# Sri Venkateswara College of Engineering & Technology (Autonomous)

SVCET Incubator

# ProSolvo

PROBLEM IDENTIFICATION CHALLENGE

The Problem Identification Challenge is an initiative aimed at fostering innovation and problem-solving skills among students of Sri Venkateswara College of Engineering & Technology (Autonomous), Chittoor. This contest provides a platform for students to identify real-world problems and propose innovative solutions, thereby contributing to societal and industrial advancements.

## Contest Guidelines

### 1. Eligibility:

The contest is open to all undergraduate and postgraduate students of Sri Venkateswara College of Engineering & Technology (Autonomous), Chittoor.

Students from all branches of engineering, technology, and management are eligible to participate.

### 2. Registration:

Registration will be conducted online through the college's official website.

Each participant or team must register by providing necessary details, including name(s), department, contact information, and project title.

Registration will open on March 5th , 2024 and close on March 20th, 2024

## 3. Problem Identification:

Participants must identify a specific problem statement related to their field of study or interest.

Problem statements should address real-world challenges faced by society, industry, or the environment.

Each problem statement must be accompanied by a brief description highlighting its significance and potential impact.

## 4. Problem Identification Areas

### Civil Engineering:

Sustainable Infrastructure Development: Designing eco-friendly and resilient infrastructure to mitigate environmental impact.

Urban Planning and Management: Addressing challenges in urbanization, such as traffic congestion, waste management, and affordable housing.

Disaster Management and Mitigation: Developing innovative solutions for disaster preparedness, response, and recovery.

Water Resources Management: Efficient utilization and conservation of water resources through advanced technologies and management strategies.

Sustainable Construction Materials: Researching and implementing sustainable materials and construction techniques to reduce carbon footprint.

### Electrical and Electronics Engineering:

Renewable Energy Systems: Designing and optimizing systems for solar, wind, and other renewable energy sources.

Smart Grid and Energy Management: Developing solutions for efficient energy distribution, monitoring, and management.

Internet of Things (IoT) Applications: Creating IoT-based solutions for home automation, healthcare monitoring, and industrial automation.

Electric Vehicle Technology: Advancing electric vehicle infrastructure, battery technology, and charging solutions.

Power Electronics and Control Systems: Improving efficiency and reliability of power conversion systems and control algorithms.

## Electronics and Communication Engineering:

Wireless Communication Technologies: Developing next-generation wireless communication protocols and standards.

Internet of Things (IoT) Devices and Networks: Designing sensors, actuators, and networks for IoT applications in various domains.

Signal Processing and Image Analysis: Enhancing algorithms for signal processing, image recognition, and pattern analysis.

Embedded Systems and Real-Time Applications: Designing embedded systems for real-time control and monitoring in diverse applications.

Telecommunication Network Optimization: Optimizing network performance, reliability, and security in telecommunication systems.

## Mechanical Engineering:

Advanced Manufacturing Technologies: Implementing additive manufacturing, CNC machining, and automation in manufacturing processes.

Sustainable Transportation Solutions: Designing fuel-efficient vehicles, hybrid powertrains, and lightweight materials for automotive and aerospace industries.

Robotics and Automation: Developing robotic systems for industrial automation, healthcare assistance, and hazardous environment exploration.

Energy Efficiency and Thermal Management: Improving energy efficiency and thermal management in HVAC systems, refrigeration, and thermal power plants.

Material Science and Engineering: Researching new materials for high-performance applications, such as composites, alloys, and nanomaterials.

## Computer Science and Engineering:

Artificial Intelligence and Machine Learning Applications: Developing AI and ML solutions for predictive analytics, natural language processing, and computer vision.

Cybersecurity and Privacy Protection: Designing robust security protocols and systems to protect data and privacy in digital environments.

Cloud Computing and Big Data Analytics: Optimizing cloud infrastructure and algorithms for efficient data storage, processing, and analysis.

Software Engineering and DevOps: Streamlining software development processes, continuous integration, and deployment pipelines.

Human-Computer Interaction and User Experience: Enhancing usability and user experience in software applications, websites, and mobile apps.

## Artificial Intelligence and Machine Learning:

Healthcare Informatics: Developing AI-driven solutions for medical imaging analysis, disease diagnosis, and personalized treatment planning.

Natural Language Processing and Understanding: Advancing algorithms for sentiment analysis, language translation, and conversational agents.

Financial Forecasting and Risk Management: Using ML models for stock market prediction, fraud detection, and portfolio optimization.

Autonomous Systems and Robotics: Designing autonomous vehicles, drones, and robotic systems for various applications, including agriculture, logistics, and surveillance.

Climate Modeling and Environmental Monitoring: Utilizing AI techniques for climate prediction, environmental monitoring, and ecological modeling.

## Management:

Supply Chain Optimization: Developing strategies for efficient inventory management, logistics optimization, and supply chain risk mitigation.

Marketing Analytics and Consumer Behavior: Analyzing market trends, customer preferences, and purchasing behavior to optimize marketing strategies.

Strategic Management and Business Innovation: Formulating strategies for business growth, diversification, and competitive advantage in dynamic markets.

Human Resource Management and Talent Development: Designing HR policies, performance evaluation systems, and employee engagement initiatives.

Financial Management and Investment Analysis: Conducting financial analysis, risk assessment, and investment portfolio management for optimal returns.

## 5. Proposal Submission:

Participants are required to submit a detailed proposal outlining their problem statement, proposed solution, and implementation plan.

Proposals should include background information, problem statement, objectives, methodology, expected outcomes, and potential challenges.

Participants may include supporting documents, such as diagrams, charts, or prototypes, to illustrate their proposed solution.

## 6. Evaluation Criteria:

- Proposals will be evaluated based on the following criteria:

  Relevance and significance of the problem statement.

  Clarity and feasibility of the proposed solution.

  Innovation and creativity demonstrated in the approach.

  Potential impact and scalability of the proposed solution.

  Quality of the presentation and documentation.

## 7. Presentation Round:

Shortlisted participants will be invited to present their proposals to a panel of judges.

Presentations should effectively communicate the problem statement, proposed solution, methodology, and expected outcomes within a specified time limit.

Participants may use visual aids, such as slides or prototypes, to enhance their presentations.

## 8. Final Evaluation:

Judges will evaluate presentations based on the predefined evaluation criteria.

Winners will be selected based on the overall quality and merit of their proposals and presentations.

## 9. Prizes and Recognition:

Cash prizes, certificates, and recognition will be awarded to the top-performing participants or teams.

Winners may also receive additional support, such as mentorship or funding, for further development of their ideas.

## 10. Important Dates:

Registration Opens: 5th March, 2024

Registration Closes: 20th March, 2024

Proposal Submission Deadline: 31st March, 2024

Presentation Round: 2nd or 3rd Week of April, 2024

Winners Announcement: 3rd Week of April, 2024

Registration Link: https://forms.gle/a2jbJtNgASMX1A5o9

## 11. Support and Assistance:

Participants may seek guidance and assistance from faculty mentors or department coordinators throughout the contest.

SIE Cell Co-ordinators are encouraged to organize workshops, webinars, or consultations to support participants in developing their proposals and presentations.

## 12. Code of Conduct:

Participants are expected to adhere to ethical standards and academic integrity principles throughout the contest.

Plagiarism or any form of academic dishonesty will result in disqualification from the contest.

The Problem Identification Challenge Contest aims to inspire students to think critically, innovate creatively, and make a positive impact on society and industry. We encourage all eligible students to participate actively and showcase their problem-solving abilities and entrepreneurial spirit.