEO3** : Engineering Citizenship: Graduates prepared to communicate and work effectively on interdisciplinary engineering projects and practice ethics, social responsibility.

The B.Tech. in **Civil Engineering (CE)** program has the following Program Educational Objectives.

- PEO1** : To provide the students with a strong foundation in the basic sciences and mathematics that will enable them to identify and solve real time problems in civil engineering for industries and research activities.
- PEO2** : To provide opportunity for students to work as part of teams on multidisciplinary projects. Students shall have relevant engineering design experience so that they shall understand the relationship between theory and practice for core subjects.
- PEO3** : To adopt new innovative technology by continuously updating their knowledge through lifelong learning achieving personal and organization growth.

PROGRAM SPECIFIC OBJECTIVES (PSOs):

Program Specific Outcomes (PSOs) describes that what students can able to do after completion of the program.

The B.Tech. in **Electronics and Communication Engineering(ECE)** program has the following Program Specific Objectives.

- PSO1** : Design Skills: Design, analysis and development a economical system in the area of Embedded system & VLSI design.
- PSO2** : Software Usage: Ability to investigate and solve the engineering problems using MATLAB, Keil and Xilinx.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in



The B.Tech. in **Computer Science Engineering (CSE)** program has the following Program Specific Objectives.

PSO1 : Professional Skills: To implement computer programs of varying complexity in the areas related to Web Design, Cloud Computing, Network Security and Artificial Intelligence.

PSO2: Problem-Solving Skills: To develop quality products using open ended programming environment.

The B.Tech. in **Mechanical Engineering (MECH)** program has the following Program Specific Objectives.

PSO1 : Able to design, analyze manufacturing processes, Thermal systems and Industrial engineering.

PSO2: Ability to use the drafting software like AUTO CAD / CATIA / PRO E / CREO and ANSYS for design and analyze the automobile and aeronautical components.

The B.Tech. in **Civil Engineering (CE)** program has the following Program Specific Objectives.

PSO1 : Graduates will be able to apply technical skills and modern engineering tools for civil engineering day to day practice.

PSO2: Graduates will be able to design civil engineering structures, component or process to meet desired needs with appropriate consideration for the public health and safety, cultural, societal, sustainability and environmental considerations.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

COURSE OUTCOMES (COs)

Course Outcomes (COs) describe what students can able to do after completion of the course.

Program : B.Tech-Electronics and Communication Engineering	Academic Year : 2021-22	Semester : I & II
--	--------------------------------	-----------------------------

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	II/I	EC301PC	Electronic Devices and Circuits	CO1: Describe the applications of diode as rectifier, clippers, and clamper circuits.
				CO2: Design various switching devices such as transistor, transistor biasing.
				CO3: Analyse the operation of FET, special devices like Zener, Tunnel, Varactor diode, UJT and SCR.
				CO4: Define explain transistor hybrid model.
				CO5: Draw the operation of small signal model FET operation.
				CO6: Explain the operation of diodes, BJT, FET, Transistor amplifiers.
2	II/I	EC302PC	Network Analysis and Transmission Lines	CO1: Gain the knowledge on basic network elements and magnetic circuits.
				CO2: Analyze the RLC circuits in detail.
				CO3: Gain the knowledge in characteristics of two port network parameters (Z, Y, ABCD, H & G).
				CO4: Gain the knowledge in network function driving point in transfer function using s variables, poles and zeros.
				CO5: Analyze the transmission line parameters and configurations.
				CO6: Analyze smith chart configuration & applications.
3	II/I	EC303PC	Digital System Design	CO1: State the Boolean algebra, different number systems and codes. Change one number system into another number system.
				CO2: Design the different combinational logic circuits. Modify and transform one form of Boolean equation to another form and simplify the Boolean equation in K-Map.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO3: Design the different Sequential circuits. Analyze and compare the flipflops and transform one flipflop to another flipflop.</p> <p>CO4: Design synchronous and asynchronous counters. Analyze and differentiate the sequential machine.</p> <p>CO5: Define, Differentiate between logic families and realization of logic gates using diodes and transistors</p> <p>CO6: Design the digital system.</p>
4	II/I	EC304PC	Signals and Systems	<p>CO1: Explain any arbitrary signals in terms of complete sets of orthogonal functions and understands the principles of impulse functions, step function and signum function.</p> <p>CO2: Express periodic signals in terms of Fourier series and express the spectrum and express the arbitrary signal (discrete) as Fourier transform to draw the spectrum.</p> <p>CO3: Analyze the characteristics of linear time invariant systems.</p> <p>CO4: Explain response can be obtained using Laplace transform and Z- Transform, properties and ROC of L.T and Z- Transform.</p> <p>CO5: Analyze the Sampling theorem, reconstruction, aliasing, and Nyquist's theorem to represent continuous time signals in discrete time.</p> <p>CO6: Compare auto Correlation and cross correlation and concept of power density spectrum.</p>
5	II/I	EC305ES	Probability Theory and Stochastic Processes	<p>CO1: Attain the knowledge of Probability theory and random variables.</p> <p>CO2: Explain the Vector Random variables and joint distribution function.</p> <p>CO3: Understand the response of linear time Invariant system for a Random Processes.</p> <p>CO4: Analyze the random variable and random process, its properties.</p> <p>CO5: Determine the Spectral and temporal characteristics of Random Signals.</p> <p>CO6: Analyze the concepts of Noise in Communication systems.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

6	II/I	EC306PC	Electronic Devices and Circuits Lab	CO1: Describe the applications of diode as rectifier, clippers and clamper circuit.
				CO2: Design various switching devices such as transistor, transistor biasing.
				CO3: Analyze the operation of FET, Special devices like Zener, Tunnel. Varactor diode, UJT, SCR.
				CO4: Define explain transistor hybrid model.
				CO5: Draw the operation of small signal model FET operation.
				CO6: Examine the operation of diodes, BJT, FET, Transistor amplifiers.
7	II/I	EC307PC	Digital System Design Lab	CO1: Identify the IC configurations of digital circuits.
				CO2: Verify and compare different types of gates and comparators.
				CO3: Develop the clock using universal gates.
				CO4: Design and realization of sequential circuits.
				CO5: Analyze and implementation of sequential circuits.
				CO6: Compare combinational and sequential circuits.
8	II/I	EC308ES	Basic Simulation Lab	CO1: Identify the basic operations on matrices.
				CO2: Identify and Analyze the various signals and sequences.
				CO3: Point out even and odd signals and real and imaginary parts of signals.
				CO4: Construct the convolution for signals and sequence, Linear-Non linear and time variant-Invariant of sequences.
				CO5: Compare the auto correlation, cross correlation.
				CO6: Describe sampling.
9	II/I	*MC309	Constitution of India	CO1: Understand meaning, features, characteristics of constitution law and constitutionalism.
				CO2: Describe fundamental rights, fundamental duties and its legal status.
				CO3: Describe The constitution powers and status of the President of India.
				CO4: Understand Emergency Provisions: National Emergency, President Rule, And Financial Emergency.
				CO5: Understand Fundamental Right to Equality, Fundamental Right to certain Freedom under Article 19.
				CO6: Describe the Scope of the Right to Life and



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				Personal Liberty under Article 21.
10	II/II	MA401BS	Laplace Transforms, Numerical Methods & Complex Variables	CO1: Describe the use of Laplace Transform techniques when solving ordinary differential equations.
				CO2: Solve the polynomial and transcendental equations.
				CO3: Determine the Numerical solutions for given ordinary differential equations.
				CO4: Identify the Differential Numerical Methods.
				CO5: Describe the Complex function with their analyticity, integration using Cauchy's Integral and Residue theorems.
				CO6: Discuss the Taylor's and Laurent series expansions.
11	II/II	EC402PC	Electromagnetic Fields and Waves	CO1: Apply the basic laws to derive the Maxwell's Equation in Differential and Integral form for solving the engineering problems in Electrostatics.
				CO2: Describe the knowledge of Magnetic Scalar and Vector Potentials, Forces due to Magnetic Fields, Ampere's Force Law.
				CO3: Distinguish between static and Time varying fields, apply these concepts to derive the Maxwell's Equation in Differential, Integral form and boundary conditions for solving the engineering problems.
				CO4: Analyze the wave equation for good conductors and good dielectrics, criticize and apply the characteristics of uniform plane wave for practical problems.
				CO5: To analyze the characteristics of Uniform Plane Waves (UPW), determine their propagation parameters and estimate the same for dielectric and dissipative media.
				CO6: Analyze the rectangular waveguides, their mode characteristics, and design waveguides for solving practical problems.
12	II/II	EC403PC	Analog and Digital Communications	CO1: Design various continuous wave modulation and demodulation techniques.
				CO2: Analyze Frequency Modulation (FM) Techniques.
				CO3: Analyze Phase Modulation (PM) Techniques.
				CO4: Design various AM and FM transmitters.
				CO5: Describe various Pulse Modulation Techniques.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO6: Analyze various digital modulation techniques and baseband transmission.
13	II/II	EC404PC	Linear IC Applications	CO1: Describe the characteristics of Operational Amplifier with linear integrated circuits.
				CO2: Analyze the different applications of Operational Amplifier.
				CO3: Produce the different wave forms of filters and oscillators.
				CO4: Describe the functional diagrams and applications of IC 555 & IC 565.
				CO5: Explain various techniques to design analog to digital converters and digital to analog converters.
				CO6: Design the linear integrated circuits using operational Amplifier.
14	II/II	EC405PC	Electronic Circuit Analysis	CO1: Design the multistage amplifiers and develop & analyze transistor amplifier circuits using Hybrid π model at high frequencies.
				CO2: Design of Feedback amplifiers and their frequency response.
				CO3: Understand the design of various oscillators such as RC Phase Shift Oscillator, Wein Bridge Oscillator, Crystal, LC oscillator.
				CO4: Design and compare various Power amplifiers such as Class A, Class B, Class AB amplifiers, Analysis of various tuned amplifiers etc.
				CO5: Design Multivibrators.
				CO6: Understand sweep circuits for various applications.
15	II/II	EC406PC	Analog and Digital Communications Lab	CO1: Identify the basics of analog and digital communication systems.
				CO2: Design and Implement different modulation and demodulation techniques.
				CO3: Analyze and implement analog to digital, digital to analog converters.
				CO4: Describe practical implementation of baseband modulation techniques.
				CO5: Design and implement different pulse modulation techniques like PAM, PWM and PPM.
				CO6: Compare analog and digital modulation techniques.
16	II/II	EC407PC	IC Applications Lab	CO1: Design inverting and non inverting, adder and subtractor or amplifier using op-amp.
				CO2: Verify a comparator, Integrator and Differentiator using op-amp and voltage regulator using IC723.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO3: Design active filters, PLL.</p> <p>CO4: Analysis of IC741 waveform generator sine, square, triangular waves.</p> <p>CO5: Design a Monostable, Astable Multivibrator and Schmitt trigger.</p> <p>CO6: Identify and verify the functionalities of the linear integrated circuits.</p>
17	II/II	EC408PC	Electronic Circuit Analysis Lab	<p>CO1: Design and simulate different BJT amplifiers: CE amplifier, Two stage RC coupled amplifier, Cascode, Darlington pair.</p> <p>CO2: Design and simulate feedback amplifiers: Current shunt feedback amplifier, Voltage series feedback amplifiers.</p> <p>CO3: Design and simulate different oscillators: RC phase shift oscillator, Hartley and colpitt's oscillators.</p> <p>CO4: Design and simulate power amplifiers: Class A power amplifier, Class B complementary symmetry amplifier.</p> <p>CO5: Design Monostable Multivibrator.</p> <p>CO6: Design Miller sweep circuit.</p>
18	II/II	*MC409	Gender Sensitization Lab	<p>CO1: Develop sensibility with regard to issues of gender in contemporary India.</p> <p>CO2: Provide a critical perspective on the socialization of men and women.</p> <p>CO3: Determine information about some key biological aspects of genders.</p> <p>CO4: Debate on the politics and economics of work.</p> <p>CO5: Reflect critically on gender violence.</p> <p>CO6: Expose more egalitarian interactions between men and women.</p>
19	III/I	EC501PC	Microprocessors & Microcontrollers	<p>CO1: Basic understanding of 8086 microprocessors architectures and its functionalities.</p> <p>CO2: Design and develop 8086 Microprocessor based systems for real time applications using low level language like ALP.</p> <p>CO3: Basic understanding of 8051 microcontroller's architectures and its functionalities.</p> <p>CO4: Discuss the input /output memory interface Serial Communication and Bus Interface device.</p> <p>CO5: Analyze the internal architecture of ARM.</p> <p>CO6: Classify the internal architecture of CORTEX ARM Processor and MAP ARM Processor.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

20	III/I	EC502PC	Data Communications and Networks	CO1: Explain conceptual foundation for study of data communication using layered architecture.
				CO2: Analyze network Interface protocol and Design Performance issues in MAC in DLL.
				CO3: Evaluate the functioning of routing algorithm and internetworking.
				CO4: Analyze reliable transmission and analyze the performance of TCP protocols.
				CO5: Demonstrate the significance of various flow control and congestion control mechanisms.
				CO6: Analyze the features and operation of various application layer protocols such as Http, DNS &STMP.
21	III/I	EC503PC	Control Systems	CO1: Create mathematical model using Laplace Transform and define the Transfer Function of an LTI system in various ways.
				CO2: Analyze the response of First and second order systems in time domain using characteristic Equations for feedback control systems, and also evaluate the stability of a system in Time Domain using RH Criterion and Root Locus.
				CO3: Examine Frequency response analysis of a Control System and Solve the stability of the system using BODE Plots.
				CO4: Analyze the stability of a system in frequency domain using polar and Nyquist's plots.
				CO5: Design and implementation of Compensators and Controllers to improve stability.
				CO6: Design state model of a system and determine the transfer function for Linear Time Variant Systems.
22	III/I	SM504MS	Business Economics & Financial Analysis	CO1: The students will understand various forms of Business and the impact of economic variables on the business.
				CO2: Understand the significance of elasticity of demand and its forecasting, law of demand and its exceptions and supply analysis.
				CO3: Understand production analysis function with different variables and cost analysis functions.
				CO4: To adopt the principles of accounting to record, classify and summarize various transactions in books of accounts for preparation of final accounts.
				CO5: Understand the Ratio analysis to give an idea about financial forecasting, financial planning, controlling and decision making.
				CO6: Understand the implementation of different structures of markets.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

23	III/I	EC513PE	Electronic Measurements and Instrumentation (PE- I)	CO1: Analyze the various electronic instruments based on their specifications for carrying out a particular task of measurements.
				CO2: Explain the various types of signal generators, signal analyzers for generating and analyzing various real time signals.
				CO3: Define the different types of oscilloscopes and the characteristics of the signals.
				CO4: Compare different types of transducer like piezoelectric and magneto strictive Transducers.
				CO5: Define and distinguish the types of bridges and measuring the physical parameters like Humidity, moisture, velocity and force.
				CO6: Relate the use of measuring instruments in real time applications.
24	III/I	EC505PC	Microprocessors & Microcontrollers Lab	CO1: Basic understanding of 8086 microprocessors architectures and its functionalities.
				CO2: Design and develop 8086 Microprocessor based systems for real time applications using low level language like ALP.
				CO3: Basic understanding of 8051 microcontroller's architectures and its functionalities.
				CO4: Discuss the input /output memory interface Serial Communication and Bus Interface device.
				CO5: Analyze the internal architecture of ARM.
				CO6: Classify the internal architecture of CORTEX ARM Processor and MAP ARM Processor.
25	III/I	EC506PC	Data Communications and Networks Lab	CO1: Explain conceptual foundation for study of data communication using layered architecture.
				CO2: Analyze network Interface protocol and Design Performance issues in MAC in DLL.
				CO3: Evaluate the functioning of routing algorithm and internetworking.
				CO4: Analyze reliable transmission and analyze the performance of TCP protocols.
				CO5: Demonstrate the significance of various flow control and congestion control mechanisms.
				CO6: Analyze the features and operation of various application layer protocols such as Http, DNS &STMP.
				CO1: Speak effectively.
				CO2: Express and communicate fluently and



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

26	III/I	EN508HS	Advanced Communication Skills Lab	appropriately in social professional contexts.
				CO3: Develop the comprehensive ability through English language enables the students in understanding and assimilating other engineering subjects.
				CO4: The awareness of English lab enriches their communication and soft skills contributing to their overall development and success.
				CO5: Draft various letters and reports for all official purpose.
				CO6: Take part in social and professional communication.
27	III/I	*MC510	Intellectual Property Rights	CO1: Understand different types of intellectual property.
				CO2: Analyze purpose, functions, selection and evaluation of Trade Marks.
				CO3: Explain law of copy rights.
				CO4: Explain law of patents.
				CO5: Understand trade secret, Trade secret status and trade secret litigation.
				CO6: Identify new developments in intellectual property.
28	III/II	EC601PC	Antennas and Propagation	CO1: Characterize the antennas based on frequency.
				CO2: Identify the antenna array patterns.
				CO3: Understand the concept of antenna measurements.
				CO4: Design VHF, UHF and microwave antennas.
				CO5: Analyze micro strip antennas.
				CO6: Characterize different wave propagations.
29	III/II	EC602PC	Digital Signal Processing	CO1: Understand the LTI system characteristics and Multi rate signal processing.
				CO2: Understand the inter-relationship between DFT and various transforms.
				CO3: Design IIR digital filters for a given specification.
				CO4: Design FIR digital filters for a given specification.
				CO5: Express Z -transform analysis on signals and systems.
				CO6: Understand the significance of various filter structures and effects of round off errors.
30	III/II	EC603PC	VLSI Design	CO1: Acquire knowledge of the Fabrication of IC using various MOS circuits and can be able to compute electrical properties of MOS circuits.
				CO2: Understand vlsi design flow and design rules for



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				layout of IC.
				CO3: Design various gates, adders, Multipliers and Memories using stick diagrams, layouts.
				CO4: Design various forms of memories.
				CO5: Demonstrate semiconductor IC design such as PLA's, PAL, FPGA, CPLDs.
				CO6: Understand differential strategies for testing of IC's and CMOS.
31	III/II	EC613PE	Embedded System Design (PE-II)	CO1: Describe the basics of an embedded system.
				CO2: Interpret the types of memory and interfacing to external world.
				CO3: Analyze the embedded firmware design approaches.
				CO4: Design the RTOS based embedded system for multitasking.
				CO5: Express the task communication/synchronization issues.
				CO6: Assess the method of designing an embedded system for any type of application.
32	III/II	MT600OE	Industrial Management (OE-I)	CO1: Write the concepts of management and organization and explain the management theories.
				CO2: Explain principles and types of plant layout and stores management and stores record.
				CO3: Explain functions of management, marketing mix and marketing strategies.
				CO4: What is HRM and Human Resource Planning, Recruitment and selection, Training & Development.
				CO5: Solve network analysis and identify critical path and project crashing using PERT and CPM methods.
				CO6: What is strategic management and contemporary strategic issues.
33	III/II	EC604PC	Digital Signal Processing Lab	CO1: Apply knowledge of digital filter design for various applications.
				CO2: Analyze various signals in transform domain.
				CO3: Apply MultiMate concepts in different areas.
				CO4: Perform real time experiments on processors such as audio and speak processing.
				CO5: Work with MATLAB functions.
				CO6: Analyze and design different signals & filters using MATLAB.
34	III/II	EC605PC	e – CAD Lab	CO1: Realize all the logic gates.
				CO2: Design different types of encoders and decoders
				CO3: Differentiate multiplexers and demultiplexers.
				CO4: Design converters.
				CO5: Analyze adders and subtractions.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO6: Design different types of flip flops & Counters.
35	III/II	EC606PC	Scripting Languages Lab	CO1: Understand the difference between scripting languages and programming languages.
				CO2: Gain some fluency programming in Ruby, Perl, TCL.
				CO3: Write different scripts on numbers and strings.
				CO4: Understand different functions in Perl Program.
				CO5: Gain knowledge on list operations using TCL.
				CO6: Gain knowledge on routines in scripting language.
36	III/II	*MC609	Environmental Science	CO1: Understand ecological principles.
				CO2: Evaluate environmental regulations.
				CO3: Classify the natural resources.
				CO4: Differentiate Biodiversity and Biotic resources.
				CO5: Describe environmental pollution control techniques.
				CO6: Gain knowledge on environmental protection Act.
37	IV/I	EC701PC	Microwave and Optical Communications	CO1: Recognize the microwave bands, applications and rectangular waveguides.
				CO2: Analyze the waveguide components and cavity resonators.
				CO3: Classify O type and M type microwave tubes.
				CO4: Explain the microwave solid state devices and applications.
				CO5: Illustrate microwave measurements by using microwave bench.
				CO6: Describe the significance of microwave transmission lines and wave guides.
38	IV/I	EC713PE	Digital Image Processing (PE–III)	CO1: Define digital image fundamentals, sampling and quantization, relationship between pixels, different types of image transforms.
				CO2: Design concepts including the topics of filtering and types of operations.
				CO3: Solve the derivations of different types of restoration filters.
				CO4: Compare different types of segmentation and morphing concepts.
				CO5: Classify compression models and their redundancies.
				CO6: Have the skill base summary to further explore advance the topics of digital image processing.
				CO1: Understand various attacks on the network and understanding the need for security.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

39	IV/I	EC723PE	Network Security and Cryptography (PE– IV)	CO2: Apply various classical encryption techniques on messages and analyze various security services and mechanisms.
				CO3: Compare and contrast symmetric and asymmetric key cryptographic systems.
				CO4: Describe the cryptographic hash functions, message authentication codes and various key management and distribution techniques.
				CO5: Explain different protocols like SSL, TLS, HTTPS, SSH and various wireless network standards.
				CO6: Analyze how PGP and S/MIME is used to protect messages transmitted through E- Mail and explains IPSEC.
40	IV/I	CS703OE	Java Programming (OE- II)	CO1: Understand object oriented thinking and java basics.
				CO2: Gain the knowledge of Inheritance, Packages and Interfaces in Java programming.
				CO3: Explain about exception handling.
				CO4: Describe multithreading.
				CO5: Understand Event Handling.
41	IV/I	SM702MS	Professional Practice, Law & Ethics	CO1: Define Professional Ethics.
				CO2: Understand law of contract and essential elements of valid contract.
				CO3: Describe Arbitration, Conciliation and ADR system.
				CO4: Explain the importance of Dispute Resolution Boards like Lok Adalats.
				CO5: Differentiate construction related laws.
42	IV/I	EC703PC	Microwave and Optical Communications Lab	CO1: Recognize the microwave bands, applications and rectangular waveguides.
				CO2: Analyze the waveguide components and cavity resonators.
				CO3: Classify O type and M type microwave tubes.
				CO4: Explain the microwave solid state devices and applications.
				CO5: Illustrate microwave measurements by using microwave bench.
				CO6: Describe the significance of microwave transmission lines and wave guides.
				CO1: Analyze new problems, identify and define the appropriate requirements for their solutions.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

43	IV/I	EC704PC	Industrial Oriented Mini Project	CO2: Understand team work to complete to reach the target.
				CO3: Learn new technologies in the engineering fields.
44	IV/I	EC705PC	Seminar	CO1: Express public speaking during presentations.
				CO2: Analyze new technologies in all engineering fields.
				CO3: Effectively communicate by making an oral presentation.
45	IV/I	EC706PC	Project Stage-I	CO1: Analyze new problems, identify and define the appropriate requirements for their solutions.
				CO2: Understand team work to complete to reach the target.
				CO3: Learn new technologies in the engineering fields.
46	IV/II	EC811PE	Satellite Communications (PE– V)	CO1: Obtain different types of satellites and to calculate the orbital determination and launching methods.
				CO2: Develop commands, monitoring power systems.
				CO3: Calculate multiple access techniques like TDMA,CDMA,FDMA,DAMA.And design antennas to provide uplink and down link frequency.
				CO4: Design different kinds of transmitter and receiver antennas.
				CO5: Demonstrate the impacts of GPS, Navigation, NGSO and constellation design for tracking and launching.
				CO6: Design satellite for real time applications.
47	IV/II	EC823PE	Low Power VLSI Design (PE-VI)	CO1: Carry out research and development in the area of Low Power VLSI circuits.
				CO2: Apply techniques to improve power consumption of VLSI circuits.
				CO3: Utilize logic simulation methods to design Low Power VLSI circuits.
				CO4: Apply logic level, architecture level and system level techniques in various designs to optimize power consumption of the VLSI circuits.
				CO5: Known the design of Low voltage Low power memories.
				CO6: Implement practical and state of the art Low Power VLSI design , Suitable for real life and industry applications.
48	IV/II	CS800OE	Machine Learning (OE-III)	CO1: Understand decision tree learning.
				CO2: Understand Artificial Neural Networks.
				CO3: Analyze Bayesian learning.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO4: Implement Computational learning theory.
				CO5: Learn set of rules in learning.
				CO6: Understand Analytical learning.
49	IV/II	EC801PC	Project Stage - II	CO1: Analyze new problems, identify and define the appropriate requirements for its solutions.
				CO2: Understand of the impact of engineering solutions.
				CO3: Understand team work to complete a common goal.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

COURSE OUTCOMES (COs)

Course Outcomes (COs) describe what students can able to do after completion of the course.

Program : B.Tech-Computer Science and Engineering	Academic Year : 2021-22	Semester : I & II
---	--------------------------------	-----------------------------

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	II/I	CS301ES	Analog and Digital Electronics	CO1: Acquire knowledge of electrical characteristics of ideal and practical diodes under forward and reverse bias to analyze and design diode application circuits such as rectifiers.
				CO2: Utilize operational principles of bipolar to derive appropriate small-signal models and use them for the analysis of basic circuits.
				CO3: Understand the basic concept of number systems, Boolean algebra principles.
				CO4: Understand minimization techniques for Boolean algebra.
				CO5: Analyze Combination logic circuit such as multiplexers, adders, decoders.
				CO6: Understand about synchronous and asynchronous sequential logic circuits.
2	II/I	CS302PC	Data Structures	CO1: Choose appropriate data structures to represent data items.
				CO2: Analyze the time and space complexities of algorithms.
				CO3: Design programs using a variety of data structures such as stacks, queues, hash tables, binary trees, search trees, heaps, graphs and B-trees.
				CO4: Analyze and implement various kinds of searching and sorting methods.
				CO5: Describe how arrays, linked structures, stacks, queues, trees, and graphs are represented in memory.
				CO6: Design programs using c language.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

3	II/I	MA303BS	Computer Oriented Statistical Methods	CO1: Describe the conditional probability and state the Baye’s theorem and solve its applications.
				CO2: Solve the problems on random variables and compare the difference between probability distributions.
				CO3: Construct the area of normal curve and distinguish binominal, gamma and exponential distributions.
				CO4: Formulate the sampling distribution of means and sampling distribution of variances.
				CO5: Classify the methods of estimations and errors of estimations.
				CO6: Identify the test of hypothesis for single mean , proportion and difference between the means , proportions and learn the concept of Markov process and different types of states.
4	II/I	CS304PC	Computer Organization and Architecture	CO1: Describe basics of computer organization and register transfer languages and micro operations such as arithmetic, logic, shift micro operations.
				CO2: Explain about computer instructions, computer registers and instruction cycle and interrupt cycle.
				CO3: Describe the design of control unit with address sequencing and microprogramming concept and CPU with instruction formats, addressing modes and types of instructions such as data transfer, manipulation and program control.
				CO4: Describe various data representations and explain how arithmetic operations are performed by computer.
				CO5: Illustrate the concepts of Input-Output Organization and Memory Organization.
				CO6: Describe the parallel processing and multiprocessors concept.
5	II/I	CS305PC	Object Oriented Programmin g using C++	CO1: Develop application for a range of problem using object oriented programming concepts.
				CO2: Construct programs on various methodology using class and object.
				CO3: Illustrate the different forms of inheritance.
				CO4: Construct and develop programs with reusability using polymorphism and virtual function.
				CO5: Develop programs for file handling.
				CO6: Identify and can handle exceptions in programming.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

6	II/I	CS306ES	Analog and Digital Electronics Lab	CO1: Know the characteristics of various components.
				CO2: Understand the utilization of components.
				CO3: Design and analyze small signal amplifier circuits.
				CO4: Postulates of Boolean algebra and to minimize combinational functions.
				CO5: Design and analyze combinational and sequential circuits.
				CO6: Known about the logic families and realization of logic gates.
7	II/I	CS307PC	Data Structures Lab	CO1: Summarize different categories of data Structures.
				CO2: Analyze the performance of an algorithm.
				CO3: Develop C programs for computing control statements.
				CO4: Understand C programs for computing arrays, functions, pointers, strings.
				CO5: Understand stacks, queues and linked lists.
				CO6: Ability to Implement searching and sorting algorithms.
8	II/I	CS308PC	IT Workshop Lab	CO1: Identify the parts of CPU and able to learn knowledge for computer assembling and disassembling.
				CO2: Resolve the Software installation.
				CO3: Ability to solve the trouble shooting problems.
				CO4: Apply the techniques and netiquettes while using internet.
				CO5: Model a web page by using HTML
				CO6: Apply the tools for preparation of PPT, Documentation and budget sheet etc.
9	II/I	CS309PC	C++ Programming Lab	CO1: Identify and able to develop applications for a range of problems on operators such as scope resolution and new delete memory allocation.
				CO2: Write basic concepts on initializing and displaying contents of class member and structure of class.
				CO3: Develop basic programs on inheritance.
				CO4: Identify and able to do programs to use pointer for both base and derived classes and call the member function by using Virtual keyword.
				CO5: Develop basic programs on console i/o operations.
				CO6: Develop programs on arrays and inline functions.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

10	II/I	*MC309	Gender Sensitization Lab	CO1: Develop sensibility with regard to issues of gender in contemporary India.
				CO2: Provide a critical perspective on the socialization of men and women.
				CO3: Determine information about some key biological aspects of genders.
				CO4: Debate on the politics and economics of work.
				CO5: Reflect critically on gender violence.
				CO6: Expose more egalitarian interactions between men and women.
11	II/II	CS401PC	Discrete Mathematics	CO1: Understand and construct precise mathematical proofs.
				CO2: Use logic and set theory to formulate precise statements.
				CO3: Analyze and solve counting problems on finite and discrete structures.
				CO4: Describe and manipulate sequences.
				CO5: Apply graph theory in solving computing problems.
12	II/II	SM402MS	Business Economics & Financial Analysis	CO1: The students will understand various forms of Business and the impact of economic variables on the business.
				CO2: Understand the significance of elasticity of demand and its forecasting, law of demand and its exceptions and supply analysis.
				CO3: Understand production analysis function with different variables and cost analysis functions.
				CO4: To adopt the principles of accounting to record, classify and summarize various transactions in books of accounts for preparation of final accounts.
				CO5: Understand the Ratio analysis to give an idea about financial forecasting, financial planning, controlling and decision making.
				CO6: Understand the implementation of different structures of markets covering how price-output is determined under different market structures.
13	II/II	CS403PC	Operating Systems	CO1: Describe operating system goals and functions.
				CO2: Get the knowledge of process, various CPU scheduling algorithms and synchronization.
				CO3: Analyze the methods for handling deadlocks.
				CO4: Understand the memory management and several page replacement algorithms.
				CO5: Classify the storage management and file system implementation.
				CO6: Express the various system protection methods.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

14	II/II	CS404PC	Database Management Systems	CO1: Identify and understand the underlying concepts of database techniques and query a database using DML/DDL commands and able to design entity relationship diagrams.
				CO2: Explain the concepts of relational data model, entity-relationship model and relational database design.
				CO3: Apply relational algebra and calculus, understands the use of sql and learns sql syntax.
				CO4: Develop and improve database design by normalization.
				CO5: Define transaction and understand its properties. Learns techniques for controlling the consequences of concurrent data access.
				CO6: Describe basic database storage structures and access techniques: file and page organisations, index methods including B tree and Hashing.
15	II/II	CS405PC	Java Programming	CO1: Analyze Object Oriented Programming Concepts.
				CO2: Develop the Abstract Classes and know the importance of the Inheritance, Encapsulation and Polymorphism.
				CO3: Implementing interfaces and creating packages and create files and directories using g Java I/O Streams.
				CO4: Get the importance of Exception handling and knowledge of multithreading and java collection classes concepts.
				CO5: Design web applications by using applets and swings.
				CO6: Recognize event handling concepts in java.
16	II/II	CS406PC	Operating Systems Lab	CO1: Develop programs on CPU scheduling algorithms.
				CO2: Construct the programs on file organisation and file allocation techniques.
				CO3: Solve deadlock avoidance and deadlock prevention using Bankers' algorithm.
				CO4: Classify and construct programs on memory management techniques.
				CO5: Develop application programs using system calls.
				CO6: Describe inter processes communication between the processes using semaphores and named pipes.
				CO1: Identify and understand the underlying relational data model, entity-relationship model and relational database design.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

17	II/II	CS407PC	Database Management Systems Lab	CO2: Develop and improve database design by normalization.
				CO3: Identify and understand the underlying concepts of database techniques and query a database using DML/DDL commands.
				CO4: Identify and understands the use of sql and learns sql syntax of set difference operators and joins.
				CO5: Write basic database query using Aggregate operators.
				CO6: Write basic database on Triggers and procedures.
18	II/II	CS408PC	Java Programming Lab	CO1: Construct the programs for Abstract classes, Inheritance and Interface.
				CO2: Write the program for Multithreading and Files operations.
				CO3: Prepare the programs for applets.
				CO4: Develop the basic applications by using Swing components.
				CO5: Construct the programs for collection Framework.
19	II/II	*MC409	Constitution of India	CO1: Understand meaning, features, characteristics of constitution law and constitutionalism.
				CO2: Describe fundamental rights, fundamental duties and its legal status.
				CO3: Describe The constitution powers and status of the President of India.
				CO4: Understand Emergency Provisions: National Emergency, President Rule, And Financial Emergency.
				CO5: Understand Fundamental Right to Equality, Fundamental Right to certain Freedom under Article 19.
20	III/I	CS501PC	Formal Languages & Automata Theory	CO1: Understand the basic properties of formal languages and grammars.
				CO2: Differentiate regular, context-free and recursively enumerable languages.
				CO3: Make grammars to produce strings from a specific language.
				CO4: Acquire concepts relating to the theory of computation and computational models including decidability and intractability.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO5: Understand Importance of enumerable languages.</p> <p>CO6: Analyze Automata Theory.</p>
21	III/I	CS502PC	Software Engineering	<p>CO1: Analyze various data base techniques for data warehouse and able to perform OLAP Operations.</p> <p>CO2: Ability to perform the Pre-processing of data and apply mining techniques on data.</p> <p>CO3: Understand frequent set and apply association Rule on Data Set.</p> <p>CO4: Evaluate the data mining ask like Classification, Regression Clustering on large data set.</p> <p>CO5: Ability to solve real world Problems in business and scientific information using data mining.</p> <p>CO6: Ability to understand clustering Concepts in the real world and apply Various clustering techniques.</p>
22	III/I	CS503PC	Computer Networks	<p>CO1: Gain the knowledge of the basic computer network technology.</p> <p>CO2: Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model.</p> <p>CO3: Obtain the skills of subnetting and routing mechanisms.</p> <p>CO4: Familiarity with the essential protocols of computer networks, and how they can be applied in network design and implementation.</p> <p>CO5: Analyze Application Layer.</p> <p>CO6: Analyze transport Layer.</p>
23	III/I	CS504PC	Web Technologies	<p>CO1: Construct the web applications using HTML language.</p> <p>CO2: Explain server side scripting with PHP language.</p> <p>CO3: Identify well formed/valid XML documents.</p> <p>CO4: Develop server side applications using servlets.</p> <p>CO5: Get the knowledge on Java Server Pages.</p> <p>CO6: Evaluate the validation of forms using Java Script and Explain AJAX.</p>
24	III/I	CS515PE	Principles of Programming languages (Professional Elective-I)	<p>CO1: Explain the basic concepts of Principles of Programming Languages.</p> <p>CO2: Understand Names, Variables, Binding, Data Types, Control Structures in Programming Languages.</p> <p>CO3: Analyze the fundamentals of sub-programs and Implementation of Sub Programs.</p> <p>CO4: Explain the concept of Abstract Data Types.</p> <p>CO5: Understand Concurrency, Java Threads, Exception Handling, Event Handling concepts in Java and C##.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO6: Differentiate Functional Programming Languages, Logic Programming Languages, Scripting Language.
25	III/I	CS524PE	Distributed Database (Professional Elective –II)	CO1: Understand the Architecture of distributed DBMS Architecture.
				CO2: Describe Query processing and decomposition in distributed databases.
				CO3: Explain Properties of transaction, Types of transaction.
				CO4: Analyze deadlock management
				CO5: Understand reliability and measures concepts in distributed databases.
				CO6: Describe distributed object database management system.
26	III/I	CS505PC	Software Engineering Lab	CO1: Understand the software engineering methodologies involved in the phases for project development.
				CO2: Gain knowledge about open source tools used for implementing software engineering methods.
				CO3: Exercise developing product-start-ups implementing software engineering methods.
				CO4: Study the problem and identify the project scope, Objectives and Infrastructure.
				CO5: Identify the modules of the project and differentiate the functional and non-functional requirements.
				CO6: Create prototypes for the projects.
27	III/I	CS506PC	Computer Networks & Web Technologies Lab	CO1: Implement data link layer farming methods.
				CO2: Analyze error detection and error correction codes.
				CO3: Implement and analyze routing and congestion issues in network design.
				CO4: Implement Encoding and Decoding techniques used in presentation layer.
				CO5: To be able to work with different network tools.
28	III/I	EN508HS	Advanced Communication Skills Lab	CO1: Speak effectively.
				CO2: Express and communicate fluently and appropriately in social professional contexts.
				CO3: Develop the comprehensive ability through English language enables the students in understanding and assimilating other engineering subjects.
				CO4: The awareness of English lab enriches their communication and soft skills contributing to their overall development and success.
				CO5: Draft various letters and reports for all official



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				purpose.
				CO6: Take part in social and professional communication.
29	III/I	*MC510	Intellectual Property Rights	CO1: Analyze different types of intellectual property.
				CO2: Express function of trademarks.
				CO3: Understand law of copy rights.
				CO4: Understand law of patents.
				CO5: Explain trade secrets.
				CO6: Understand the development of intellectual Prop.
30	III/II	CS601PC	Machine Learning	CO1: Understand perspectives and issues in machine learning and decision tree learning.
				CO2: Understand artificial neural network problem and evaluation hypotheses.
				CO3: Explain Baysean learning.
				CO4: Differentiate computational learning and instance based learning.
				CO5: Describe Genetic algorithms.
				CO6: Analyze different analytical learning approaches.
31	III/II	EC600OE	Fundamentals of IOT (Open Elective-I)	CO1: Understand the basics of Internet of Things.
				CO2: Differentiate between IoT and M2M.
				CO3: Analyze the introduction to Python Programming, Raspberry Pi.
				CO4: Implement IoT with Raspberry Pi.
				CO5: Describe SDN, Data Handling, Analytics.
				CO6: Explain Cloud Computing. Describe different case studies on Agriculture and Health Care.
32	III/II	CS602PC	Compiler Design	CO1: Describe structure of a compiler and basics of programming languages.
				CO2: Design Lexical analyzer generator by using regular expressions and finite automata.
				CO3: Design and implement LL and LR parsers and use YACC Tool for developing a parser.
				CO4: Explain the applications of SDT and different types of intermediate-code generation.
				CO5: Identify the storage organization used to support the run-time environment of a program and effectively generate machine codes.
				CO6: Apply the several algorithms for collecting and optimizing the information using data flow analysis.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

33	III/II	CS603PC	Design and Analysis of Algorithms	CO1: Analyze the Performance of an Algorithm.
				CO2: Solve the problems using divide and conquer approach.
				CO3: Develop constraint satisfied solutions using backtracking.
				CO4: Evaluate feasible solutions using Greedy method.
				CO5: Developing solutions to problems using dynamic programming.
				CO6: Define np hard and no complete problems.
34	III/II	CS615PE	Software Testing Methodologies (Professional Elective – III)	CO1: Explain about purpose of testing.
				CO2: Analyze transaction flow testing.
				CO3: Describe Paths, Path products and Regular expressions.
				CO4: Understand logic based testing.
				CO5: Explain about state graphs.
				CO6: Explain about Graph Matrices and Application like JMeter.
35	III/II	CS604PC	Machine Learning Lab	CO1: Understand complexity of Machine Learning algorithms and their limitations.
				CO2: Understand modern notions in data analysis-oriented computing.
				CO3: Applying common Machine Learning algorithms in practice and implementing their own.
				CO4: Perform experiments in Machine Learning using real-world data.
36	III/II	CS605PC	Compiler Design Lab	CO1: Develop client-server application using web technologies.
				CO2: Introduce server-side programming with Java servlets and JSP.
				CO3: Understand the various phases in the design of a compiler.
				CO4: Understand the design of top-down and bottom-up parsers.
				CO5: Understand syntax directed translation schemes.
				CO6: Introduce lex and yacc tools.
37	III/II	CS625PE	Software Testing Methodologies (Professional Elective – III Lab)	CO1: Explain about purpose of testing.
				CO2: Analyze transaction flow testing.
				CO3: Describe Paths, Path products and Regular expressions.
				CO4: Understand logic based testing.
				CO5: Explain about state graphs.
				CO6: Explain about Graph Matrices and Application.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

38	III/II	*MC609	Environmental Science	CO1: Get the information about ecosystem and also about its functions like Food chain, Ecological pyramids etc.,
				CO2: Get the knowledge about the different types of resources like land, water, mineral and energy and also about the effects of environment by the usage of these resources.
				CO3: Gain the knowledge about the ecosystem diversity, its values and also about the importance of the endemic species and different techniques involved in its conservation
				CO4: Gain the knowledge about the different types of pollutions and their control technologies, Waste water treatment, Bio medical waste management etc.,
				CO5: Get the complete information about EIA-Environmental Impact Assessment,
				CO6: Gain the knowledge about environmental policies and regulations.
39	IV/I	CS701PC	Cryptography & Network Security	CO1: Understand various attacks on the network and understanding the need for security.
				CO2: Apply various classical encryption techniques on messages and analyze various security services and mechanisms.
				CO3: Compare and contrast symmetric and asymmetric key cryptographic systems.
				CO4: Describe the cryptographic hash functions, message authentication codes and various key management and distribution techniques.
				CO5: Explain different protocols like SSL, TLS, HTTPS, SSH and various wireless network standards.
				CO6: Analyze how PGP and S/MIME is used to protect messages transmitted through E- Mail and explains IPSEC.
40	IV/I	CS702PC	Data Mining	CO1: Analyze various data base techniques for data warehouse and able to perform OLAP Operations.
				CO2: Ability to perform the Pre-processing of data and apply mining techniques on data.
				CO3: Understand frequent set and apply association Rule on Data Set.
				CO4: Evaluate the data mining ask like Classification, Regression Clustering on large data set.
				CO5: Ability to solve real world Problems in business and scientific information using data mining.
				CO6: Ability to understand clustering Concepts in the real world and apply Various clustering techniques.
41	IV/I	CS714PE	Cloud Computing (Professional Elective –IV)	CO1: Distinguish different computing paradigms.
				CO2: Explain the fundamentals of cloud computing.
				CO3: Understand the cloud computing architecture.
				CO4: Analyze process of migrating Application to cloud.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO5: Distinguish cloud service models.
				CO6: Understand cloud service providers.
42	IV/I	CS722PE	Real time systems (Professional Elective –V)	CO1: Explain real-time concepts such as preemptive multitasking, task priorities, priority inversions, mutual exclusion, context switching, and synchronization, interrupt latency and response time, and semaphores.
				CO2: Describe how a real-time operating system kernel is implemented.
				CO3: Explain how the real-time operating system implements time management.
				CO4: Discuss how tasks can communicate using semaphores, mailboxes, and queues.
				CO5: Implement a real-time system on an embedded processor.
				CO6: Work with real time operating systems like RT Linux, Vx Works, MicroC /OSII, Tiny Os.
43	IV/I	MT701OE	Principles of Entrepreneurship (Open Elective – II)	CO1: Understand basics of Entrepreneurship.
				CO2: Explain financing and managing the new ventures.
				CO3: Understand schemes and functions of different corporations.
				CO4: Explain industrial final support from different corporations.
				CO5: Describe production and marketing management.
				CO6: Discuss labour legislation, Provision of health.
44	IV/I	CS703PC	Cryptography & Network Security Lab	CO1: Understand various attacks on the network and understanding the need for security.
				CO2: Apply various classical encryption techniques on messages and analyze various security services and mechanisms.
				CO3: Compare and contrast symmetric and asymmetric key cryptographic systems.
				CO4: Describe the cryptographic hash functions, message authentication codes and various key management and distribution techniques.
				CO5: Explain different protocols like SSL, TLS, HTTPS, SSH and various wireless network standards.
				CO6: Analyze how PGP and S/MIME is used to protect messages transmitted through E- Mail and explains IPSEC.
45	IV/I	CS704PC	Industrial Oriented Mini Project	CO1: Apply fundamental concepts and methods of their engineering field.
				CO2: Use effectively oral, written and visual communication.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO3: Understand working with teams.
46	IV/I	CS705PC	Seminar	CO1: Understand advanced research methodologies in the field of computer science engineering.
				CO2: Demonstrate their understanding of discussions and spark further discussion.
				CO3: Identify understand and discuss current issues in the engineering field.
47	IV/I	CS706PC	Project Stage - I	CO1: Apply fundamental concepts and methods of their engineering field.
				CO2: Use effectively oral, written and visual communication.
				CO3: Understand working with teams.
48	IV/II	SM801MS	Organizational Behaviour	CO1: Define organization Behaviour.
				CO2: Explain cognitive processes.
				CO3: Differentiate communications in organizations.
				CO4: Understand types of conflict.
				CO5: Differentiate power-empowerment.
49	IV/II	CS812PE	Distributed Systems (Professional Elective – VI)	CO6: Understand goal setting, Quality of life.
				CO1: Characterize distributed systems.
				CO2: Describe OS layer and OS architecture.
				CO3: Explain peer to peer systems.
				CO4: Describe distributed mutual exclusion.
				CO5: Distinguish transactions and Concurrency.
50	IV/II	MT802OE	Total Quality Management (Open Elective – III)	CO6: Explain the concept of replication in distributed systems.
				CO1: Understand what is Total Quality Management
				CO2: Analyze the concept of customer focus and Satisfaction.
				CO3: Analyze TQM organization.
				CO4: Explain seven tools of TQM.
				CO5: Understand the cost of quality.
51	IV/II	CS802PC	Project Stage - II	CO6: Understand the ISO 9000 Standard.
				CO1: Learn to work as a team and to focus on getting a working project done within a stipulated period of time.
				CO2: Demonstrate the understanding of impact of engineering solutions on the society.
				CO3: Plan, analyze, design and implement the idea using different tools.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

COURSE OUTCOMES (COs)

Course Outcomes (COs) describe what students can able to do after completion of the course.

Program : B.Tech-Civil Engineering	Academic Year : 2021-22	Semester : I & II
--	--------------------------------	-----------------------------

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	II/I	CE301PC	Surveying and Geomatics	CO1: Define the principles of surveying and its phases and measure the directions by using chain and prismatic compass.
				CO2: Analyzing the levels of ground and computing the area and volumes.
				CO3: Explain the theodolite surveying and analyse the methods of traversing.
				CO4: Explain the principles of tachometry surveying and differentiate types of curves.
				CO5: Explain the total station and global positioning system.
				CO6: Define contouring and study its characteristics and its uses.
2	II/I	CE302PC	Engineering Geology	CO1: Write about importance of geology from civil engineering point of view.
				CO2: Distinguish weathered rocks from fresh rocks.
				CO3: Identify geological structures and processes for rock mass quality.
				CO4: Identify subsurface information and groundwater potential sites through geophysical Investigations.
				CO5: Apply geological principles for mitigation of natural hazards and select sites for dams and tunnels.
				CO6: Develop understanding on impact of geological features on civil engineering projects.
3	II/I	CE303PC	Strength of Materials - I	CO1: Describe the basic concept of stress and strain.
				CO2: Draw SFD and BMD for different beams subjected to different loads.
				CO3: Formulate flexural stresses, shear stresses and its distribution for various sections.
				CO4: Assess slope and deflection of beams subjected to loads.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO5: Apply the principal stresses and strains in structural members.</p> <p>CO6: Analyze of the principles and basics of strength of materials in the civil engineering structures.</p>
4	II/I	MA304BS	Probability and Statistics	<p>CO1: Describe the use of Baye’s theorem techniques when solving the problems.</p> <p>CO2: Discuss the properties of Discrete and continuous probability distributions.</p> <p>CO3: Solve the problems on Binomial and Geometric distributions and also normal distribution.</p> <p>CO4: Determine the testing of Hypothesis by using Type- I and Type- II errors.</p> <p>CO5: Identify the different types of hypothesis.</p> <p>CO6: Create the new problems on correlations and Regressions.</p>
5	II/I	CE305PC	Fluid Mechanics	<p>CO1: Explain the properties of the fluids.</p> <p>CO2: Describe and classification of the flows.</p> <p>CO3: Identify the discharge through the various discharge meters.</p> <p>CO4: Explain the How to move the fluid various flows and finding the discharge.</p> <p>CO5: Differentiate the fluid flow in layer by layer.</p>
6	II/I	CE306PC	Surveying Lab	<p>CO1: Prepare the surveying of an area by chain, and compass survey (closed traverse) & plotting.</p> <p>CO2: Solve and Calculation of areas, Drawing plans and contour maps using different measuring equipment at field level.</p> <p>CO3: Recognize Trigonometric leveling using theodolite.</p> <p>CO4: Apply the principle of surveying for civil Engineering Applications.</p> <p>CO5: Draw determination of height, remote elevation, and distance between inaccessible points using total station.</p>
7	II/I	CE307PC	Strength of Materials Lab	<p>CO1: Identify modulus of rigidity using spring test.</p> <p>CO2: Examine the properties of steel under different loads like tension, compression etc.</p> <p>CO3: Distinguish between simply supported beams and cantilever beams under shear stresses.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO4: Assess the deflection of beams under given loads.</p> <p>CO5: 5 Investigate the hardness of materials like stainless steel, aluminium, brass etc.</p> <p>CO6: Judge the resistance of mild steel under impact loads.</p>
8	II/I	CE308PC	Engineering Geology Lab	<p>CO1: Study of physical properties and identification of minerals referred under theory.</p> <p>CO2: Mega scopic and microscopic identification of minerals.</p> <p>CO3: Interpretation and drawing of sections for geological maps showing titled beds, faults, Uniformities, etc.</p> <p>CO4: Solve simple structural geology problems.</p>
9	II/I	*MC309	Constitution of India	<p>CO1: Understand meaning, features, characteristics of constitution law and constitutionalism.</p> <p>CO2: Describe fundamental rights, fundamental duties and its legal status.</p> <p>CO3: Describe The constitution powers and status of the President of India.</p> <p>CO4: Understand Emergency Provisions: National Emergency, President Rule, And Financial Emergency.</p> <p>CO5: Understand Fundamental Right to Equality, Fundamental Right to certain Freedom under Article 19.</p> <p>CO6: Describe the Scope of the Right to Life and Personal Liberty under Article 21.</p>
10	II/II	EE401ES	Basic Electrical and Electronics Engineering	<p>CO1: Understand the basic electrical circuit elements and different ac circuits.</p> <p>CO2: Understand the installation of different electrical equipments.</p> <p>CO3: Describe the working of different transformers.</p> <p>CO4: Understand the principles of DC motors.</p> <p>CO5: Analyze the different diodes, rectifiers and filters.</p> <p>CO6: Understand the principle, applications of BJT and FET.</p>
11	II/II	CE402ES	Basic Mechanical Engineering for Civil Engineers	<p>CO1: Understand the Mechanical equipment for the usage cams, riveted joint and discuss the materials.</p> <p>CO2: Analyze the working of power transmission elements like gears, belt drive, chain drive & material handling equipment.</p> <p>CO3: Illustrate the working features of IC engines, the basic principles of refrigeration and laws of heat transfer.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO4: Describe different types of welding process for joining & classify the process of casting.</p> <p>CO5: Differentiate understand working of lathe, drilling, milling & grinding machines.</p>
12	II/II	CE403PC	Building Materials, Construction and Planning	<p>CO1: Identification of suitable construction materials building stones properties and bricks wood structures.</p> <p>CO2: Apply the manufacture type of cements, cement hydration properties and field test and uses of admixtures minerals.</p> <p>CO3: Identify the components of building and differentiate various types of building materials depending on its function.</p> <p>CO4: Prepare of various construction related activities like stone masonry, plastering, painting, Form work.</p> <p>CO5: Classify the principles of building planning and building by laws.</p> <p>CO6: Illustrate the various precautionary measures pertaining to construction materials.</p>
13	II/II	CE404PC	Strength of Materials - II	<p>CO1: Illustrate the various precautionary measures pertaining to construction materials.</p> <p>CO2: Asses to understand the behaviour of columns and struts under axial loading.</p> <p>CO3: Evaluate the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading.</p> <p>CO4: Analyze strength and stability of structural members subjected to Direct, and Direct and Bending stresses.</p> <p>CO5: Understand and evaluate the shear center and unsymmetrical bending.</p> <p>CO6: Appraise strengths of different materials.</p>
14	II/II	CE405PC	Hydraulics and Hydraulic Machinery	<p>CO1: Explain the properties of the fluids.</p> <p>CO2: Describe and classification of the flows.</p> <p>CO3: Identify the discharge through the various discharge meters.</p> <p>CO4: Explain the How to move the fluid various flows and finding the discharge.</p> <p>CO5: Differentiate the fluid flow in layer by layer.</p> <p>CO6: Discuss the classification of fluid and its properties find out the discharge & amp various conditions flows in fluids.</p>
15	II/II	CE406PC	Structural Analysis - I	<p>CO1: Analyze perfect, imperfect and redundant frames.</p> <p>CO2: Compare different frames.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO3: Apply classical methods for one dimensional and two dimensional problems.</p> <p>CO4: Analyze indeterminate structures.</p> <p>CO5: Apply slope-deflection and moment distribution method for continuous beams with and without settlement of supports.</p> <p>CO6: Analyze structures for gravity loads, moving loads and lateral loads.</p>
16	II/II	CE407PC	Computer aided Civil Engineering Drawing	<p>CO1: Summarize the AutoCAD commands for drawing 2D & 3D building drawings required for different civil engineering applications.</p> <p>CO2: Plan and draw Civil Engineering Buildings as per aspect and orientation.</p> <p>CO3: Categorize drawings as per user requirements and preparation of technical report.</p> <p>CO4: Draw a plan of a Building and with dimensioning the plan.</p> <p>CO5: Define the tools like Draw tools, Modify tools which are used in AutoCAD.</p> <p>CO6: Develop sections and elevations for given Single storied buildings, multi storied buildings.</p>
17	II/II	CE409PC	Hydraulics and Hydraulic Machinery Lab	<p>CO1: Understand the properties of the fluids.</p> <p>CO2: Describe and classification of the flows.</p> <p>CO3: Identify the discharge through the various discharge meters.</p> <p>CO4: Understand the How to move the fluid various flows and finding the discharge.</p> <p>CO5: Differentiate the fluid flow in layer by layer.</p>
18	II/II	EE409ES	Basic Electrical and Electronics Engineering Lab	<p>CO1: Understand behavior of different electrical components.</p> <p>CO2: Formulate and solve AC,DC circuits.</p> <p>CO3: Realize the requirement of transformers.</p> <p>CO4: Explain the properties of electromagnetic circuit.</p> <p>CO5: Understand the principles of various electrical circuits.</p> <p>CO6: Understand working principles of various analogue electrical measuring instruments.</p>
19	II/II	*MC409	Gender Sensitization Lab	<p>CO1: Develop sensibility with regard to issues of gender in contemporary India.</p> <p>CO2: Provide a critical perspective on the socialization of men and women.</p> <p>CO3: Determine information about some key biological aspects of genders.</p> <p>CO4: Debate on the politics and economics of work.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO5: Reflect critically on gender violence.</p> <p>CO6: Expose more egalitarian interactions between men and women.</p>
20	III/I	CE501PC	Structural Analysis-II	<p>CO1: Analyze the two hinged arches.</p> <p>CO2: Solve statically indeterminate beams and portal frames using classical methods</p> <p>CO3: Draw the shear force and bending moment diagrams for indeterminate structures</p> <p>CO4: Formulate the stiffness matrix and analyze the beams by matrix methods.</p> <p>CO5: Solve the approximate and numerical methods of analysis for indeterminate structures</p> <p>CO6: Design the variation of S.F and B.M when a moving load passes on indeterminate structure.</p>
21	III/I	CE502PC	Geotechnical Engineering	<p>CO1: Distinguish the properties and classification of the Soils.</p> <p>CO2: Describe the Factors affecting permeability of the Soils</p> <p>CO3: Develop the Stress Distribution of the compaction effects on soil properties</p> <p>CO4: Develop the Stress Distribution of the Consolidation effects on soil properties.</p> <p>CO5: Classify the Shear Strength Of Soils Importance of parameters</p> <p>CO6: Describe the classification of soil and its properties find out the permeability various conditions flows in soil.</p>
22	III/I	CE503PC	Structural Engineering –I (RCC)	<p>CO1: Analyze of the Reinforced concrete beams using limit state design</p> <p>CO2: Design the Reinforced concrete structural slabs</p> <p>CO3: Design the Reinforced concrete structural elements</p> <p>CO4: Design the different types footings</p> <p>CO5: Design of the staircases</p> <p>CO6: Explain about the structures for serviceability</p>
23	III/I	CE504PC	Transportation Engineering	<p>CO1: Highway Development in India.</p> <p>CO2: Importance of Geometric Design.</p> <p>CO3: Introduction to traffic and Design of Traffic Signals.</p> <p>CO4: Explain the Intersection Design and Types of Intersections.</p> <p>CO5: Explain the Design of Pavements.</p> <p>CO6: Explain the highway engineering and design of pavements and to analysis the traffic signals.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

24	III/I	CE602PE	Concrete Technology (Professional Elective-I)	CO1. Define the properties of concrete material
				CO2: Describe the behaviour of concrete properties of fresh concrete
				CO3: Describe the behaviour of concrete properties of hardened concrete
				CO4: Recognize the Workability of freshly mix concrete
				CO5: Apprise the difference between Self Compacting Concrete and normal
				CO6: Examine the Non Destructive test's on concrete.
25	III/I	SM505MS	Engineering Economics and Accountancy	CO.1: The students will understand the concepts of economics, demand, supply and various methodology of economics and the methods and theories.
				CO.2: Understand the various macroeconomic concepts like national income, methods of estimation, inflation, deflation and new economic policy.
				CO.3: Understand the significance of capital budgeting, time value of money, methods of appraisal techniques, payback period, average rate of return, profitability index.
				CO.4: Understands the concepts of equity and debt financing, leverages and types of leverages.
				CO.5: To adopt the principles of accounting to record, classify and summarize various transactions in books of accounts for preparation of final accounts.
				CO.6: Understand the concept of cost and break-even analysis, application and limitations.
26	III/I	CE506PC	Highway Engineering and Concrete Technology Lab	CO.1 Define the properties of concrete material.
				CO.2 Describe the behaviour of concrete & properties of fresh concrete.
				CO.3 Describe the behaviour of concrete & properties of hardened concrete
				CO.4 Recognize the Workability of freshly mix concrete
				CO.5 Apprise the difference between Self Compacting Concrete and normal
				CO.6 Examine the Non Destructive test's on concrete
27	III/I	CE507PC	Geotechnical Engineering Lab	CO.1 calculate and analyze the stresses on soil and be able to draw the stress paths
				CO.2 evaluate the compressibility of soils
				CO.3 suggest suitable ground improvement techniques for expansive soils
				CO.4 execute various field tests and sampling techniques



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO.5 obtain and analyze the shear strength of soils
28	III/I	EN508HS	Advanced Communication Skills Lab	CO1: Speak effectively.
				CO2: Express and communicate fluently and appropriately in social professional contexts.
				CO3: Develop the comprehensive ability through English language enables the students in understanding and assimilating other engineering subjects.
				CO4: The awareness of English lab enriches their communication and soft skills contributing to their overall development and success.
				CO5: Draft various letters and reports for all official purpose.
				CO6: Take part in social and professional communication.
29	III/I	*MC509	Intellectual Property Rights	CO1: Analyze different types of intellectual property.
				CO2: Express function of trademarks.
				CO3: Understand law of copy rights.
				CO4: Understand law of patents.
				CO5: Explain trade secrets.
				CO6: Understand the development of intellectual property.
30	III/II	CE601PC	Hydrology & Water Resources Engineering	CO.1 Know types of water retaining structures for multiple purposes and its key parameters considered for planning and designing
				CO.2 Understand details in any Irrigation System and its requirements
				CO.3 Know types of a irrigation system components
				CO.4 Analyze of a irrigation system
				CO.5 Design of a irrigation system components
				CO.6 Design principles of Notch Fall and Sarada type Fall.
31	III/II	CE602PC	Environmental Engineering	CO.1 Assess characteristics of water and wastewater and their impacts
				CO.2 Estimate quantities of water and waste water and plan conveyance components
				CO.3 Design components of water and waste water treatment plants
				CO.4 CO.4 Examine conversant with issues of air pollution and control.
				CO.5 Explain about classification of air pollution
				CO.6 Discuss Meteorological parameters affecting air pollution.
32	III/II	CE603PC	Foundation Engineering	CO1: Identify a suitable foundation system for a structure.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO2: Evaluate the importance of raft foundation and principles of design for buildings and tower structures.</p> <p>CO3: Analyze and design pile foundations.</p> <p>CO4: Examine and discuss various machine foundations.</p> <p>CO5: Analyze and design Sheet piles and cofferdams.</p>
33	III/II	CE604PC	Structural Engineering –II	<p>CO1: Analyze of the built up members and Column base</p> <p>CO2: Analyze of the plate girders and Roof Trusses</p> <p>CO3: Define the beams and beam columns</p> <p>CO4: Design the tension and compression members</p> <p>CO5: Design of the bolt and weld connections</p> <p>CO6: Explain about the Plastic beams</p>
34	III/II	CE612PE	Prestressed Concrete (Professional Elective-II)	<p>CO1 : Explain different types of Pre-stressing materials and methods of pre-stressing</p> <p>CO2 :Write about different losses of pre-stres</p> <p>CO3 : Flexure & Shear analysis of pre-stressed concrete</p> <p>CO4 : Examining the Transmission of pre-stressing force</p> <p>CO5: Analysis of composite beams & Deflection concept</p>
35	III/II	CS601OE	Fundamentals of Management for Engineers (Open Elective –I)	<p>CO1:Understand what is management</p> <p>CO2:Analyze organization structure and HRM</p> <p>CO3:Explain operational management</p> <p>CO4: Write about quality management</p> <p>CO5: Examine quality management</p> <p>CO6:Explain about project management steps.</p>
36	III/II	CE605PC	Environmental Engineering Lab	<p>CO1: Define physical, chemical, biological characteristics of water and wastewater.</p> <p>CO2: Examine break-point chlorination.</p> <p>CO3: Assess optimum dosage of coagulant.</p> <p>CO4: Assess the quality of water and wastewater.</p> <p>CO5: Examine the use of Nephlo turbidity meter.</p> <p>CO6: Analyze the difference of Total Solids, Total Dissolved Solids and Settle able solids.</p>
37	III/II	CE606PC	Computer Aided Design Lab	<p>CO1: Model the geometry of real-world structure Represent the physical model of structural element/structure</p> <p>CO2: Analysis design of space frames subjected to DL & LL</p> <p>CO3: Interpret from the Post processing results</p> <p>CO4: Design the structural elements and a system as per IS Codes</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO5: Design the structural elements like RCC beam and RCC slab</p> <p>CO6: Detailing of Steel built up compression member</p>
38	III/II	*MC609	Environmental Science	<p>CO1: Get the information about ecosystem and also about its functions like Food chain, Ecological pyramids etc.,</p> <p>CO2: Get the knowledge about the different types of resources like land, water, mineral and energy and also about the effects of environment by the usage of these resources.</p> <p>CO3: Gain the knowledge about the ecosystem diversity, its values and also about the importance of the endemic species and different techniques involved in its conservation</p> <p>CO4: Gain the knowledge about the different types of pollutions and their control technologies, Waste water treatment, Bio medical waste management etc.,</p> <p>CO5: Get the complete information about EIA-Environmental Impact Assessment,</p> <p>CO6: Gain the knowledge about environmental policies and regulations.</p>
39	IV/I	CE701PC	Estimation, Costing and Project Management	<p>CO1: Understand the technical specifications for various works to be performed for a project and how they impact the cost of a structure</p> <p>CO2: Quantify the worth of a structure by evaluating quantities of constituents, derive their cost rates and build up the overall cost of the structure.</p> <p>CO3: Understand how competitive bidding works and how to submit a competitive bid proposal.</p> <p>CO4: An idea of how to optimize construction projects based on costs.</p> <p>CO5: An idea how construction projects are administered with respect to contract structures & issues.</p> <p>CO6: An ability to put forward ideas and understandings to others with effective communication processes</p>
40	IV/I	CE712PE	Ground Improvement Techniques (Professional Elective-III)	<p>CO1: Identify the type of problems in problematic soils and solve their problems using different ground improvement techniques.</p> <p>CO2: Design of reinforced earth retaining structures.</p> <p>CO3: Design drainage and dewatering systems for various civil engineering problems.</p> <p>CO4: Apply knowledge on ground improvement techniques such as reinforced earth, drainage and dewatering and grouting techniques on stabilization of expansive soils.</p> <p>CO5: Understand the need of ground improvement for stable engineered structures using various techniques.</p> <p>CO6: Understand the ground improvement techniques such as ground anchors, rock bolting and soil nailing.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

41	IV/I	CE721PE	Irrigation and Hydraulic Structures (Professional Elective –IV)	CO1: Know types of water retaining structures for multiple purposes and its key parameters considered for planning and designing.
				CO2: Explain different topics related to Gravity Dams.
				CO3: Analyze different topics related to Earth Dams.
				CO4: Understand details in any Irrigation System and its requirements.
				CO5: Know, Analyze and Design of a irrigation system components
42	IV/I	ME700OE	Basic Mechanical Engineering (Open Elective –II)	CO1: Understand basic concepts of Thermodynamics and Heat transfer.
				CO2: Examine different IC Engines and Air Condition.
				CO3: Analyze the concepts of power transmission.
				CO4: Understand the basic concepts of hydraulic & pneumatic power devices.
				CO5: Know the importance of Kinematics of mechanics.
				CO6: Demonstrate Rotodynamic and Vibratory Machines.
43	IV/I	SM702MS	Professional Practice law & Ethics	CO1: Define Professional Ethics.
				CO2: Understand law of contract and essential elements of valid contract.
				CO3: Describe Arbitration, Conciliation and ADR system.
				CO4: Explain the importance of Dispute Resolution Boards like Lok Adalats.
				CO5: Differentiate construction related laws.
				CO6: Describe law related to Intellectual Property.
44	IV/I	CE703PC	Industrial Oriented Mini Project	CO1: Assess the quality of water and wastewater.
				CO2: Examine the use of Nephlo turbidity meter.
				CO3: Analyze the difference of Total Solids, Total Dissolved Solids and Settle able solids.
45	IV/I	CE704PC	Seminar	CO1: Adapt a factual approach to decision making
				CO2: Effectively communicate by making an oral presentation before an evaluation committee.
				CO3: Analyze new technologies in all engineering fields.
46	IV/I	CE705PC	Project Stage - I	CO1: Learn to work as a team and to focus on getting a working project done within a stipulated period of time.
				CO2: demonstrate the understanding of impact of engineering solutions on the society.
				CO3: Plan, analyze, design and implement using different tools.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

47	IV/II	CE813PE	Air Pollution (Professional Elective –V)	CO1: Identify sampling and analysis techniques for air quality assessment
				CO2: Describe the plume behavior for atmospheric stability conditions
				CO3: Apply plume dispersion modelling and assess the concentrations
				CO4: Design air pollution controlling devices
				CO5: Describe Automobile and Indoor Pollution
48	IV/II	CE821PE	Airport, Railways, And Waterways (Professional Elective –VI)	CO1: Design of runways and taxiways
				CO2: Design the infrastructure for large and small airports
				CO3: Design various crossings and signals in Railway Projects.
				CO4: Plan the harbors and ports projects including the infrastructure required for new ports and harbors.
				CO5: Design railway tracks
				CO6: Analyze types of water transportation.
49	IV/II	MT802OE	Total Quality Management (Open Elective –III)	CO1: Understand what is Total Quality Management
				CO2: Analyze the concept of customer focus and Satisfaction.
				CO3: Analyze TQM organization.
				CO4: Explain seven tools of TQM.
				CO5: Understand the cost of quality.
				CO6: Understand the ISO 9000 Standard.
50	IV/II	CE801PC	Project Stage-II	CO1: Learn to work as a team and to focus on getting a working project done within a stipulated period of time.
				CO2: Demonstrate the understanding of impact of engineering solutions on the society.
				CO3: Plan, analyze, design and implement the idea using different tools.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

COURSE OUTCOMES (COs)

Course Outcomes (COs) describe what students can able to do after completion of the course.

Program : B.Tech-Mechanical Engineering	Academic Year : 2021-22	Semester : I & II
---	--------------------------------	-----------------------------

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	III/I	ME501PC	Dynamics of Machinery	CO1: Assess the effect of Gyroscopic couple in a dynamic body such as aero plane, 4-wheeler etc.
				CO2: Perform static and dynamic analysis to attain equilibrium in mechanisms.
				CO3: Analyze friction clutches, brakes dynamometer and Governors.
				CO4: Determine balancing mass for rotating and reciprocating mass systems.
				CO5: Perform analysis of the response of one degree freedom system with free and forced vibrations.
2	III/I	ME502PC	Design of Machine Members-I	CO1: Apply fundamental design practices with regard to material selection, material properties, manufacturing considerations and standards and codes.
				CO2: Apply stress analysis theory, fatigue theory and appropriate criteria of failure to the design of machine elements.
				CO3: Design and analyze the temporary joints (bolted joints) and permanent joints (riveted and welded joints) under various load conditions.
				CO4: Design solid and hollow shafts under various load conditions.
				CO5: Analyze compression, tension and torsion springs under various load conditions.
3	III/I	ME503PC	Metrology & Machine Tools	CO1: Differentiate Understand working of lathe, shaper, planner, drilling, milling and grinding machines.
				CO2: Differentiate Comprehend speed and feed mechanisms of machine tools.
				CO3: Estimate machining times for machining operations on machine tools.
				CO4: Identify techniques to minimize the errors in measurement.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO5: Identify methods and devices for measurement of length, angle, and gear & thread parameters, surface roughness and geometric features of parts.</p> <p>CO6: Handle the various measuring instruments in quality assurance department of industries.</p>
4	III/I	SM504MS	Business Economics & Financial Analysis	<p>CO1: Understand the various forms of Business and impact of economics.</p> <p>CO2: Analysis the demand, supply, production, cost.</p> <p>CO3: Analyze production, Types of production functions.</p> <p>CO4: Understand the market structure and pricing types.</p> <p>CO5: Describe the accounting concepts.</p> <p>CO6: Understand the ratio analysis.</p>
5	III/I	ME505PC	Thermal Engineering- II	<p>CO1: Develop state – space diagrams based on the schematic diagrams of process flow of steam and gas turbine plants.</p> <p>CO2 : Apply the laws of Thermodynamics to analyze thermodynamic cycles.</p> <p>CO3: Differentiate between vapour power cycles and gas power cycles.</p> <p>CO4: Infer from property charts and tables and to apply the data for the evaluation of performance parameters of the steam and gas turbine plants.</p> <p>CO5: Understand the functionality of major components of steam and gas turbine plants and to do the analysis of these components.</p>
6	III/I	ME506PC	Operations Research	<p>CO1: Understand operations research models.</p> <p>CO2: Understand the problem.</p> <p>CO3: Describe sequencing.</p> <p>CO4: Explain about replacement.</p> <p>CO5: Differentiate Theory of games and Inventory.</p> <p>CO6: Describe waiting lines and dynamic programming.</p>
7	III/I	ME507PC	Thermal Engineering Lab	<p>CO1: Mention working principles of different engines.</p> <p>CO2: Evaluate the performance of IC engines and compressors under the given operating conditions.</p> <p>CO3: Test the power in the engine cylinder.</p> <p>CO4: Find the efficiencies of different engines.</p> <p>CO5: Test the frictional power of the engine.</p> <p>CO6: Draw timing diagrams for SI/CI engines.</p>
8	III/I	ME508PC	Metrology & Machine Tools Lab	<p>CO1: Understand step turning, Taper turning on lathe machine.</p> <p>CO2: Measure cutting forces on lathe.</p> <p>CO3: Explain the measurement of lengths, heights by</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				venire callipers.
				CO4: Understand the thread measurement by 2-wire , 3-wire methods.
				CO5: Describe the measurement of gear cutting on milling machine.
				CO6: Understand the use of mechanical comparator.
9	III/I	ME509PC	Kinematics & Dynamics Lab	CO1: Understand types of motion.
				CO2: Analyze forces.
				CO3: Analyze torques of components in linkages.
				CO4: Differentiate static and dynamic balance.
				CO5: Understand forward and inverse kinematics of open loop mechanisms.
10	III/I	*MC510	Intellectual Property Rights	CO1: Analyze different types of intellectual property.
				CO2: Express function of trademarks.
				CO3: Understand law of copy rights.
				CO4: Understand law of patents.
				CO5: Explain trade secrets.
11	III/II	ME601PC	Design of Machine Members-II	CO1: Gain the Knowledge on journal bearing design using different empirical relations.
				CO2: Select and design a rolling contact bearing for different types of loads and estimate the life of rolling contact bearings.
				CO3: Design the various internal combustion engine components like connecting rod, piston.
				CO4: Design the helical coil springs for different applications under fatigue loading condition.
				CO5: Compare the belts and rope ways based on their power transmission and Application.
				CO6: Knowledge on the strength of gears and various places used different gears depend upon various applications.
12	III/II	ME602PC	Heat Transfer	CO1: Explain the basic modes and mechanisms of heat transfer.
				CO2: Analyze one dimensional steady state and unsteady state conduction heat transfer.
				CO3: Solve convective heat transfer problems of natural and forced convection heat transfer.
				CO4: Design the different heat exchanger for various industrial applications like Chemical industry, food processing and refrigeration plants.
				CO5: Compare the boiling, Condensation and radiation heat transfer.
				CO6: Apply the knowledge of heat transfer in aerospace industries.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

13	III/II	ME603PC	CAD & CAM	CO1: Development Of Part Drawings For Various Components In The Form Of Orthographic And Isometric. Representation Of Dimensioning And Tolerances.
				CO2: Generation Of Various 3D Models Through Protrusion, Revolve, Sweep Creation Of Various Features Study Of Boolean Based Modeling And Assembly Modeling. Study Of Various Standard Translators. Design Of Simple Components, Differentiate Surfaces And Curves.
				CO3: Apply G- Codes and M-Codes for various applications.
				CO4: Able To Study Of Various Post Processors Used In NC Machines. Development Of NC Code For Free Form And Sculptured Surfaces Using CAM Software.
				CO5: Able To Study Of Group Technology And Machining Operations Flexible Manufacturing.
				CO6: Able To Study Of Computer Integrated Technology And Quality Of Control.
14	III/II	ME613PE	Production Planning & Control (Professional Elective – I)	CO1: Understand production systems and their characteristics.
				CO2: Evaluate MRP and JIT systems against the traditional inventory control systems.
				CO3: Understand basics of variability and its role in the performance of a production system.
				CO4: Analyze aggregate planning strategies.
				CO5: Apply forecasting and scheduling techniques to production systems.
				CO6: Understand theory of constraints for effective management of production systems.
15	III/II	CE600OE	Disaster Preparedness & Planning Management (Open Elective – I)	CO1: Understand the application of Disaster Concepts to Management
				CO2: Analyzing Relationship between Development and Disasters.
				CO3: Ability to understand Categories of Disasters
				CO4: Realization of the responsibilities to society.
				CO5: Understand the disaster impacts.
				CO6: Analyze disaster risk reduction.
16	III/II	ME604PC	Finite Element Methods	CO1: Apply finite element method to solve problems in solid mechanics.
				CO2: Formulate and solve the problems in one dimensional structures including trusses , beams and frames.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO3: Formulate FE characteristic equations for 2D elements and analyze plain stress , plain strain , axi symmetric and plate bending problems.</p> <p>CO4: Understand the basics of finite element analysis.</p> <p>CO5: Understand the basics of dynamic analysis.</p>
17	III/II	ME605PC	Heat Transfer Lab	<p>CO1: Perform steady state conduction experiments to estimate thermal conductivity of different materials.</p> <p>CO2: Perform transient heat conduction experiment.</p> <p>CO3: Estimate heat transfer coefficients in forced convection, free convection, condensation and correlate with theoretical values.</p> <p>CO4: Obtain variation of temperature along the length of the pin fin under forced and free convection.</p> <p>CO5: Perform radiation experiments: Determine surface emissivity of a test plate and Stefan-Boltzmann's constant and compare with theoretical value.</p> <p>CO6: Study of heat pipe and its demonstration.</p>
18	III/II	ME606PC	CAD & CAM Lab	<p>CO1 : Find out the different between CAD and CAM</p> <p>CO2: Learn the modified and zoom commands under the given design conditions.</p> <p>CO3: Design different components of automobile.</p> <p>CO4: Test the part program in the CNC machine.</p> <p>CO5: Observe the group technology.</p> <p>CO6: Test the quality of SI /CI engines parts.</p>
19	III/II	EN608HS	Advanced Communication Skills lab	<p>CO1: Speak effectively.</p> <p>CO2: Express and communicate fluently and appropriately in social professional contexts.</p> <p>CO3: Develop the comprehensive ability through English language enables the students in understanding and assimilating other engineering subjects.</p> <p>CO4: The awareness of English lab enriches their communication and soft skills contributing to their overall development and success.</p> <p>CO5: Draft various letters and reports for all official purpose.</p> <p>CO6: Take part in social and professional communication.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

20	III/II	*MC609	Environmental Science	<p>CO1: Get the information about ecosystem and also about its functions like Food chain, Ecological pyramids etc.,</p>
				<p>CO2: Get the knowledge about the different types of resources like land, water, mineral and energy and also about the effects of environment by the usage of these resources.</p>
				<p>CO3: Gain the knowledge about the ecosystem diversity, its values and also about the importance of the endemic species and different techniques involved in its conservation</p>
				<p>CO4: Gain the knowledge about the different types of pollutions and their control technologies, Waste water treatment, Bio medical waste management etc.,</p>
				<p>CO5: Get the complete information about EIA-Environmental Impact Assessment,</p>
				<p>CO6: Gain the knowledge about environmental policies and regulations.</p>
21	IV/I	ME701PC	Refrigeration & Air Conditioning	<p>CO1: Differentiate between different types of refrigeration systems with respect to application as well as conventional and unconventional refrigeration systems.</p>
				<p>CO2: Thermodynamically analyse refrigeration and air conditioning systems and evaluate performance parameters.</p>
				<p>CO3: Apply the principles of Psychometrics to design the air conditioning loads for the industrial applications.</p>
				<p>CO4: Understand the concept of Vapour compression refrigeration.</p>
				<p>CO5: Analyze Vapour compression refrigeration.</p>
				<p>CO6: Understand Air Conditioning System.</p>
22	IV/I	ME711PE	Additive Manufacturing (Professional Elective – II)	<p>CO1: Describe various CAD issues for 3D printing and rapid prototyping and related operations for STL model manipulation.</p>
				<p>CO2: Formulate and solve typical problems on reverse engineering for surface reconstruction from physical prototype models through digitizing and spline-based surface fitting.</p>
				<p>CO3: Formulate and solve typical problems on reverse engineering for surface reconstruction from digitized mesh models through topological modelling and subdivision surface fitting.</p>
				<p>CO4: Explain and summarize the principles and key characteristics of additive manufacturing technologies and commonly used 3D printing and additive manufacturing systems.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO5: Explain and summarize typical rapid tooling processes for quick batch production of plastic and metal parts.
23	IV/I	ME721PE	Power Plant Engineering (Professional Elective – III)	CO1: Understand the concept of Rankine cycle.
				CO2: Understand working of boilers including water tube, fire tube and high pressure boilers and determine efficiencies.
				CO3: Analyze the flow of steam through nozzles
				CO4: Evaluate the performance of condensers and steam turbines
				CO5: Evaluate the performance of gas turbines
24	IV/I	ME732PE	Turbo Machinery (Professional Elective – IV)	CO1: Design different parameters for turbo machines.
				CO2: Calculate different parameters for turbo machines.
				CO3: Prerequisite to CFD and Industrial fluid power courses.
				CO4: Formulate design criteria.
				CO5: Understand thermodynamics and kinematics behind turbo machines.
25	IV/I	CE700OE	Remote Sensing & GIS (Open Elective – II)	CO1: Describe different concepts and terms used in Remote Sensing and its data.
				CO2: Understand the Data conversion and Process in different coordinate systems of GIS interface.
				CO3: Evaluate the accuracy of Data and implementing a GIS.
				CO4: Understand the applicability of RS and GIS for various applications.
				CO5: Understand the implementation of GIS.
26	IV/I	ME702PC	Industrial Oriented Mini Project	CO1: Able to collaborate with others as they work on intellectual projects.
				CO2: Plan, analyze, design and implement using different tools.
				CO3: Learn to work as a team and to focus on getting a working project done within a stipulated period of time.
27	IV/I	ME703PC	Seminar	CO1: Learn public speaking skills by presentations.
				CO2: Understand new technologies in all engineering fields.
				CO3: Improve problem solving skills.
28	IV/I	ME704PC	Project Stage - I	CO1: Apply fundamental concepts of areas of study to solve a problem.
				CO2: Use effectively oral, written and visual communication.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO3: Work with teams to meet the requirement and to reach the targets.
29	IV/II	MM813PE	Composite Materials (Professional Elective – V)	CO1: Understand the Definition and classification of Composite materials.
				CO2: Analyze types of reinforcements and their properties.
				CO3: Describe the fabrication of Polymeric Matrix Composites.
				CO4: Explain fabrication of Metal matrix composites.
				CO5: Understand properties and Applications of Metal matrix composites.
				CO6: Describe Micromechanics of Composites
30	IV/II	ME821PE	Industrial Management (Professional Elective – VI)	CO1: Apply principles of management
				CO2: Design the organization structure
				CO3: Design plant layout and value analysis
				CO4: Carry out work study to find the best method for doing the work and establish standard time for a given method
				CO5: Apply various quality control techniques and sampling plans
				CO6: Do job evaluation and network analysis
31	IV/II	MT802OE	Total Quality Management (Open Elective – III)	CO1: Understand what is Total Quality Management
				CO2: Analyze the concept of customer focus and Satisfaction.
				CO3: Analyze TQM organization.
				CO4: Explain seven tools of TQM.
				CO5: Understand the cost of quality.
				CO6: Understand the ISO 9000 Standard.
32	IV/II	ME801PC	Project Stage - II	CO1: Apply fundamental concepts of areas of study to solve a problem.
				CO2: Use effectively oral, written and visual communication.
				CO3: Work with teams to meet the requirement and to reach the targets.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

COURSE OUTCOMES (COs)

Course Outcomes (COs) describe what students can able to do after completion of the course.

Program : I B.Tech	Academic Year : 2021-22	Semester : I & II
------------------------------	--------------------------------	-----------------------------

S.No	Year/ Sem	Course Code	Course Name	Course Outcomes (After completion of the course student can able to :)
1	I/I	MA101BS	Mathematics - I	CO1: Analyze the solution of the system of linear equations in matrix representation.
				CO2: Find the diagonalization of the matrix.
				CO3: Compare the convergence between two tests for the given sequence.
				CO4: Evaluate Improper integrals using Beta and Gamma functions.
				CO5: Explain the concept of total derivative.
				CO6: Find the Maxima and Minima of functions of two variables and three variables.
2	I/I	CH102BS	Chemistry	CO1: Analyze the type of crystal field splitting in complexes.
				CO2: Develop the water free from hardness using water technology.
				CO3: Solve the problems of E.M.F, Electrode Potential.
				CO4: Recognize which part of alloy acts as Anode.
				CO5: Predict the Configuration of the given compound.
				CO6: Apply the spectral data to find the structure of a compound.
3	I/I	EE103ES	Basic Electrical Engineering	CO1: Known's the knowledge about basic components of electrical and reduction method in network analysis in DC.
				CO2: Gains the knowledge about AC quantities.
				CO3: Gains the knowledge about the energy transfer.
				CO4: Gains the knowledge about use of 3-ph transformers.
				CO5: Analysing the energy conversion systems in electrical.
				CO6: Gains knowledge about basic electrical installation.
4	I/I	ME105ES	Engineering Workshop	CO1: Study and practice on hand operated tools and their uses.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				<p>CO2: Design and model the prototypes by using carpentry and tin Smithy tools.</p> <p>CO3: Join the metals by using welding and fitting trade</p> <p>CO4: Produce casting using foundry.</p> <p>CO5: Perform various basic house wiring functions.</p> <p>CO6: Bend and design the model using blacksmith trade.</p>
5	I/I	EN105HS	English	<p>CO1: Use English language effectively in spoken and written forms.</p> <p>CO2: Inculcate reading habits & gain effective reading skills and vocabulary.</p> <p>CO3: Develop listening skills.</p> <p>CO4: Comprehend the given text and respond appropriately.</p> <p>CO5: Communicate confidently in various contexts and different cultures.</p> <p>CO6: Acquire basic proficiency in English including L.S.R.W skills.</p>
6	I/I	PH102BS	Engineering Physics	<p>CO1: Explain the fundamental concepts on Quantum behaviour of matter.</p> <p>CO2: Explain the working principle and structure of various semiconductors.</p> <p>CO3: Describe the characteristics of semiconductor photo detectors.</p> <p>CO4: Distinguish the principle of lasers.</p> <p>CO5: Apply the fibre optics principles in various communications.</p> <p>CO6: Analyze the Characteristics of dielectric and magnetic material.</p>
7	I/I	EN107HS	English Language and Communication Skills Lab	<p>CO1: Better understanding of nuances of English language through audio-visual experience and group activities.</p> <p>CO2: Neutralization of accent for intelligibility.</p> <p>CO3: Speaking skills with clarity and confidence which in turn enhance their employability skills.</p>
8	I/I	EE108ES	Basic Electrical Engineering Lab	<p>CO1: Known's the knowledge about basic components of electrical and reduction method in network analysis in DC.</p> <p>CO2: Gains the knowledge about AC quantities.</p> <p>CO3: Gains the knowledge about the energy transfer.</p> <p>CO4: Gains the knowledge about use of 3-ph transformers.</p> <p>CO5: Analysing the energy conversion systems in electrical.</p>



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO6: Gains knowledge about basic electrical installation.
9	I/I	PH105BS	Engineering Physics Lab	CO1: Classify the Newton's laws both in Cartesian, cylindrical and spherical coordinates.
				CO2: Distinguish the different types of mechanical and electrical harmonic oscillators.
				CO3: Recognize the fundamentals of transverse waves of strings in one dimension.
				CO4: Recognize the fundamentals of longitudinal waves of strings in one dimension.
				CO5: Demonstrate competency and understanding of the concepts found in Wave Optics on a broad base of knowledge in physics.
				CO6: Define the Basic principle of LASERS and their application as light propagation in fiber optics and optical fibers Properties.
10	I/II	AP202BS	Applied Physics	CO1: Explain the fundamental concepts on Quantum behavior of matter.
				CO2: Explain the working principle and structure of various semiconductors.
				CO3: Describe the characteristics of semiconductor photo detectors.
				CO4: Distinguish the principle of lasers.
				CO5: Apply the fiber optics principles in various communications.
				CO6: Analyze the Characteristics of dielectric and magnetic material.
11	I/II	CS203ES	Programming for Problem Solving	CO1: Recognize various types of operators, data types and understand the definition of algorithm and flowchart.
				CO2: Apply various Branching/Looping statements, structure of c program to solve the given problem.
				CO3: Classify homogeneous derived data types and use them to solve the problems.
				CO4: Distinguish Text files and Binary Files and define the pre-processor directives, write simple c program using File handling functions.
				CO5: Illustrate how structured programming, Recursion works and write programs using recursion to solve problems and memory allocation.
				CO6: Apply Algorithms for searching and sorting techniques.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

12	I/II	ME204ES	Engineering Graphics	CO1: Broad idea in engineering drawing and conventions. Application of geometric and curves drawing in tool design such as helical curve in the design of drill bits.
				CO2: Understanding orthographic projections in sense projections of points, lines, Planes.
				CO3: Developing a clear idea on projections of solids and auxiliary views and sectional views.
				CO4: Acquiring practical knowledge by means of development of surface drawing, and intersection of solids.
				CO5: Thorough knowledge in Isometric views and conversion of isometric views into orthographic views and vice versa also acquiring prerequisite knowledge in CAD commands and package.
13	I/II	ME203ES	Engineering Mechanics	CO1: Determine resultant of forces acting on a body and analyse equilibrium of a body subjected to a system of forces.
				CO2: Describe static equilibrium of particles and rigid bodies both in two dimensions and also in three dimensions.
				CO3: Solve problem of bodies subjected to friction.
				CO4: Find the location of centroid and calculate moment of inertia of given section.
				CO5: Understand kinetics and kinematics of a body undergoing rectilinear, curvilinear, rotatory motion and rigid body motion.
				CO6: Solve the problems using work energy equations for translations, fixed axis of rotation and plane motion.
14	I/II	CS206ES	Programming for Problem Solving Lab	CO1: Solve the Problems by using Operators and type casting.
				CO2: Write the programs based on Branching and Looping statements.
				CO3: Illustrate the Problems by using the recursion and Functions.
				CO4: Analyze the programs based on Derived Data type.
				CO5: Develop the programs using Files.
				CO6: Solve the Problems by using the Searching and Sorting Technique.
15	I/II	*MC209ES	Environmental Science	CO1: Understand ecological principles.
				CO2: Evaluate environmental regulations.
				CO3: Classify the natural resources.
				CO4: Differentiate Biodiversity and Biotic resources.



SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

An UGC Autonomous Institution , Accredited by NAAC with A+ Grade

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, Affiliated to JNTU Hyderabad

Sheriguda(Vill), Ibrahimpatnam(Mdl), R. R. Dist – 501510

www.siiet.ac.in

				CO5: Describe environmental pollution control techniques.
				CO6: Gain knowledge on environmental protection Act.