

T.J.S. ENGINEERING COLLEGE

(Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC)
An ISO 9001:2015 Certified Institution



To
The Director,
Controller of the examinations,
Anna University, Chennai-25.

28.03.2023
Pudhuvoyal.

Respected Sir,

SUB: Submission of feedback from various stack holders of the T.J.S Engineering College-related to the curriculum and Syllabus of Regulation 2021.

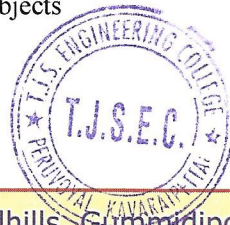
This is to bring to your kind notice that the T.J.S Engineering College has taken feedback from various stakeholders like students, teachers, alumni and employers for enhancing the academic quality and identifying the gaps between industry and institution based on curriculum and syllabus. We are very pleased to bring to your kind notice that the following consideration by our stakeholders for further action and improvements.

This letter focuses on students' selection of electives as part of their university degree programme. The students are getting perplexed in choosing the electives when they are in 5th semester. They are unable to appear for the exam when they fail to clear the paper in the 5th semester as the exams of the elective papers fall on the same date in next semester.

We request you to make changes while framing the next syllabus in the forthcoming regulations as it would help the students for better performance in their academics.

Thanking you Sir,

Encl: R-2021 Syllabus and List of elective subjects



Principal

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T.J.S. ENGINEERING COLLEGE
Peruvoyal, Kavaraipeetai,
Gummidipoondi Taluk,
Thiruvallur Dist - 601 206.



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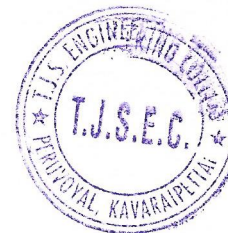
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B.E. COMPUTER SCIENCE AND ENGINEERING PROFESSIONAL ELECTIVE COURSES: VERTICALS

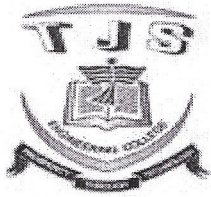
| Vertical I Data Science | Vertical II Full Stack Development | Vertical III Cloud Computing and Data Center Technologies | Vertical IV Cyber Security and Data Privacy | Vertical V Creative Media | Vertical VI Emerging Technologies | Vertical VII Artificial Intelligence and Machine Learning |
|-----------------------------------|---------------------------------------|--|--|---|---|---|
| Exploratory Data Analysis | Web Technologies | Cloud Computing | Ethical Hacking | Augmented Reality/Virtual Reality | Augmented Reality/ Virtual Reality | KnowledgeEngineering |
| Recommender Systems | App Development | Virtualization | Digital and Mobile Forensics | Multimedia and Animation | Robotic Process Automation | Soft Computing |
| Neural Networks and Deep Learning | Cloud Services Management | Cloud Services Management | Social Network Security | Video Creationand Editing | Neural Networks and Deep Learning | Neural Networks and Deep Learning |
| Text and Speech Analysis | UI and UX Design | Data Warehousing | Modern Cryptography | UI and UX Design | Cyber security | Text and Speech Analysis |
| Business Analytics | Software Testing and Automation | Storage Technologies | Engineering Secure Software Systems | Digital marketing | Quantum Computing | Optimization Techniques |
| Image and Video Analytics | Web Application Security | Software Defined Networks | Cryptocurrency and Block chain Technologies | Visual Effects | Cryptocurrency and Block chain Technologies | Game Theory |
| Computer Vision | DevOps | Stream Processing | Network Security | Game Development | Game Development | Cognitive Science |
| Big Data Analytics | Principles of Programming Languages | Security and Privacy inCloud | Security and Privacy inCloud | Multimedia Data Compression and Storage | 3D Printing and Design | Ethics And AI |

Registration of Professional Elective Courses from Verticals:
Refer to the Regulations 2021, Clause 6.3. (Amended on 27.07.2023)



J. Suba
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B.E. MECHANICAL AND ENGINEERING PROFESSIONAL ELECTIVE COURSES: VERTICALS

| VERTICAL 1 | VERTICAL 2 | VERTICAL 3 | VERTICAL 4 | VERTICAL 5 | VERTICAL 6 | VERTICAL 7 | VERTICAL 8 | VERTICAL 9 | VERTICAL 10 |
|--|--|----------------------------------|--|--|--|--|------------------------------------|-------------------------------------|--|
| MODERN MOBILITY SYSTEMS | PRODUCT AND PROCESS DEVELOPMENT | ROBOTICS AND AUTOMATION | DIGITAL AND GREEN MANUFACTURING | PROCESS EQUIPMENT AND PIPING DESIGN | CLEAN AND GREEN ENERGY TECHNOLOGIES | COMPUTATIONAL ENGINEERING | DIVERSIFIED COURSES GROUP 1 | DIVERSIFIED COURSES GROUP 2 | DIVERSIFIED COURSES GROUP 3 |
| Automotive Materials, Components, Design & Testing | Value Engineering | Sensors and Instrumentation | Digital Manufacturing and IoT | Design of Pressure Vessels | Bioenergy Conversion Technologies | Computational Solid Mechanics | Automobile Engineering | Turbo Machines | Advanced Vehicle Engineering |
| Conventional and Futuristic Vehicle Technology | Additive Manufacturing | Electrical Drives and Actuators | Lean Manufacturing | Failure Analysis and NDT Techniques | Carbon Footprint estimation and reduction techniques | Computational Fluid Dynamics and Heat transfer | Measurements and Controls | Non-traditional Machining Processes | Advanced Internal Combustion Engineering |
| Renewable Powered Off Highway Vehicles and Emission Control Technology | CAD/CAM | Embedded Systems and Programming | Modern Robotics | Material Handling and solid processing Equipment | Energy Conservation in Industries | Theory on Computation and Visualization | Design Concepts in Engineering | Industrial safety | Casting and Welding Processes |
| Vehicle Health Monitoring, Maintenance and Safety | Design For X | Robotics | Green Manufacturing Design and Practices | Rotating Machinery Design | Energy Efficient Buildings | Computational Bio- Mechanics | Composite Materials and Mechanics | Design of Transmission System | Process Planning and Cost Estimation |
| CAE and CFD Approach in Future Mobility | Ergonomics in Design | Smart Mobility and Intelligent | Environment Sustainability and | Thermal and Fired Equipment design | Energy Storage Devices | Advanced Statistics and Data Analytics | Electrical Drives and Control | Thermal Power Engineering | Surface Engineering |

| | | Vehicles | Impact Assessment | | | | | | |
|--|-------------------------------|------------------------------------|--|-------------------------------------|---------------------------------|--|------------------------------------|-----------------------------------|---------------------------------|
| Hybrid and Electric Vehicle Technology | New Product Development | Haptics and Immersive Technologies | Energy Saving Machinery and Components | Industrial Layout Design and Safety | Renewable Energy Technologies | CAD and CAE | Power Plant Engineering | Design for Manufacturing | Precision Manufacturing |
| Thermal Management of Batteries and Fuel Cells | Product Life Cycle Management | Drone Technologies | Green Supply Chain Management | Design Codes and Standards | Equipment for Pollution Control | Machine Learning for Intelligent Systems | Refrigeration and Air Conditioning | Power Generation Equipment Design | Gas Dynamics and Jet Propulsion |
| - | - | - | - | - | - | - | Dynamics of Ground Vehicles | - | Operational Research |

Registration of Professional Elective Courses from Verticals:

Professional Elective Courses will be registered in Semesters V and VI. These courses are listed in groups called verticals that represent a particular area of specialisation / diversified group.

Students are permitted to choose all the Professional Electives from a particular vertical or from different verticals. Further, only one Professional Elective course shall be chosen in a semester horizontally (row-wise). However, two courses are permitted from the same row, provided one course is enrolled in Semester V and another in semester VI.

The registration of courses for B.E./B.Tech (Honours) or Minor degree shall be done from Semester V to VIII. The procedure for registration of courses explained above shall be followed for the courses of B.E./B.Tech (Honours) or Minor degree also. For more details on B.E./B.Tech (Honours) or Minor degree refer to the Regulations 2021, Clause 4.10 (Amendments).



J. S. S.
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