ME-VIRTUAL PROTOTYPING AND DIGITAL MANUFACTURING

2015 Regulations

Programme Educational Objectives (PEOs):

The postgraduate programme on Virtual Prototyping and Digital Manufacturing equips the postgraduates with knowledge and skills to create virtual environments to facilitate the development processes of several systems as needed by the society in several areas of life. This group of graduates can contribute towards savings in time, improved value addition and customer satisfaction with the skill set acquired during their study.

1. To train the postgraduates to utilize the power of scientific and engineering data visualization, digital technologies in product development and data sharing in real time as practiced by OEMs.

2. To impart skills to use the principles of computer graphics and visualization in developing visualization environments incorporating the knowledge of Computer Aided Design and Computer Aided Engineering leveraging the power of science.

3. To inculcate the philosophy of concurrent engineering using the concepts of Product Lifecycle Management while developing complex products.

4. To foster research orientation among the postgraduates in the field of virtual reality and visualization.

5. To provide a learning environment that will impart communication skills, social responsibility, desire for lifelong learning and excellence.

Programme Outcomes (POs):

The programme outcomes describe the attributes, skills, and abilities that postgraduates should have upon completion of this programme and are listed below:

a) Postgraduates will understand the mathematical principles used in scientific and engineering data visualization related problems of science and engineering.

b) Postgraduates will be capable of developing simple visualization applications incorporating the latest software and hardware.
c) Postgraduates will demonstrate their ability to create virtual environments for immersive visualization of data related to products/environments using the knowledge on computer graphics and virtual reality.

d) Postgraduates will improve quality in product design by incorporating the suggestions from several stake holders.

e) Postgraduates will understand the platform of object oriented computing and generate codes/programs for business process automation and data transfer.

f) Postgraduates will demonstrate capabilities in developing complex and higher geometry curves and surfaces used in product design and visualization.

g) Postgraduates will be able to use the principles of Computer Aided Engineering and relevant software for simulations.

h) Postgraduates will be groomed in their areas of interest and will demonstrate abilities to communicate their research outcomes.

i) Postgraduates can pursue their careers with OEMs in supporting new product development activities and in the area of research and development.

j) Postgraduates will have the knowledge of reverse engineering and rapid prototyping for product design.

**Correlation between PEOs and POs:**

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* Strong correlation