



PROSPECTUS

Department of Industrial Engineering Bachelor of Engineering (B. Eng) Degree in Industrial Engineering

Jonrinaldi, Ph.D, Department Chairperson,
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ABOUT THE PROGRAM



Vision:

Becoming an internationally recognized Industrial Engineering Undergraduate Program.

Mission:

- (1) To organize undergraduate education in Industrial Engineering to produce graduates who are qualified, professional and able to compete in the global market,
- (2) To organize internationally quality applied research in Industrial Engineering field,
- (3) To support the improvement of Indonesia's competitiveness through the creation of works in the field of industrial engineering that are beneficial to society.

Accreditation :

The Bachelor of Engineering (B. Eng) program possesses the highest ranking of accreditation (A rank) from the Board of National Accreditation for Higher Education (BAN-PT), Indonesia. The program is also recognized internationally as it gains an accreditation from Indonesian Accreditation Board for Engineering Education (IABEE), a provisional member of Washington Accord, and in the process of getting an accreditation from Accreditation Board for Engineering and Technology (ABET), USA.

Program Overview:

Industrial Engineering is the branch of engineering which is concerned with the design, improvement and installation of integrated systems of people, materials, information, equipment and energy. It draws upon specialized knowledge and skill in the mathematical, physical, and social sciences together with the principles and methods of engineering analysis and design, to specify, predict, and evaluate the results to be obtained from such systems. The Industrial Engineering curriculum at Universitas Andalas is designed to encourage graduates to develop knowledge, skill and attitude, gained during their education, in their careers in the industries and also implement them through entrepreneurship and intrapreneurship experiences.





Program Educational Objectives:

The Program Educational Objectives of the Department of Industrial Engineering as adopted by the IE Faculty, IE Industrial Advisory Board and the IE Student Leadership are as follows:

1. Graduates are expected to attain professionalism and leadership role within industrial organization or other related organization,
2. Graduates are expected to attain role as the source for efficient and value added solutions to increase the benefit of the organization,
3. Graduates are expected to attain cost, quality, and delivery considerations in making decisions to achieve global competitive advantages.



Student Outcomes:

Student outcomes are statements of the expectations for the knowledge and skills that student should possess when they graduate with Bachelor of Engineering in Industrial Engineering from Universitas Andalas. Graduates of the program must demonstrate the followings:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics,
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences,
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts,
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives,
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions,
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
8. An ability to apply basic entrepreneurship skills.

CURRICULUM



Bachelor of Engineering in Industrial Engineering			
FIRST YEAR			
SEMESTER 1		SEMESTER 2	
Course	Credit	Course	Credit
HKU 110 Religion	2	SSE 128 English II (Academic Writing)	2
SSE 127 English 1 (Basic English)	2	PAP 114 Basic Physics II	4/L
PAM 111 Calculus I	4	PAM 112 Calculus II	4
PAP 113 Basic Physics I	4/L	TLI 110 Environmental Knowledge	2
PAK 110 Basic Chemistry	3/L	TIN 104 Computer Programming	3/L
TIN 101 Introduction to Industrial Engineering	2	TIN 106 Statics	2
SSI 110 Bahasa Indonesia	2	HKU 120 Pancasila and Citizenship	2
TIN 103 Engineering Drawing	2/P	TIN 108 Introduction to Economics	2
TOTAL	21	TOTAL	21
SECOND YEAR			
SEMESTER 3		SEMESTER 4	
Course	Credit	Course	Credit
PAM 213 Matrices and Vectors	4	TIN 202 Human Resource Management	2
TIN 201 Engineering Material	3/L	TIN 204 Multivariate Calculus	4
TIN 203 Manufacturing Process	3/L	TIN 206 Operations Research I	3/P
TIN 205 Industrial Statistic I	3/P	TIN 208 Industrial Statistics II	3/P
TIN 207 Work System Design and Analysis	2	TIN 212 Cost Analysis and Estimation	2
TIN 209 Industrial Electronics	2	TIN 216 Industrial Ergonomics	2
TIN 213 Professional Ethics	2/P	TIN 218 Production Planning and Control	4
TOTAL	19	TOTAL	20
THIRD YEAR			
SEMESTER 5		SEMESTER 6	
Course	Credit	Course	Credit
TIN 301 Operations Research II	3/P	TIN 302 Engineering Economics	2
TIN 303 Management Information System	2	TIN 304 Quality Control and Assurance	3
TIN 309 Automation of Production System	3/L	TIN 306 System Modelling	3/P
TIN 311 Organizational Behavior and Leadership	2	TIN 308 Industrial Engineering Design II	2/P
TIN 313 Safety, Health, and Work Environment	2	TIN 312 Research Methodology	2
TIN 315 Industrial Engineering Design I	2/L	TIN 314 Facilities Layout Design	3/P
TIN 317 Introduction to Energy	2	TIN 316 Supply Chain System	2
TIN 319 Project Management	2	TIN 320 Internship Program	2
TOTAL	18	TOTAL	19
FOURTH YEAR			
SEMESTER 7		SEMESTER 8	
Course	Credit	Course	Credit
TIN 401 Enterprise Design and Analysis	2/P	TIN 480 Seminar	2
TIN 403 System Simulation	3/P	TIN 490 Final Project	4
TIN 407 Entrepreneurship	2	TIN 4xx Elective Course IV	2
TIN 409 Product Design and Development	2	TIN 4xx Elective Course V	2
AND 401 Community Service and Development	3		
TIN 4xx Elective Course I	2		
TIN 4xx Elective Course II	2		
TIN 4xx Elective Course III	2		
TOTAL	18	TOTAL	10
Elective courses for Semester 7		Elective course for Semester 8	
Course	Credit	Course	Credit
TIN 411 Inventory System	2	TIN 412 Experimental Design	2
TIN 413 Maintenance System	2	TIN 414 Just In Time Production System	2
TIN 421 Financial Management	2	TIN 422 E-Business Design	2
TIN 423 Decision Theory	2	TIN 432 Enterprise Performance Measurement	2
TIN 431 Enterprise Resource Planning	2	TIN 434 Risk Analysis	2
TIN 435 Advanced Computer Programming	2	TIN 436 Environmental Ergonomics	2
TIN 437 Intelligent System	2	TIN 438 Marketing Theory	2
TIN 439 Man Machine System	2	TIN 442 Quality Management	2
TIN 441 Strategic Management	2	TIN 444 Decision Support System	2
TIN 443 Cognitive Ergonomics	2	TIN 446 CAD/CAM	2
TOTAL	20	TOTAL	20
L: include Lab activities, P: include projects			

FACULTY

- Afri Adanan, MT, Assistant Professor, Master: Indonesia,
- Dr. Ahmad Syafruddin, Associate Professor, Dr: Indonesia
- Dr. Alexie Herryandie, Assistant Professor, Dr: Indonesia
- Dr. Alfadhiani, Assisstant Professor, Dr: Indonesia
- Prof. Alizar Hasan, Ph.D, Professor, Ph.D: Malaysia
- Ardhian Agung Yulianto, MT, Lecturer, Master: Indonesia
- Asmuliardi Muluk, MT, Associate Professor, Master: Indonesia
- Ir. Bakri Bakar, Emeritus Faculty
- Dr.-Eng. Desto Jumeno, Assistant Professor, Dr.-Eng: Japan
- Dr.-Eng. Dicky Fatrias, Assistant Professor, Dr.-Eng: Japan
- Difana Meilani, MISD, Associate Professor, Master: Netherlands
- Dina Rahmayanti, M.Eng, Assistant Professor, M. Eng: Malaysia
- Elita Amrina, Ph.D, Associate Professor, Ph.D: Malaysia
- Eri Wirdianto, M.Sc, Associate Professor, M.Sc: UK
- Feri Afrinaldi, Ph.D, Assistant Professor, Ph.D: USA
- Ikhwan Arief, M.Sc, Assistant Professor, M.Sc: UK
- Insannul Kamil, Ph.D, Associate Professor, Ph.D: Malaysia
- Jonrinaldi, Ph.D, Assistant Professor, Ph.D: UK
- Dr.-Eng Lusi Susanti, Associate Professor, Dr.-Eng: Japan
- Nilda Tri Putri, Ph.D, Associate Professor, Ph.D: Malaysia
- Prima Fithri, MT, Assisstant Professor, Master: Indonesia
- Reinny Patrisina, Ph.D, Assisstant Professor, Ph.D: Thailand
- Prof. Dr. Rika Ampuh Hadiguna, Professor, Dr: Indonesia
- Taufik, MT, Associate Professor, Master: Indonesia
- Wisnel, M.Sc, Associate Professor, M.Sc: UK
- Yumi Meuthia, MT, Assistant Professor, Master: Indonesia
- Hadigufri Triha, MT, Instructor, Master: Indonesia
- Irsyadul Halim, MT, Instructor, Master: Indonesia
- Ivan Moharya Kasim, M. Eng, Instructor, M. Eng: Malaysia



FACILITIES

- Industrial System Design and Optimization Lab
- Work Systems Design and Ergonomics Lab
- Production Systems Lab
- Information Systems & Decision Lab
- Plant Facility Layout Lab
- Business and Management Lab
- Computer/ Multimedia Room
- Lab scale assembly line
- Innovation research center
- Reading room
- Conference room
- Seminar rooms
- Classrooms
- Discussion rooms
- Student activity rooms



RESEARCH GROUPS

- Human Factors Engineering
- Manufacturing Systems
- Engineering Management Systems
- Logistic and Supply Chain Systems

