

# TECHNOLOGY DESIGN (TMD)

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## **TMD 145 Engineering Materials Technology (3 Credits)**

Introduction to the basics of materials science, through individualized and group instruction, relating the basic nature and properties of , polymer, ceramic, metallic, composite and , electronic materials to processing and design, requirements.

## **TMD 150 Engineering Graphics (3 Credits)**

Introduction to theories of projection and the concepts of engineering drawing, including geometric construction, multi view drawing, auxiliary views as well as techniques of lettering and sketching. Hands-on sessions provide practice to reinforce the co

## **TMD 151 Introduction to Cad (3 Credits)**

Awareness of computers in engineering design and problem solving, with emphasis on AutoCAD program on microcomputers for engineering graphics at a beginning level of design. Hands-on sessions using personal computers will provide practice to reinforce the

## **TMD 225 Mechanics I: Statics (3 Credits)**

Develops analytic abilities of various types of force acting on a rigid body at rest with emphasis on systems using algebra and trigonometry, including vectors, couples, equilibrium, centroids, moments, friction and moments of inertia.

## **TMD 227 Dynamics (3 Credits)**

Introduction to a vector treatment of the, kinematics and laws of motion of particles and , rigid bodies, including acceleration, momentum, work, energy and power.

## **TMD 251 Advanced Cad (3 Credits)**

Advanced aspects of CAD using AutoCAD, to produce engineering drawing 2D architecture and mechanical drawings. Special emphasis is placed on 3-D techniques, solid modeling, and rendering. Hands-on sessions using personal computers will provide practice to

## **TMD 252 Tool Design (3 Credits)**

Study of function of a manufacturing environment to design production tools such as fixtures, gauges, dies, and clamping devices. Use of microcomputer provides experience in computer-aided design and other types of software for engineering problem solving.

## **TMD 345 Mechanics II: Strength of Materials (3 Credits)**

Analysis of structures, utilizing principles of Hook's Law; Passions Ration; shear and moment diagrams, including statically determinate and some statically indeterminate structures.

## **TMD 345L Mechanics II Laboratory: Properties of Materials (1 Credits)**

Experimentation with properties of materials, fabrication characteristics, testing, and inspection. (Meets 2 hrs. per week.) It will acquaint students with techniques of testing materials, making accurate observations of phenomena and correct interpretati

## **TMD 348 Fluid Mechanics (3 Credits)**

Introduction to the principles of hydraulics, , fluid properties, hydrodynamics, and methods of, fluid circuit analysis with applications directed , toward various piping systems. Study of , the principles for compressible flows, ideal gas,, real gas. nozzle design and kinetic theory.

## **TMD 355 Machine Design (3 Credits)**

Study of designing screws, fasteners, joints,, springs, bearings, and rigid machine components.

## **TMD 448 Thermodynamics (3 Credits)**

Study of working ability with first and second laws of thermodynamics, including working fluids and heat engines' cycles

## **TMD 450 Instrumentation (3 Credits)**

Introduction to a familiarity with the latest developments in measurement, control, calibrations and analysis of instrumentation from basic theory to its applications, with emphasis on operation, procedure, and principles.

## **TMD 455 Mechanical Design (3 Credits)**

Study of design and slection of beams, gears, , clutches, brakes, couplings, flexible mechanical, elements, includig utilization of basic concepts , of kinematics.