

DP401P Major Technical Project

Credit :0-0-12-8

Prerequisite: Consent of the faculty member

Students intended for: B.Tech

Elective or Core: Elective

Semester: Even/Odd

Course objective: The purpose of this course is to do in-depth work on Technology/Product

Course content: In this course, using the information that has been collected and the decisions that have been made about the features, price etc. the teams will either redesign the existing prototype or design a new product based on Market feedback and create the physical product, as well as its packaging. Research at this stage usually involves repeated cycles of product improvement and testing. Product testing includes both physical performance and consumer reactions.

The course looks at how a new idea becomes implemented in a system (an organization or society) and the factors that influence the adoption of a new idea. This course also looks at the influence of individuals and groups within the change process and how they affect the acceptance of new ideas. Finally, the course explores the prediction and consequences of new technologies.

The end-result of these efforts is a product that meaningfully adds value to the students, faculty and society. There may be few teams working on specific components or sub systems or technology.

Key Learning Topics

Engineering drawing (CAD) of modified product, Detailed design, Design of experiments, Multiobjective design optimization. CAE Analysis, Software development, Design for assembly, Design for manufacturing, Product manufacturing.: CAM programming, operation of CNC machining equipment and rapid prototyping. Open House

Theory and practice of processes of technology transfer and diffusion: Commercialization of technology, intellectual property rights.

Product innovation: Impact of product innovation; success factors for product innovation; developing a product innovation strategy.

Interactive learning and networks of innovation: Technology Platforms; firms taxonomy.

Systems of Innovation and the corporate value chain: Fostering clustering effects. Regional innovation strategies.

Product quality (ISO 9000 standards), Sustainable design.

After usage: Recycling, reusing, remanufacturing

Live demonstration of product to interested parties.

References:

Product Design for Manufacture & Assembly [Geoffrey Boothroyd](#) , [Peter Dewhurst](#) , [Winston A. Knight](#). second edition

The Entrepreneur's Guide to Sewn Product Manufacturing by [Kathleen Fasanella](#).

Practical Approach To Intellectual Property Rights by [Rachna Singh Puri](#), [Arvind Viswanathan](#)

Technology Transfer, Strategic management in developing country by [Goel Cohen](#). Sage Publication New Delhi.