Course Descriptions

IT 110 Geometric Dimensioning & Tolerancing. Geometric dimensioning and tolerancing (GD&T) principles based on industry standards such as ANSI and ASME. Includes terminology, symbol identification, feature control frames, modifiers, datums, etc. Selection of datum features, calculation of bonus tolerances, assignment of form, run-out positional tolerances, and tolerance stack-up.

IT 208 Fundamentals of Manufacturing Processes. Introduction to the basic processes, equipment, and material used in manufacturing. Includes plastics, metal removal, materials joining, casting, and some of the newer processes.

IT 240 First-Line Supervision. Analysis of problems of first-line supervisors. Topics including leadership, motivation, communication, grievances, training, discipline, group and individual effectiveness, and labor relations.

IT 305 Industrial Safety. Principles of industrial accident prevention; accident statistics and costs; appraising safety performance; recognizing industrial hazards and recommending safeguards. Includes a study of the Occupational Safety and Health Act and the Coal Mine Health and Safety Act.

IT 307 Applied Calculus for Technology. Applying mathematical techniques to technology problems, including analysis, formulation, and problem solutions. Techniques of differentiation, max-min problems, and elementary techniques of integration. Prerequisite: Mathematics 111 or equivalent.

IT 375 Production and Inventory Control. Production and inventory control systems. Includes topics in forecasting, master production scheduling, material requirements planning, capacity requirements planning, inventory management, production activity control, and applicable operations research techniques.

IT 382 Motion and Time Study. Principles and practices of motion and time study, including process charts, operations charts, motion summary, and time standards.

IT 390 Cost Estimating. Study of the techniques of cost estimation for products, processes, equipment, projects, and systems.

IT 392 Facilities Planning. The analysis of data to produce a complex facilities plan which maximizes the efficiency of the operation. Methods and equipment of material handling are an important part of the course. Students are assigned an extensive facilities planning project. Prerequisite: 208, 382, or consent of instructor.

IT 395 Technology Design. An elective project on a technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity.

IT 445 Computer-Aided Manufacturing. Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control, part processing, and industrial robots.

IT 450 Project Management. This course is designed to provide students with an overview of the project management process followed by an in-depth examination of the activities needed to successfully initiate, plan, schedule, and control the time and cost factors of the project.

IT 465 Lean Manufacturing. This course will cover the principles and techniques of lean manufacturing. Major topics covered include lean principles, 5S, value stream mapping, total productive maintenance, manufacturing/office cells, setup reduction/quick changeover, pull system/Kanbans, continuous improvement/Kaizen, lean six sigma, lean simulation, and other modern lean manufacturing techniques and issues.

IT 470a Six Sigma Green Belt I. Study the knowledge areas of Six Sigma Green Belt. Topics include six sigma goals, lean principles, theory of constraints, design for six sigma, quality function deployment, failure mode and effects analysis, process management, team dynamics, project management basics, data and process analysis, probability and statistics, measurement system analysis, and process capability.

IT 470b Six Sigma Green Belt II. Study the knowledge areas of Six Sigma Green Belt. Topics include exploratory data analysis, correlation and regression, hypothesis testing, single-factor ANOVA, design of experiments basics, implement and validate solutions, statistical process control, and control plans. Prerequisite: IT470a, or consent of the instructor.

IT 480 Six Sigma Black Belt. Study the knowledge areas of Six Sigma Black Belt. Topics include analysis of variance, fractional factorial experiments, Taguchi robustness concepts, response surface methodology, robust design and process, and other advanced six sigma principles and techniques. Prerequisite: IT470a, IT470b, or consent of the instructor.