



Department of Industrial Engineering and Management Systems
Amirkabir University of Technology

Faculty of

Industrial Engineering and Management Systems

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ABOUT THE FACULTY

The faculty of industrial engineering and management systems of Amirkabir University of Technology has been operating as one of the pioneering faculties in the field of industrial engineering and management systems for more than 40 years.

Optimization of manufacturing systems, innovation and technology, finance and investment, logistics and supply chain management, socio-economic systems modeling, project management and health systems are major areas of the industrial engineering and management systems which have wide applications in organizations' major and minor levels, industrial activities, commercial and commerce and different kinds of services (banks, hospitals, transportation and urban planning).

The faculty of industrial engineering and management systems offers "industrial engineering" program in undergraduate level, eight programs in graduate level and the "industrial engineering" PhD program enjoying the scientific potential of its' about 30 faculty members. It is hoped this faculty would take steps in achieving the goals of science and technology system and promotion of the country's status.

HISTORY

Initiation of industrial engineering program in the Amirkabir University of Technology dates back to 1975. This program was first created as a subdiscipline of manufacturing engineering major at the faculty of mechanical engineering and after a while its title was changed to industrial engineering. Due to the importance of promotion and development of this program, an independent department was established in 1976 named the department of industrial engineering. This department began its activities with 8 faculty members and 30 students. Later, up to 1978 two more faculty members with the PhD degrees were added to this department.

Quantitative and qualitative improvement of the industrial engineering program in Amirkabir University of Technology was accelerated after the Islamic revolution. In the first stage, the industrial engineering department was promoted to the faculty of industrial engineering.

The first group of industrial engineering faculty' graduates entered to the industrial society of the country at 1983. At 1988, the admission of graduate students began in two Master of Science programs of "industrial engineering" and "system management". A new



undergraduate subdiscipline titled programming and analysis of systems was established at 1989. Some developments were made in the industrial engineering Master of Science program at 1993 and the socio-economic systems engineering subdiscipline was added to the existing subdisciplines in this level. The PhD program was also established admitting students in September 1994.

Moreover, due to the importance and necessity of integrated relationship with the industry, conducting researches and studies and administrating various projects in different areas of industrial engineering the "industrial engineering and productivity research center" was founded at 1991. After expanding its area of activity and promotion of its mission, the faculty has been operating as "the faculty of industrial engineering and management systems" since 2010.

Total number of the students graduated from this faculty from the beginning until now is 2799 people at BSc level, 3023 people at MSc level and 209 people at PhD level, most of whom are engaged in different scientific and industrial areas in national and international levels.

ORIENTATION



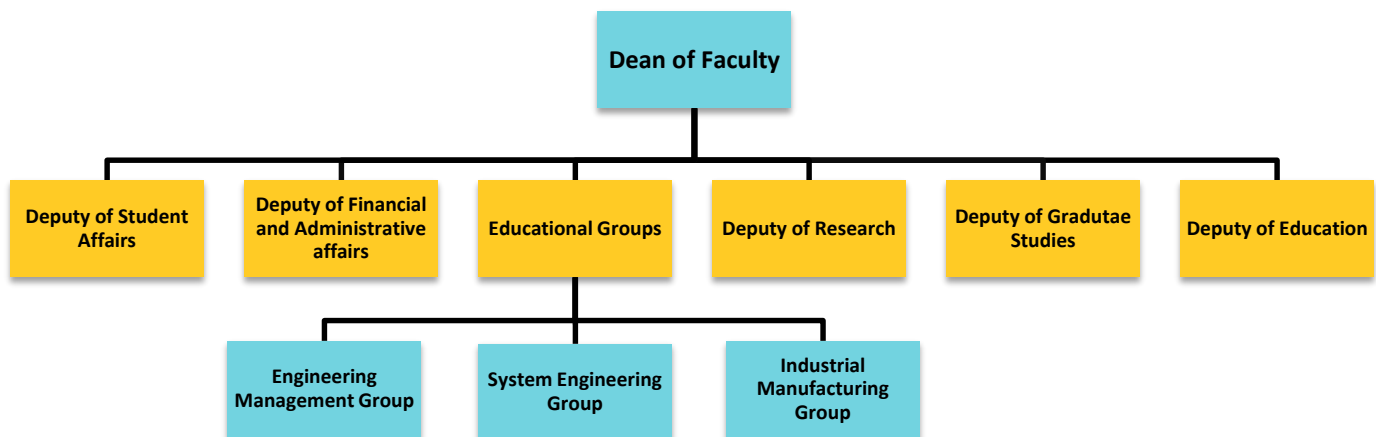
In setting the goals for this faculty it has been attempted to draw an effective role and constructive participation for this faculty inspired by upstream documents of science and technology area and with regard to needs, domestic potentials and relative advantages of the country so that it can fulfill the goals of science and technology system and respond to the needs of society and industry.

- Training specialized and skilled manpower in accordance with international standards in order to respond to the needs of various industries and organizations of the country;
- Directing the educational and research activities of the faculty toward solving the problems and meeting national needs and empowering and promoting the productivity in industry, manufacturing and service sectors;
- Creating a favorable, blooming and productive scientific atmosphere and training the faculty members needed for the country in majors related to industrial engineering;
- Training and empowerment of research scholar for research centers associated with industrial engineering;
- Establishment and development of research networks in order to increase the interactions and expand the range of educational and research activities toward internationalization through employing international faculty members and students;



- Establishing new courses associated with industrial engineering in undergraduate and graduate levels with regard to needs of society;
- Empowering the specialized forces needed by institutions and governmental organizations in different educational levels by offering specific courses, retraining courses, short-term and long-term education;
- Updating the educational contents of various courses through revising the curriculum and making necessary and useful changes;
- Conducting research projects in order to respond to research needs of different industry and service sections.
- Holding relevant specialized seminars, workshops and conferences.

FACULTY STRUCTURE



ACADEMIC DISCIPLINES

According to the curriculum adopted by the specialized committee of industrial engineering at the ministry of science, research and technology students are admitted for Bachelor of Science degree only in "industrial engineering" program. For Master of Science degree, the faculty is considered as the preminent and pioneer university in the country by offering eight programs including "optimization of systems", "socio-economic systems engineering", "engineering management", "financial engineering", "innovation and technology management", "logistics and supply chain engineering", "health systems engineering" and "project management". For PhD level, the faculty admits students only in "industrial engineering" program like the Bachelor's degree.



FACULTY'S MOTTO

Achieving Excellence in all dimensions of education, research, innovation and relationship with industry is our motto.

FIELDS OF EXPERTISE

■ *Management Consulting services*

- *Strategic planning;*
- *Consultation in the field of planning strategies for e-commerce;*
- *Organizational structure reform in order to increase productivity;*
- *Value engineering in order to reduce project expenditures;*
- *Project management structural reform in companies;*
- *Risk management;*
- *Human resource management;*
- *Customer relationship management, marketing and customer relationship structural reforms;*
- *Preparation of business and marketing plans;*
- *Business process reengineering to achieve improvements in productivity, quality and profitability.*

■ *Logistics and Supply Chain Consulting Services*

- *Diagnostic study and analysis of supply chains;*
- *Supply chain network design with optimally determining the number and location of required facilities;*
- *Communication design of supply chain network components; Definition and application of required strategies to support collaboration, coordination and integration;*
- *Logistics infrastructure and network design to reduce logistics costs' portion in products final price and increase competitiveness;*
- *Designing proposals for supply contracts;*
- *Design and implementation of optimal distribution strategies;*
- *Developing business strategies in accordance with supply chain components;*
- *Design and implementation of information technologies compatible with chain activities;*



- *Developing effective sales strategies to deal with different types of clients.*

■ **System Analysis Consulting Services**

- *Diagnosing performance problems in existing systems and resolving them to reduce cost and increase revenue;*
- *Analyzing systemic phenomena to increase organization's harmony and systemic spirit;*
- *Modeling of economic phenomena in respect of reducing cost and increasing revenue;*
- *Linear and nonlinear system analysis to achieve ultimate boost in workflows efficiency.*

■ **Strategic Planning Consulting Services**

- *Developing organization's strategic plan for continuous growth*
- *Preparation of organization's business plan to help continuous improvement;*
- *Preparation of organization's business model to achieve goals;*
- *Extracting value chain in order for organization's prosperity;*
- *Strategic analysis of value chain;*
- *Preparing sector development plans (e.g. tourism development and environment plans);*
- *Designing organization's performance evaluation disciplines.*

■ **Productivity and Organizational Excellence Consulting Services**

- *Consultation to establish EFQM organizational excellence model with the purpose of improving organization conditions;*
- *Preparing declaration of Iran national quality award;*
- *Preparing declaration of national productivity and organizational excellence award;*
- *Consultation to establish Quality Management Systems (ISO);*
- *Consultation in the fields of productivity, 5s, Kaizen, etc.;*
- *Consultation to establish TPM;*
- *Consultation to establish E-government;*
- *Consultation on designing organizational structure;*
- *Consultation on improving systems and methods.*

■ **Knowledge Management Consulting Services**

- *Investigating and extracting important information from existing documents in organization;*
- *Reducing preparation and formulation costs of contracts and procedures;*
- *Discovering and recording important events in plans;*



- *Depicting the ups and downs of plan in order to increase efficiency in the future*
- *Recording unique achievements and characteristics of plan;*
- *Preparing scenarios and pictorial reports using existing pictures and videos of plan.*

■ **Factory and Production Systems Design Consulting Services**

- *Consultation on obtaining necessary licenses;*
- *Consultation on short and long term facilities of banks and government agencies and the ways to get them;*
- *Technology selection to optimize costs;*
- *Selection of plan location;*
- *Purchasing facilities (Selling facilities for small plans below one million dollars, Overseas purchase and clearance);*
- *Installation and commissioning;*
- *Contract management (e.g. managing domestic and foreign contractors for machineries and facilities construction, Engineering supervision) with the purpose of providing possibility of constant supervision over contract progress and budget consumption;*
- *EPC contractor services for small plans;*
- *Operating facilities (Branding, Production and working capital management, and etc.).*

■ **Production Planning and Scheduling Consulting Services**

- *Work measurement and methods improvement in order to reduce cost;*
- *Facility layout improvement in order to reduce cost;*
- *Preventing and managing staff's fatigue in workplace;*
- *Improvement of products quality;*
- *Making better use of organization's resources and facilities;*
- *Speeding-up material handling process;*
- *Prevention and reduction of work-related risks, accidents, illnesses and injuries.*

■ **Maintenance and Repair Consulting Services**

- *Reducing cost through applying optimal maintenance and repair policies;*
- *Improving quality through optimal maintenance and repair policies;*
- *Improving health, safety and environment protection policies ;*
- *Reducing maintenance and repair time.*



■ **Risk Management and Analysis Consulting Services**

- *Assessing operational risk and developing risk reduction plans in manufacturing firms and service organizations;*
- *Assessment and analysis of staff /career risks;*
- *Capital condition assessment in respect of price fluctuations in exchange, stock and commodity markets;*
- *Computation and analysis of Value at Risk (VaR) to evaluate market risk in investments;*
- *Risk analysis and assessment of business processes implementation in organizations;*
- *Measuring and analyzing credit risk of companies listed in Stock Exchange;*
- *Investment risk hedging using futures contracts;*
- *Design and implementation of appropriate strategies for reducing risk of investment portfolio.*

■ **Information systems consulting services**

- *Identifying existing processes and offering alternate optimal method to reduce costs;*
- *Saving time by documentation and work flow analysis;*
- *Evaluating existing internal control systems in order to improve control;*
- *Making the existing mechanism responsible based on the specified objectives and procedures;*
- *Selecting an appropriate system of information circulation in accordance with the specified objectives and budget;*
- *Effective negotiation with vendors in purchasing intended system;*
- *Supervising installation and implementation systems;*
- *Initializing data and operationalizing system to get started;*
- *Teaching company's users new systems and procedures;*
- *Providing and designing managerial reports.*

■ **Information technology systems design consulting services**

- *Production, sale and support of software packages;*
- *Consulting and offering software solutions;*
- *Reformation, improvement and development of organizations' managerial, informational and operational systems and processes;*
- *Designing, implementing and operating integrated informational and operational systems;*
- *Consultation, administration and education in the field of organizational project management systems;*
- *Educating, improving technical knowledge and developing culture of using software tools.*



■ **Quality management and control consulting services**

- *introducing manufacturing quality improvement for globalization;*
- *Improving products quality in order to increase revenue and reduce cost;*
- *Improving product and service quality through applying quality control methods;*
- *Obtaining standard licenses through applying quality control;*
- *Basic and advanced acceptance sampling of cargo, products and etc.;*
- *Reducing wastes and costs by specifying accuracy of testing methods using inter-laboratory studies;*
- *Quality control in laboratory using statistical software;*
- *Introduction to basics of calibration and measurement;*
- *Various quality techniques such as: SPC, MSA, FTA, FMEA,DOE for improving and controlling quality;*
- *Evaluation models of organizational performance;*
- *Time and productivity management, production planning and management;*
- *Relevant educations in the field of CE.*

■ **Quality assurance managing and consulting services**

- *ISO 9001 consultation, quality management system;*
- *ISO 14001 consultation, environmental management system;*
- *OHSAS 18001 consultation, occupational safety and health management system;*
- *ISO 14001 consultation, environmental quality management system;*
- *Occupational safety and health consultation (HSAS 18001), occupational safety and health management system;*
- *HSE consultation, occupational safety and health management system (HSE-MS);*
- *ISO 22000 consultation, quality management system in food industries (ISO 22000);*
- *ISO 13485 consultation, medical devices management system (ISO 13485);*
- *ISO consultation for technical standard of automobile industries (ISO/TS 16949);*
- *ISO 17025 consultation, quality management system in laboratories (ISO 17025);*
- *ISO 15189 consultation, quality management system in medical laboratories (ISO 15189)*
- *ISO 29001 consultation, quality management system at oil, gas and petrochemical industries (ISO 29001);*
- *ISO 27001 consultation, quality management system at information security management (ISO 27001);*
- *ISO 10002 consultation, customer complaints handling management system (ISO 10002);*
- *ISO 10004 consultation, quality management system at assessing customer satisfaction (ISO 10004).*



■ **Technology management consulting services**

- *Developing technology roadmap in order to increase the ability to compete with other industries (reducing the organization's costs at present and future);*
- *Reducing costs of technology purchase and installation by establishing the technology management system;*
- *Improving production quality through technology management;*
- *Consulting in technology transfer;*
- *Developing technology strategy;*
- *Identifying enterprise technologies;*
- *Technology evaluation;*
- *Technology audit;*
- *Technology prediction;*
- *Technology foresight;*
- *Technology acquisition.*

■ **Innovation and creativity engineering consulting services**

- *Improving organization's productivity through teaching innovative techniques to managers and staff;*
- *Reducing costs through teaching innovative techniques to managers and staff;*
- *Establishing learning system with the purpose of improving efficiency;*
- *Establishing suggestion system with the purpose of improving productivity in organization.*

■ **New product design consulting services:**

- *Basic idea of producing new product in order to increase revenue;*
- *process Design with the purpose of producing new product;*
- *Supplying new product to market, receiving market feedback and optimizing product.*

■ **Human factors engineering consulting services**

- *Evaluating the ability of employees with regard to work type and energy consumption in order to improve working conditions;*
- *Studying physical aspects of body (anthropometry) and applying these information in designing working stations and increasing welfare;*
- *Ergonomic designing of manual tools and making them easier to work with;*
- *Designing sitting, standing or combined work stations and analyzing machine-human system;*
- *Psychological investigation with respect to the way of communication between people;*
- *Specifying work and rest regimes (resting times and working period);*



- *Investigating manual handling of product and designing manual loading and packaging lines;*
- *Investigating musculoskeletal injuries related to work and analyzing body postures;*
- *Ergonomics and working at home;*
- *Optimal application of color and music at working environments.*

■ **Work study consulting services**

- *Setting manufacturing standards for productive manufacturing;*
- *Setting standards for the number of people with the purpose of increasing efficiency and reducing costs;*
- *Setting production capacity standards to ensure profitability;*
- *Directing management toward planning and making right decision.*

■ **Consulting services for reducing costs or increasing revenue**

- *Investigating hotspot areas of production cost;*
- *Investigating the software, brainwork and hardware capabilities of employer for planning more desirable sale of products;*
- *Proposing solutions for increasing unit revenue using innovative techniques.*

■ **Warehouse and inventory management consulting services**

- *Specifying the optimal number and capacity of storage centers;*
- *Designing warehouse management systems;*
- *Designing coding and classification schemes for product items*
- *Studying, investigating and proposing warehouse design and mechanization;*
- *Studying and offering appropriate storage and material handling equipments in warehouses (e.g. containers, pallets and etc.);*
- *Providing inventory control system and determining optimal reorder point and interval;*
- *Designing optimal layout of products in warehouse with regard to the characteristics of warehouse, products and parts;*
- *Developing plans for coordination between management of inventory, production and transportations;*
- *Reducing inventory related costs (deterioration of inventory, dead capital and overhead cost) and optimal use of capacity of facilities.*

■ **Sales planning and market management consulting services**

- *Management consultation for market research in order to dominate the market conditions;*
- *Management consultation for marketing and sale strategies management;*
- *Management consultation for advertisement and media;*



- *Management consultation for brand and branding;*
- *Management consultation for signing domestic and foreign contracts;*
- *Management consultation for sales, sales experts, sales staff, telesales and in person sales;*
- *Management consultation for professional domestic and international sales;*
- *Management consultation for professional marketing.*

■ ***Analysis and justification of economic plans consulting services:***

- *Investigating market in order to achieve methods of entering to market with lower costs and higher revenue;*
- *Economic assessment of substituting manufacturing devices and machineries;*
- *Financial and economic investigation and assessment of plans;*
- *Investigation and technical study of production capacity, equipment, machineries, layouts and plans;*
- *Studying market, market potential, competitors, demand elasticity and product position;*
- *Estimating optimal capital needed for plan;*
- *Estimating the current costs of plan;*
- *Preparing balance sheet and financial statements and cash flow during the implementation and operation of plan;*
- *Estimating risks and returns of investment plan;*
- *Calculating economic indicators of plan such as net present value, internal rate of return, modified internal rate of return, payback period and discounted payback period;*
- *Calculating break-even point of production or sales and estimating fixed and variable costs;*
- *Calculating return on investment and economic indicators separately for each investor with regard to amount of investment and type of financing;*
- *Comparing several investment plans and designing optimal investment portfolio;*
- *Evaluating different methods of financing plans and projects;*
- *Evaluating R&D projects with regard to managerial authority.*

RESEARCH ACTIVITIES



■ ***Macro National Plans***

- *Participation in the project titled "the study and planning of urban and suburban intelligent transportation systems";*



- Participation in the project titled "Culturalization in the field of promotion and market-making for goals and achievements of the macro plan of the study and planning of urban and suburban intelligent transportation systems";
- Participation in the project titled "developing the key technology of 100-150 seat airplane".

■ **Samples of the faculty's contracts**

- Management and development of Kaveh industrial zone's market- 2015;
- Technical knowledge development of increasing the soil purity and gradation of Hormoz island with hydrometallurgy method- 2015;
- Feasibility study and determining the readiness of Islamic Republic of Iran's Customs for implementing knowledge management- 2015;
- Providing expertise, consulting and contracting services in the field of optimization and management of energy careers consumption in order to reduce costs in buildings and facilities belonging to Tehran's zone 15 municipality- 2015;
- Development and application of renewable energies in central buildings of Tehran's zone 19 municipality including designing, installing and operating solar electricity system as a complementary electricity system and installing solar water heaters- 2015;
- The Internship contract; Conducting research projects by different professors, Iran Khodro Co-2015;
- Conducting research programs related to management principles of health, safety and environment specific to entertainment, sport, cultural and religious venues and public buildings and places of some zones of Tehran municipality-2015;
- Designing the monitoring system of macro national plans in the science, research and technology supreme council from the perspective of project management-2014;
- Preparing the organization's strategic plan documents in the field of information and communication technology-2014;
- Planning and implementing the knowledge management in the process of designing and developing the product of Imen Tak Pishro Co.-2014;
- Diagnosis and improvement of the supply chain of Arvand Plastic Co.-2014;
- Comprehensive systematic designing of Bafco Co.-2014;
- Providing consultancy and research services for designing and developing the organizational structure of Petro Gohar Farasahel Kish-2014;
- Investigating the effective factors on water consumption of subscribers-2012;
- Calculating, designing, manufacturing, installing and operating six solar water heater for the oil depot of Falat Gharreh-2012;
- Organizational processes reforming in the management and resources development deputy of the ministry of health and medical education of Iran-2011;



- *Performing research services for structural architecture diagnosis and strategic analysis of the existing organization of the National Iranian Drilling Company-2011;*
- *Preparing the strategic plan documents of public contributions and zakat in the field of information and communication technology-2011;*
- *Specifying the sub-transmission dispatching needs of Hormozgan from the perspective of passive defense in order to increase the confidence level and reduce vulnerability-2011;*
- *Justifying, teaching, studying, investigating, preparing and administrating the value engineering at MehrCam Pars Co.-2010;*
- *Justifying, teaching, studying, investigating, preparing and administrating the value engineering at subsidiary organizations and companies of urban services deputy of Tehran municipality-2010;*
- *Energy audit and implementation of applicable solutions with focus on using solar energy in Tehran's district 2, zone 4 municipal building-2010;*
- *Organizing the think tank of National Iranian Petrochemical industry company-2009;*
- *evaluating the structure of organization, and organizing, designing and administrating the careers evaluation system-2008;*
- *Dynamic facility site selection of roadside assistance service units of Emdad Khodro Co.-2007;*
- *Comprehensive study and recognition, and investigation on the potential and realized capabilities of improvement and development at the Agricultural Support Services Company-2007;*
- *Identifying and evaluating the product market of Isfahan's Zob Ahan Co. and its competitors at present and future-2006;*
- *Conducting research and legal investigation on the cooperative sector's law for Islamic Republic of Iran's economy-2006;*
- *Strategic study and economic assessment of developing the Science and Technology Park of Guilan-2006;*
- *Improving and developing the productivity in Iran's post industry with technological approach and using benchmarking method-2004;*
- *Production planning system and designing the desired pattern of petroleum refinement and optimal extraction of oil products-2004.*

EDUCATIONAL SERVICES



The faculty of industrial engineering and management systems pursues its educational activities in three areas as below at undergraduate and postgraduate levels admitting students through national tests benefitting from its professors' scientific potentials and utilizing modern technical infrastructures.



- Industrial production;
- Systems engineering;
- Engineering management.

In addition to offering formal education programs, this faculty has also attempted to educate technicians and present educational certificates based on the society and various industries' needs. Short-term, mid-term and long-term specialized training courses are presented in online and in-person as a flexible tool for improving the knowledge and skill for different target groups.

- *Long-term open training courses such as DBA and MBA;*
- *Mid-term specialized training courses such as summer and winter schools;*
- *Short-term specialized training courses;*
- *Empowerment and skill development courses;*
- *Joint courses with industries and organizations;*
- *Holding specialized symposiums, seminars and conferences.*

FACULTY MEMBERS



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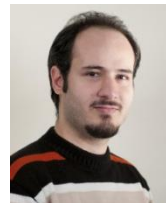
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HONORS

- Inclusion of the name of faculties' professors (Dr. Behrooz Karimi and Dr. Seyyed Mohammad Taghi Fatemi Qomi) in the list of world's 100 top scientists according to the information published in Thomson Reuters database (ISI) in 2015;
- Membership of one of the faculty's professors (Dr. Fatemi Qomi) as the visiting member in the Science Academy's industrial engineering branch;
- Selection of the Dr. Fatemi Qomi as the country's top professor in 2012;
- Receiving several national awards by the faculty's professors (Letter of Appreciation in the field of logistics and supply chain management, productivity and etc.).

JOURNALS AND PUBLICATIONS

- *Cooperation in publishing the Iranian Journal of Operations Research*
(Address: <http://www.iors.ir/journal>)
- *Cooperation in publishing the Amirkabir journal*
(Address: <http://miscj.aut.ac.ir/>)
- *Cooperation in publishing the Journal of Industrial and Systems Engineering*
(Address: <http://jise.ir/>)
- *Cooperation and holding the editor in chief position of the Iranian Journal of Supply Chain Management*
(Address: <http://journals.ihu.ac.ir/index.php/scmj>)



SPECIALIZED BOOKS

- The process of hierarchical analysis;
- Production planning and inventory control;
- Operation management (concepts and methods);
- The life cycle of organizations;
- Knowledge management (concepts, models, measurement and implementation);
- Motion and time study
- Modern methods of systems planning and analysis;
- Organizational guidance;
- Probabilities: theories and applications;
- Statistical quality control;
- Theory and applications of reliability in systems design;
- Iran at the contention of the world and the region;
- Data mining;
- Comprehensive innovation management.





INFRASTRUCTURES AND FACILITIES

■ LABORATORIES

❖ Motion and time study and timing systems laboratory

This laboratory is used for teaching the followings:

- *Investigating different ways of doing the work;*
- *Analysis of the operation;*
- *Creating appropriate designs considering economic principles in terms of human body;*
- *Designing desktop and machineries and tools;*
- *Analysis of movements;*
- *Determining the standard time data using direct observation systems and predetermined motion time systems;*
- *Timing analyses and the ways of comparing them;*
- *Selecting timing system;*
- *Analyzing the time for material handling with crane and hand and motor driven trucks;*
- *The method of time modeling using MTM-1, MTM-2, MTM-3, MTM-C MTM-M, STOP WATCH, BASIC MOST, MINI MOST, MAXI MOST systems;*
- *Creating time formula;*
- *Standard data;*
- *Sampling of activity.*

➤ Equipment of the laboratory

- *Roof crane;*
- *hand tools;*
- *Lathe;*
- *Electronic parts;*
- *Chronometer;*
- *Hand trucks.*



❖ Accurate measurement and quality control laboratory

This laboratory is used for teaching the followings:

- *Introducing different equipment used in instrumentation and how to work with these equipment;*
- *Errors, accuracies and other effective factors on measurement;*
- *How to use standard tables in measurement;*



- Working with CNC accurate instruments.
- **Equipment of the laboratory**
 - Non-CNC instruments;
 - CNC instruments;
 - Profile projector device;
 - CMM device.



❖ Flexible production systems laboratory

Flexible production systems are groups of computer numerical control machine tools which are able to process a group of parts randomly in a way that the system can automatically adapt in order to make changes in production, collections and etc. by having an automatic material handling system with a central computer control.

In this laboratory, students become familiar with different methods of production and different machineries of manufacturing and production. This laboratory is considered as a practical example of flexible production systems.



➤ **Equipment of the laboratory**

- FMS production line equipment, this system consists of different parts including system controller computer, conveyor belt, robot, pallet and CNC lathe along with a computer;
- CNC turning and milling machines.

❖ Ergonomics and humane factors engineering laboratory

This laboratory is used for teaching the followings:

- Physiologic analysis of body;
- Analysis of human in work environment from the perspective of making improvements in the system using macro parameters;
- Analysis of human and machine relationship in dealing with monitors;
- Designing equipment and hand tools;
- Determining the field of view and visual ability;
- Measuring the amount of dust;
- Physiologic tests of body (blood pressure and electrocardiogram);
- Assessment of physical condition of human body in 8 eight different protocols;
- Industrial and ergonomic hygiene;
- Examining human physical capabilities in environmental chamber;



- *Ergonomic analysis of auto ancillary systems;*
- *Anthropometry and work environment design;*
- *Ergonomic analysis of work;*
- *Analysis of manual transportation, pooling and pushing;*
- *Analysis of static work using discomfort recording methods, Nordic test, OWAS method, RULA method and Posture Targeting method.*

➤ **Equipment of the laboratory**

- *Sound level meter device;*
- *Photometer device;*
- *Ergometer device;*
- *Anthropometer;*
- *Equipment for hand tools design*
- *Anatomical models.*



- ❖ **Intelligent systems laboratory**
- ❖ **Data mining laboratory**
- ❖ **Optimization and simulation laboratory**
- ❖ **Financial engineering laboratory**
- ❖ **Logistics and supply chain laboratory**
- ❖ **Health systems laboratory**

■ **LIBRARY**

The university's library and scientific documents center titled The Central Library is known as the engineering library of Tehran and is the reference for engineering libraries of the country. This center functions as a digital library in the field of meeting informational needs of visitors such as books (Latin and Persian), printed dissertations and electronic sources (books, journals, articles, dissertations, standards ...).

Containing over 190000 Persian and Latin books, about 35000 electronic Latin books, over 36000 academic dissertations (scientific achievements of the university) and providing access and subscription to 32 online databases leads this library to be considered as one of the richest university libraries in the country in the engineering field and it currently provides services to members and visitors.

■ **COMPUTER SITE**

Separate computer sites have been specified for undergraduate and postgraduate students, all of them equipped with computers, printers and scanners. A computer network has also been established to connect computers in the university which is supported by a wireless



network. Moreover, access to wireless internet is provided for professors, students and staff all around the campus.

■ ELECTRONIC EDUCATION INFRASTRUCTURES

The faculty has the advantage of utilizing electronic education infrastructures and holding electronic education courses through internet network enjoying the most comprehensive software and hardware facilities and has the full support of the professors in both online and offline formats.

■ CLASSES AND AUDIOVISUAL ROOM

All of the classes in the faculty are equipped with training aid facilities including computer, video projector and white board.

■ AMPHITHEATER

The faculty's exclusive amphitheater equipped with the most up-to-dated audiovisual facilities can accommodate 180 people.

AFFILIATED CENTERS

■ Industrial engineering and productivity research center

The Industrial engineering and productivity research center of Amirkabir University was founded at 1991 aiming at conducting research projects and offering consultation in different fields of industrial engineering, productivity and systems management. This center managed to get the principal agreement of higher education development council in 1993. Employing experts and powerful scientific personnel of university professors and graduates has promoted the scientific and administrative power of this center. Minimizing the distance between industry and university is one of the most important missions of this center. The experiences obtained from projects administrated by this center, as one of the most precious parts of its assets, will result in improvement of administrative and scientific abilities of the center in conducting future projects and programs. The most important areas of the center's activities can be presented as below:

- *Performing applied and developmental research projects in different fields of industrial engineering and operation management;*
- *Performing research and operational projects in the field of productivity;*
- *Applying the results of researches in optimization and systems simulation;*
- *Offering management consultation in different fields of strategic planning, business processes engineering, performance management and business models development;*
- *Performing applied and research projects in the field of organizational architecture;*



- *Performing study projects in socio-economic fields, feasibility and business plan studies and diagnosis of production, service and administration sectors;*
- *Creating active and constructive relationship with industrial research centers and other scientific and research institutions and societies inside and outside the country;*
- *Taking advantage of the most recent research results and scientific achievements of industrial engineering in order to contribute to the goal of country's scientific, economic and social development;*
- *Publishing the achievements of applied research;*
- *Holding specialized-scientific seminars and workshops in order to improve the knowledge of industrial and service organizations and companies' experts and managers according to their needs.*

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