

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 403101 **Description:** Engineering Workshop

Full Course Description: Materials and their classifications, measuring devices, fitting, forming, carpentry, casting, cutting welding, machining and electrical works, practical exercises and general safety.

Course ID: 403221 **Description:** Manufacturing Processes (1)

Full Course Description:

Mechanical behaviour and forming of metals different types of mechanical behaviour and main factors affecting it, yield criteria, representative stress and representative strain, work due to plastic deformation, classification of forming processes with respect to temperature and strain rate, bulk deformation processes (forging, extrusion, rolling), rod and wire drawing sheet forming processes (blanking and piercing, deep drawing and bending, introduction to high energy rate forming processes).

Course ID: 403222 **Description:** Manufacturing Proccses (2)

Full Course Description: Material removal processes, cutting tools, fluids mechanics formation and types of chips merchants theory for determining different forces in orthogonal cutting and power consumption turning, milling drilling shaping and grinding.

Course ID: 403223 **Description:** Manufacturing Processes Lab.

Full Course Description: Experiments concerning basic material processing, operations: casting, pattern design in sand casting, welding, effect of welding variables in spot welding and arc welding, tensile test for welded specimens, cutting: tool geometry, calculations of cutting forces in turning and drilling processes, metal forming: forging process: open-die, impression-die and closed-die forging, drop hammer process, extrusion process, deep drawing process, blanking process.

Course ID: 403241 **Description:** Engineering Statistics (1)

Full Course Description: Probability concepts, discrete and continuous random variables, joint probability distribution covariance and correlations of random variables sampling and empirical distributions.

Course ID: 403251 **Description:** Properties of Materials

Full Course Description: Bonding forces and energies, classification of engineering materials, crystals graphly, imperfection and strengthening mechanisms diffusion, metallography, thermal equilibrium diagram & relative cost of materials.

Course ID: 403252 **Description:** Properties of Materials Lab.

Full Course Description: Tensile and hardness testing of different materials, impact testing, non-destructive testing microscopic testing, thermal conductivity and electrical resistivity of materials.

Course ID: 403253 **Description:** Properties of Materials

Full Course Description: a

Course ID: 403311 **Description:** Human Factors Engineering

Full Course Description: Physical work, physiological capacity and luminations, improving worker efficiency, anthropometry mental work and information & input processing and decision making, design of display and control, study of the physical and social environment of the work place.

Course ID: 403313 **Description:** Human Factors Engineering Lab.

Full Course Description: Topics covered include experiments on the maximum voluntary contraction (MVC), endurance, the eye of vision testers, coordination of measurement of dextircty, maximum voluntary lefting capacity (MVLG), hand tool design, response time.

Course ID: 403321 **Description:** Manufacturing Processes (3)

Full Course Description: Casting: melting and solidification, sand and shell casting, defects in casting, joining of metals adhesives mechanical joint; welding, classification of solid welds, liquid welds defects and inspection of weld.

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 403322 **Description:** Metrology & Measurements

Full Course Description: Errors, linear, angular and contour measurements, sine bar, rotating table fits and tolerances, interchangeability, ISO shaft and hole systems of fits and tolerances, thread and gear metrology, surface texture, out of roundness and flatness measurement, sensing devices, transducers, smart sensors and transmitters, force, torque and train measurements, design of load cells, temperature, pressure and flow measurements.

Course ID: 403323 **Description:** Metrology Lab.

Full Course Description: Experiments concerning the metrology instruments: linear measurements: callipers, height, depth and dial gauges, micrometers and block gauges, angular measurements: sinebar, universal bevel protector, comparison test, snap micrometer, optical comparator, surface texture, roundness test. the coordinate measurement system, alignment test with auto-collimator, temperature, force and displacement measurements.

Course ID: 403331 **Description:** Cost Analysis

Full Course Description: Concepts and theories in accounting and cost analysis, financial statements, product cost, accounting models, systems and methods.

Course ID: 403332 **Description:** Production Planning & Control

Full Course Description: Strategic issues in designing production planning and control systems, aggregate planning, master production scheduling, material requirements, planning capacity, planning and scheduling.

Course ID: 403333 **Description:** Organization Design & Control

Full Course Description: Strategic planning, organization structures, philosophies and models for organizing dynamics of organization, change and organizational behaviour and culture.

Course ID: 403342 **Description:** Quality Control

Full Course Description: Concepts and statistical methods employed in the assurance of product conformance to specifications, control charts for attributes and variables, proven capability analysis, acceptance of sampling plans, international standards and continuous quality improvement.

Course ID: 403343 **Description:** Engineering Statistics (2)

Full Course Description: Point and interval estimation, test of hypotheses, goodness of fit test, contingency tables, design and analysis of single factor experiments, simple linear regression and factorial design.

Course ID: 403344 **Description:** Statistical Analysis

Full Course Description: a

Course ID: 403351 **Description:** Engineering Metallurgy

Full Course Description: Fe-C thermal equilibrium diagram, carbon steels plain carbon steels, heat treatment of steels, alloy steels, cast-iron, copper and aluminum alloys, experiments on metallographic examination, microstructure of carbon, alloy and stainless steel, heat treatment of steels: hardening, annealing and normalizing, hardenability, testing of steels.

Course ID: 403361 **Description:** Industrial Automation

Full Course Description: a

Course ID: 403362 **Description:** Industrial Automation Lab.

Full Course Description: a

Course ID: 403411 **Description:** Facilities Planning

Full Course Description: Strategic facilities planning, plant location, product, process and schedule design, flow, space and activity relationship, personnel requirements, materials handling, computer-aided-layout, warehouse operations.

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 403412 **Description:** Time Analysis & Forecasting

Full Course Description: Steps of forecasting, regression analysis models, exponential smoothing and moving average technique, control therapy concepts in forecasting, on-line and off- line forecasting, technological forecasting and Delphi technique.

Course ID: 403413 **Description:** Simulation

Full Course Description: Probabilistic models, manual simulation, input modelling, simulation modelling, verification and validation of simulation models, output analysis tools for reducing the variance of simulation outputs, applications and case studies.

Course ID: 403414 **Description:** Safety Engineering

Full Course Description: Hazards in workplace, analytical tools of hazards and accidents, probabilistic concepts, safety and health systems, national regulations and requirements, hazard control, safety and health management.

Course ID: 403421 **Description:** Manufacturing Systems

Full Course Description: Mathematical models in manufacturing, models for output, productivity measures, design of flexible manufacturing systems, design of manufacturing cells and assembly system.

Course ID: 403422 **Description:** Die Design & Manufacturing

Full Course Description: Classification of forming dies, main parameters to be considered in die design, sheet metal forming dies (blanking, deep drawing and bending dies), materials used in dies, manufacturing of dies and heat treatment.

Course ID: 403423 **Description:** Theory of Metal Forming & Cutting

Full Course Description: Three dimensional stress and strain systems, Mohr's circle of three-dimensional stress and strain, Levy-Mises relations, slab analysis and upper bound, application to plain strain forging, rod drawing, extrusion and deep drawing, Merchant's theory and application to orthogonal cutting.

Course ID: 403425 **Description:** Mechanical Behaviour of Engineering Materials

Full Course Description: Stress-strain behaviour in tensile and compression tests. The materials behaviour under creep, fatigue, corrosion, wear.

Course ID: 403432 **Description:** Quality Management

Full Course Description: Leadership, customer focus, employee involvement, suppliers partnership, performance measures, tools of TQM, quality assurance systems.

Course ID: 403433 **Description:** Decision Analysis

Full Course Description: Decision under uncertainty, decision under risk, different criteria for decision making, Bayesian decision models, group decision making, computer tools in decision making, sensitivity analysis.

Course ID: 403434 **Description:** Total Quality Management

Full Course Description: a

Course ID: 403435 **Description:** Information Systems

Full Course Description: Concepts of information systems, analytical tools, organization concepts, computer hardware and software, systems design and analysis, computer and communication systems.

Course ID: 403441 **Description:** Operations Research (2)

Full Course Description: Probabilistic and stochastic models used in industrial engineering systems, mark or processes, stochastic processes, queuing and it's applications, discrete and continues processes.

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 403451 **Description:** Industrial Furnaces

Full Course Description: Melting furnaces, induction furnaces, atmosphere control in melting furnaces, heat treatment furnace part, vacuum energy, efficient furnace and operation, energy saving in furnaces.

Course ID: 403453 **Description:** Polymers & Plastic Engineering

Full Course Description: Raw plastic materials, types of polymer, polymerization techniques, polymer properties, engineering analysis of polymer processing, techniques (extrusion injections and blow molding), film blowing, thermoforming, concepts of mold, die and product design.

Course ID: 403461 **Description:** Industrial Automation

Full Course Description: Introduction to the various technologies used in manufacturing automation, Design for Automation, Analysis of production systems including automated flow times and balancing. Building blocks of automation, Numerical Control and CAD/CAM and CNC programming, Robotics and automated material handling systems. Programmable Logic Controllers (PLC), Laboratory applications.

Course ID: 403462 **Description:** Computer Aided Design (CAD)

Full Course Description: a

Course ID: 403463 **Description:** Industrial Engineering Design

Full Course Description: a

Course ID: 2403223 **Description:** Manufacturing Processes Lab.

Full Course Description: a

Course ID: 2403241 **Description:** Engineering Statistics (I)

Full Course Description: a

Course ID: 2403252 **Description:** Properties of Materials Lab.

Full Course Description: a

Course ID: 2403311 **Description:** Human Factors Engineering

Full Course Description: a

Course ID: 2403313 **Description:** Human Factors Engineering Lab

Full Course Description: a

Course ID: 2403322 **Description:** Metrology

Full Course Description: a

Course ID: 2403323 **Description:** Metrology Lab

Full Course Description: a

Course ID: 2403331 **Description:** Cost Analysis

Full Course Description: a

Course ID: 2403332 **Description:** Production Planning and Control

Full Course Description: a

Course ID: 2403341 **Description:** Operations Research (1)

Full Course Description: a

Course ID: 2403342 **Description:** Quality Control

Full Course Description: a

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 2403351 **Description:** Engineering Metallurgy

Full Course Description: a

Course ID: 2403363 **Description:** Product Development

Full Course Description: a

Course ID: 2403411 **Description:** Facilities Planning

Full Course Description: a

Course ID: 2403413 **Description:** Simulation

Full Course Description: a

Course ID: 2403416 **Description:** Time and Motion Study

Full Course Description: a

Course ID: 2403431 **Description:** Project Management

Full Course Description: a

Course ID: 2403433 **Description:** Decision Analysis

Full Course Description: a

Course ID: 2403435 **Description:** Information Systems

Full Course Description: a

Course ID: 2403441 **Description:** Operations Research (2)

Full Course Description: a

Course ID: 3403499 **Description:** Graduation Project (2)

Full Course Description: a

Course ID: 4403221 **Description:** Manufacturing Processes(1)

Full Course Description:

Course ID: 4403241 **Description:** Engineering Statistics (1)

Full Course Description:

Course ID: 4403302 **Description:** Engineering Economy

Full Course Description:

Course ID: 4403311 **Description:** Human Factors Engineering

Full Course Description:

Course ID: 4403312 **Description:** Product Development

Full Course Description:

Course ID: 4403322 **Description:** Metrology & Measurements

Full Course Description:

Course ID: 4403415 **Description:** CAD / CAM

Full Course Description:

Course ID: 4403416 **Description:** Time and Motion Study

Full Course Description:

Course ID: 4403433 **Description:** Decision Analysis

Full Course Description:

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 4403495 **Description:** Special Topics

Full Course Description:

Course ID: 110403242 **Description:** Statistics and Probabilities

Full Course Description: a

Course ID: 110403302 **Description:** Engineering Economy

Full Course Description: a

Course ID: 110403324 **Description:** Manufacturing Processes (1)

Full Course Description: a

Course ID: 110403325 **Description:** Manufacturing Processes Lab.

Full Course Description: a

Course ID: 110403331 **Description:** Cost Analysis

Full Course Description: a

Course ID: 110403341 **Description:** Opreation Research (1)

Full Course Description: a

Course ID: 110403363 **Description:** Engineering Materials and Manufacturing Technology

Full Course Description: a

Course ID: 110403400 **Description:** Practical Training

Full Course Description: a

Course ID: 110403426 **Description:** Manufacturing Processes (2)

Full Course Description: a

Course ID: 110403429 **Description:** Metrology Lab .

Full Course Description: a

Course ID: 110403465 **Description:** Industrial Automation Lab.

Full Course Description: a

Course ID: 110403521 **Description:** Industrial Engineering Design

Full Course Description: a

Course ID: 110403531 **Description:** Human Factors Engineering

Full Course Description: a

Course ID: 110403532 **Description:** Human Factors Engineering Lab.

Full Course Description: a

Course ID: 110403533 **Description:** Safety Engineering

Full Course Description: a

Course ID: 110403534 **Description:** Total Quality Management

Full Course Description: a

Course ID: 110403535 **Description:** Product Develpoment

Full Course Description: a

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 110403537 **Description:** Project Management

Full Course Description: a

Course ID: 110403541 **Description:** Simulation

Full Course Description: a

Course ID: 110403542 **Description:** Decision Analysis

Full Course Description: a

Course ID: 110403543 **Description:** Opreation Research (2)

Full Course Description: a

Course ID: 110403572 **Description:** Graduation Project (2)

Full Course Description: a

Course ID: 110403581 **Description:** Special Topics in Industrial Engineering

Full Course Description: a

Course ID: 150403400 **Description:** Practical Training

Full Course Description: A

Course ID: 1704031436 **Description:** Production Planning & Control

Full Course Description: b

Course ID: 1704031511 **Description:** Facilities Planning

Full Course Description: The course introduces students to the role of facility design in improving performance. Additional topic includes: material flow analysis, personal requirements and material handling, generating and evaluation of layout and location alternatives, and organizing warehouse operations.

Course ID: 1704031561 **Description:** CAD/CAM

Full Course Description: J

Course ID: 1704031571 **Description:** Graduation Project (1)

Full Course Description: m

Course ID: 2004031400 **Description:** Practical Training

Full Course Description:

Course ID: 2104031212 **Description:** Mechanics of materials

Full Course Description:

Course ID: 2104031302 **Description:** Engineering Economy

Full Course Description:

Course ID: 2104031344 **Description:** Applied Statistics Engineering

Full Course Description:

Course ID: 2104031347 **Description:** Engineering Design of experiments

Full Course Description:

Course ID: 2104031352 **Description:** Material Science

Full Course Description:

Course ID: 2104031353 **Description:** Material Science Lab

Full Course Description:

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 2104031427 **Description:** Design Industrial Systems and machine elements

Full Course Description:

Course ID: 2104031428 **Description:** Meteorology

Full Course Description: Errors, linear, angular and contour measurements, sine bar, rotating table fits and tolerances, interchangeability, ISO shaft and hole systems of fits and tolerances, thread and gear metrology, surface texture, out of roundness and flatness measurement, sensing devices, transducers, smart sensors and transmitters, force, torque and train measurements, design of load cells, temperature, pressure and flow measurements.

Course ID: 2104031431 **Description:** Supply chain management and logistic services

Full Course Description: This course describes the flow of the material, information, and financing in the multi-stages production supplying networks. Particularly, this course provides the students with the required knowledge and tools for developing, implementing, and enduring the management strategies of supply chain management.

Course ID: 2104031442 **Description:** Quality control

Full Course Description: This course describes statistical concepts and methods, conformance of the products quality characteristics to the specifications, planning control and proofed analysis for process capability, accepted samples criteria, the international standards for quality control, and continuous improvement for quality

Course ID: 2104031464 **Description:** Industrial automation and control

Full Course Description: This course represents the fundamental concepts for different technologies that are used in industrial automation, the basic assumptions in the design that are considered to adapt to automation, automated production systems analysis, different types of sensors, processors, and actuators that are used in the industrial automation, digital machine programming, computer-aided manufacturing, robots and material handling systems, programmable logic controller and some real-life applications that are given in the lab. The introductory of the course includes the necessary knowledge from the field of control.

Course ID: 2104031509 **Description:** Statistics and Operations Research LAB

Full Course Description:

Course ID: 2104031536 **Description:** Work Measurement and Analysis

Full Course Description: In this course, the student will learn time and motion. The tools and the techniques which can be used. The benefits of using time and motion studies.

Course ID: 2104031538 **Description:** Work Measurement Lab

Full Course Description: This lab contains practical experiments and applications on the Work Measurement

Course ID: 2104031541 **Description:** Simulation

Full Course Description: This course covers the probability models, manual stimulation, inputs simulation, simulation models, verifying the simulation models, the analytical outcomes tools for reducing the variability in the outcomes of the simulation, and real-life application of the simulation in the industries.

Course ID: 2104031542 **Description:** Simulation Lab

Full Course Description: This lab contains practical applications in the simulations using one of the most common simulation software.

Course ID: 2104031544 **Description:** Decision making analysis

Full Course Description: This course covers decision making under uncertain conditions and risk, different ways for decision making, Bayesian models for decision making, decision-making tools using a computer, and sensitivity analysis.

Courses Description

College: Engineering

Department: Industrial Engineering

Course ID: 2104031548 **Description:** Product Design and Development

Full Course Description: Innovative principles of developing and marketing new products. That includes identifying customer's needs, Product engineering, analyzing the product cycle design for manufacturing.

Course ID: 2104031551 **Description:** Creativity and Leadership

Full Course Description: This course discusses the creative tools in business and industry also, learning through a case study approach which aims to learn students how they will be leaders in solving problems in the academic field.

Course ID: 2104031553 **Description:** Management information Systems

Full Course Description: This course helps students to understand how information systems are used in different sectors to achieve strategic and operational aims.

Course ID: 2104031554 **Description:** Nanotechnology and its Applications

Full Course Description:

Course ID: 2104031557 **Description:** Marketing Engineering

Full Course Description: This course focuses on a systematic and analyzed approach to marketing. This approach helps students in determining the options, the suitable procedures, and the estimated returns. Market response models, sector decisions and direction, location decisions, strategic decisions based on market analysis, new product decisions, pricing, and marketing decisions.

Course ID: 2104031558 **Description:** Maintenance Management

Full Course Description: Introduction to maintenance, total production, different maintenance strategies, evaluation of major methodologies of maintenance program development, planning and analysis, examples in decision-making activities, and case studies.

Course ID: 2104031559 **Description:** Strategic Planning

Full Course Description: This course learns students about the nature of strategic planning, development of a strategic plan. Setting vision, mission, and objectives. External evaluation, internal evaluation, analysis and selection of alternatives, strategy implementation and determine the strategic direction for organizations.

Course ID: 2104031560 **Description:** Procurement Engineering

Full Course Description: This course covers the role of procurement in business. Further, this course includes procurement process and financial management.□

Course ID: 2104031561 **Description:** CAD/CAM

Full Course Description: This course presents the basic steps that are taken by managers to improve and develop the product from concept to manufacturing that starts from CAD and ends up with simulation using CAM software. This course allows the student to gain and discover more knowledge to understand how they can use CAD/CAM in industrial applications.

Course ID: 2104031562 **Description:** CAD/ CAM Lab

Full Course Description: This lab contains practical experiments and applications on the CAD/CAM course

Course ID: 2104031565 **Description:** six sigma and Lean Manufacturing

Full Course Description: In this course, students will learn about a famous methodology in the manufacturing and business industries. A project will be assigned under which the students will learn the effective implementation of the methodology.

Courses Description

College: Engineering

Department: Industrial Engineering

Couse ID: 2104031574 **Description:** Quality Management

Full Course Description: This course contains the fundamental knowledge that is related to the quality management concepts for example; the definition of quality, an overview of the development of quality theories and quality management activities, quality management systems, quality planning, quality monitoring, quality assurance, quality enhancement, comparing the quality versus income and quality versus cost and total quality management.

Couse ID: 2104031577 **Description:** Reliability Engineering

Full Course Description: This course gives an introduction about reliability engineering which includes (availability and ability to design) further, this material focuses on practical applications and mathematical concepts.

Couse ID: 2104031582 **Description:** Industrial Engineering in Healthcare

Full Course Description:

Couse ID: 2104031583 **Description:** Polymer Engineering

Full Course Description: Raw plastic materials, types of polymer, polymerization techniques, polymerproperties, engineering analysis of polymer processing, techniques (extrusion injections and blow molding), film blowing, thermoforming, concepts of mold, die, and product design. Polymeric materials. Polymer microstructures, mechanical, chemical, and physical properties, thermoplastic, thermoset, and elastomeric materials, polymer processing and molds, designing with plastics.□