

Department of Computer Science and Engineering

VISION

Creating eminent and ethical leaders in the domain of Computational Sciences through quality professional education with a focus on holistic learning and excellence.

MISSION

- To emerge as a leader in education in the region by encouraging teaching, learning, industry and societal connect.
- To instill Entrepreneurial Orientation and research motivation among the students of the department.
- To prepare students for careers in industry, academia and the Government.
- To create technically competent and ethically conscious graduates in the field of Computer Science and Engineering by encouraging holistic learning and excellence.

PROGRAMME SPECIFIC OUTCOMES

- An ability to understand concepts involved in modeling and design of computer science applications in a way that demonstrates comprehension of the fundamentals and trade-offs involved in design choices.
- An ability to apply design, development, maintenance or evaluation of software engineering principles in the construction of computer and software systems of varying complexity and quality.
- An ability to apply knowledge of operating systems, programming languages, data management, or networking principles to computational assignments.
- An ability to apply knowledge of data structures and algorithms appropriate to computational problems.

PROGRAMME 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, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

Sunny

True Copy Attested

Dr. SUNNY JOSEPH KALAYATHANKAL
M.Tech, MCA, M.Sc. M.Phil, B.Ed
Ph.D (Computer Science), Ph.D (Maths)
PRINCIPAL
Jyothi Engineering College
Cheruthuruthy P.O.- 679 531

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 and safety, and the 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 modeling 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, and 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.

PROGRAMME EDUCATIONAL OBJECTIVES


- The graduates shall be able to communicate effectively and work in multidisciplinary teams with team spirit demonstrating value driven and ethical leadership.

True Copy Attested
Sunny
Dr. SUNNY JOSEPH KALAYATHANKAL
M.Tech, MCA, M.Sc. M.Phil B.Ed
Ph.D (Computer Science), Ph.D (Maths)
PRINCIPAL
Jyothi Engineering College
Cheruthuruthy P.O.- 679 531

- The graduates shall be able to establish themselves as practicing professionals, researchers or Entrepreneurs in computer science or allied areas and shall also be able to pursue higher education in reputed institutes.
- The graduates shall have sound knowledge of Mathematics, Science, Engineering and Management to be able to offer practical software and hardware solutions for the problems of industry and society at large.

List of courses that integrates cross cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum

| Sl. No | Subject | Subject Code | Curriculum | Deployment Strategy and Tool | Crosscutting Issues Integrated |
|--------|---------------------------|--------------------|--|-------------------------------|--------------------------------------|
| 1 | HS200 | LIFE SKILLS | To develop communication competence in prospective engineers. To enable them to convey thoughts and ideas with clarity and focus. To develop report writing skills. To equip them to face interview & Group Discussion. To inculcate critical thinking process. To prepare them on problem solving skills. To provide symbolic, verbal, and graphical interpretations of statements in a problem description. To understand team dynamics & effectiveness. To create an awareness on Engineering Ethics and Human Values. To instill Moral and Social Values, Loyalty and also to learn to appreciate the rights of others. To learn leadership qualities and practice them. | Chalk and talk method and PPT | Human Values and Professional Ethics |
| 2 | Business Economics | HS200 | To familiarize the prospective engineers with elementary Principles of Economics and Business Economics. To acquaint the students with tools and techniques that are useful in their profession in Business Decision Making which will enhance their employability. | Chalk and talk method and PPT | Human Values and Professional Ethics |

True Copy Attested

Dr. SUNNY JOSEPH KALAYATHANKAL
 M.Tech, MCA, M.Sc. M.Phil, B Ed
 Ph.D (Computer Science), Ph.D (Maths)
 PRINCIPAL
 Jyothi Engineering College
 Cheruthuruthy P.O.- 679 531

| | | | | | |
|---|--|--------------|--|-------------------------------|---|
| | | | <p>To apply business analysis to the firm under different market conditions.</p> <p>To apply economic models to examine current economic scenario and evaluate policy options for addressing economic issues.</p> <p>To gain understanding of some Macroeconomic concepts to improve their ability to understand the business climate. To prepare and analyse various business tools like balance sheet, cost benefit analysis and rate of returns at an elementary level.</p> | | |
| 3 | Design Project | CS341 | <p>To understand the engineering aspects of design with reference to simple products</p> <ul style="list-style-type: none"> <input type="checkbox"/> To foster innovation in design of products, processes or systems <input type="checkbox"/> To develop design that add value to products and solve technical problems | Chalk and talk method and PPT | Environment and Sustainability, Human Values and Professional Ethics |
| 4 | SOFTWARE ENGINEERING AND PROJECT MANAGEMENT | CS308 | <ol style="list-style-type: none"> 1. To introduce the fundamental concepts of software engineering. 2. To build an understanding on various phases of software development. 3. To introduce various software process models | Chalk and talk method and PPT | Environment and Sustainability, Human Values and Professional Ethics |
| 5 | PRINCIPLES OF MANAGEMENT | HS300 | <p>To develop ability to critically analyse and evaluate a variety of management practices in the contemporary context;</p> <ul style="list-style-type: none"> <input type="checkbox"/> To understand and apply a variety of management and organisational theories in practice; <input type="checkbox"/> To be able to mirror existing practices or to generate their own innovative management competencies, required for today's complex and global workplace; <input type="checkbox"/> To be able to critically reflect on ethical theories and social responsibility ideologies to | Chalk and talk method and PPT | Environment and Sustainability, Human Values and Professional Ethics |

True Copy Attested

Dr. SUNNY JOSEPH KALAYATHANKAL
M.Tech. (CA N), M.Phil. B.L.O.
Ph.D (Computer Science), Ph.D (Maths)
PRINCIPAL
Jyothi Engineering College
P.O. - 679 511

| | | | | | |
|---|--|--------------|---|-------------------------------|---|
| 6 | Seminar & Project Preliminary | CS451 | <p>create sustainable organisations.</p> <p>To develop skills in doing literature survey, technical presentation and report preparation</p> <p>To enable project identification and execution of preliminary works on final semester project</p> | Chalk and talk method and PPT | Environment and Sustainability, Human Values and Professional Ethics |
| 7 | Environmental Impact Assessment | CE482 | <p><input type="checkbox"/> To study the various types of environmental pollution</p> <p><input type="checkbox"/> To study the impact of various types of pollutants and their assessment techniques</p> | Chalk and talk method and PPT | Environment and Sustainability, Human Values and Professional Ethics |
| 8 | Project | CS492 | <p>To apply engineering knowledge in practical problem solving <input type="checkbox"/> To foster innovation in design of products, processes or systems <input type="checkbox"/></p> <p>To develop creative thinking in finding viable solutions to engineering problems</p> | Chalk and talk method and PPT | Environment and Sustainability, Human Values and Professional Ethics |

True Copy Attached

SUNNY

Dr. SUNNY JOSEPH KALAYATHANKAL
M.Tech (MCA), M.Sc., M.Phil., B.Ed.
Ph.D (Computer Science), Ph.D (Maths)
PRINCIPAL
J. Engineering College
Cheruthuruthi, P.O. 674 014