Business Engineering

Introduction

Business Engineering is the latest program from the Binus-ASO School of Engineering, designed to provide the most cutting-edge skills needed by today's job market. Nowadays, the skills required for success in society are not only knowledge and expertise in one field but also from various disciplines. The BE program is built with the consideration of these new demands. It integrates three fields of study: Business, Information Technology, and Industrial Engineering. As a result, BE graduates are capable of pursuing careers in various fields, including Business Engineering Specialist, Systems Analyst, Business Consultant, Management Analyst, Business Development Manager, Project Manager, Supply Chain Manager, IT Consultant, Financial Analyst, or Operations Manager.

Vision

A world-class Business Engineering Program by fostering and empowering society in building and serving the nation.

Mission

To contribute to the global community through the provision of world-class education by:

1. Developing exemplary characters of Business Engineering through a holistic approach that meets global standards.
2. Resolving the nation's issues in Business Engineering field study through high-impact research.
3. Fostering BINUSIAN as lifelong learners through self-enrichment to align with Business Engineering.
4. Empowering BINUSIAN to continuously improve society's quality of life with innovative business engineering.
5. Being the main driver to enrich the BINUS Higher Education system by applying Business Engineering knowledge and skills.

Program Objective

The objectives of the program are to:

1. Utilize appropriate business engineering methods and tools for the benefit of society.
2. Possess effective teamwork, leadership skills, and commitment to the highest standards of the profession and ethical practices.
3. Continuously develop oneself to meet the evolving demands and increasing responsibilities for successful careers for the benefit of the organization and society.

Student Outcomes

At the end of the program, graduates will have these following competencies:

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 context.
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 conclusion.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Prospective Career of the Graduates

1. Business Engineering Specialist
2. Systems Analyst
3. Business Consultant
4. Management Analyst
5. Business Development Manager
6. Project Manager
7. Supply Chain Manager
8. IT Consultant
9. Financial Analyst
10. Operations Manager

Curriculum

In general, the curriculum consists of six groups of courses: Math and Basic Science courses (30 credit units), Industrial Engineering core courses (32 credit units), Business Engineering courses (24 credit units), Enrichment Program courses (40 credit units), Thesis (6 credit units), and university courses (12 credit units). The courses in the Business Engineering category are related to business, economics, and finance, such as Introduction to Economics, Engineering Economics, and Marketing Management. Students are also required to complete an internship at a company or university, either domestically or abroad, for two semesters. The university courses include Character Building, Indonesian Language, and Entrepreneurship.

Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6016011	Character Building: Pancasila	2	20
	SCIE6031011	Physics I	4	
	SCIE6037011	Biology	2	
	MATH6098011	Calculus I	4	
	ISYE6199011	System Engineering & Analysis	2	
	ECON6103011	Introduction to Economics	2	
	MGMT6452011	Marketing Management	2	
	COSC6107011	Foundations of Programming and Cloud Computing	2	

Sem	Code	Course Name	SCU	Total
2	CHAR6017011	Character Building: Kewarganegaraan	2	20
	MATH6100011	Calculus II	4	
	MATH6175011	Chemistry	3	
	SCIE6060011	Physics II	4/1	
	STAT6108011	Probability Theory	2	
	COSC6013011	Foundations of Artificial Intelligence	2	
	LANG6120011	Indonesian	2	
3	MATH6108011	Linear and Discrete Mathematics	4	19
	STAT6183011	Applied Statistics	2	
	MATH6107011	Calculus III	4	
	ISYE6197011	Human-Integrated Systems	2/1	
	ISYE6110011	Engineering Economy	2	
	ISYS6712011	Database Management Systems	2	
	ENPR6296011	Entrepreneurship: Prototyping	2	
4	CHAR6018011	Character Building: Agama	2	20
	STAT6184011	Stochastic Process (**AIE**)	2	
	ISYE6198011	Deterministic Optimization	3	
	ISYE6201011	Quality Engineering (**AIE**)	3	
	ISYE6105011	Leadership and Organizational Behavior	2	
	PSYC6212011	General Psychology	2	
	BSEN6001011	Data Visualization	2	
	ISYS6711011	Management Information Systems	2	
	ENTR6590011	Entrepreneurship: Market Validation	2	
5	ISYE6313011	Facility Planning and Safety Engineering (**AIE**)	4	21
	ISYE6203011	Production & Operation Analysis (**AIE**)	3/1	
	ISYE6204011	Systems Simulation	3	
	ISYE6340011	Decision Making Under Uncertainty	2	
	ISYE6341011	Network Flow in Transportation and Logistics	2	
	BSEN6002011	Data Mining & Analysis	2/1	
	ISYE6243011	Financial Engineering	2/1	
6	**Enrichment Program I**		20	20
7	**Enrichment Program II**		20	20
8	BSEN6003011	Final Project	6	6
			TOTAL CREDIT 146 SCU	

-)SCU for COSC6107011 is practical courses

-) **(AIE)** *- Artificial Intelligence Embedded*

Enrichment Program I (6th Semester) & Enrichment Program II (7th Semester):

-) Student will take one of enrichment program tracks (off campus). See enrichment appendix for the tracks detail.

Enrichment Track Scheme

Track	Semester 6							Semester 7						
	IN	RS	EN	CD	SA	IS	etc	IN	RS	EN	CD	SA	IS	etc
1	v							v						
2		v						v						
3			v					v						
4				v				v						
5					v			v						
6	v								v					
7		v							v					
8			v						v					
9				v					v					
10					v				v					
11	v									v				
12		v								v				
13			v							v				
14				v						v				
15					v					v				
16	v										v			
17		v									v			
18			v								v			
19				v							v			
20					v						v			
21	v											v		
22		v										v		
23			v									v		
24				v								v		
25					v							v		
26						v		v						
27						v			v					
28						v				v				
29						v					v			
30						v						v		
31	v												v	
32		v											v	
33			v										v	
34				v									v	
35					v								v	

Notes:

IN : Company Internship
RS : Research Fellowship
EN : Entrepreneurship
CD : Community Impact Internship
SA : Study Abroad
IS : Specific Independent Study
etc : Study Program Special Purposes

Description:
Student will take one of enrichment program tracks

Company Internship Track

Code	Course Name	SCU	Total
Enrichment Program I			20
BSEN6015011	Industrial Business Engineering	8	
BSEN6016011	Project Planning and Management for Engineers	6	
BSEN6017011	Professional Practice	6	
Enrichment Program II			20
BSEN6018011	Integrated Problem Solving in Business Engineering	8	
BSEN6011011	Project Management	6	
BSEN6019011	Environment Social and Governance	6	

Enrichment Program is a compulsory off-campus enrichment program for all students

Research Impact Internship Track

Code	Course Name	SCU	Total
Enrichment Program I			20
BSEN6023011	Recent Trend in Business Engineering Research I	8	
BSEN6024011	Scientific Communication of Business Engineering Research	6	
BSEN6025011	Critical Thinking Skills in Business Engineering Research	6	
Enrichment Program II			20
BSEN6026011	Recent Trend in Business Engineering Research II	8	
BSEN6027011	Development of Interdisciplinary Business Engineering Research	6	
BSEN6028011	Collaborative Skills in Business Engineering Research	6	

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Entrepreneurship Track

Code	Course Name	SCU	Total
Enrichment Program I			20
BSEN6012011	Contemporary Professional Practice	8	
BSEN6013011	Business Plan Development	6	
BSEN6014011	New Knowledge Acquisition and Application	6	
Enrichment Program II			20
BSEN6020011	Digital Business Engineering	8	
BSEN6021011	Development of Industrial Digital Business	6	
BSEN6022011	Leadership and Change Management in the Digital Age	6	

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Community Impact Internship Track

Code	Course Name	SCU	Total
Enrichment Program I			20
BSEN6029011	Integrated Business and Engineering for Small-scale Business	8	
BSEN6030011	Engineering Business Development Plan for Small-Scale Business	6	
BSEN6031011	Soft Skills of Business Engineering	6	
Enrichment Program II			20
BSEN6032011	Integrated Business and Engineering for Medium-Scale Business	8	
BSEN6033011	Engineering Business Development Plan for Medium-Scale Business	6	
BSEN6034011	Business Engineering Ethics	6	

Enrichment Program is a compulsory off-campus enrichment program for all students

Study Abroad Track

Code	Course Name	SCU	Total
Enrichment Program I			20
GLOB6636011	Elective Course for Study Abroad 1	4	
GLOB6637011	Elective Course for Study Abroad 2	4	
GLOB6638011	Elective Course for Study Abroad 3	4	
GLOB6639011	Elective Course for Study Abroad 4	4	
GLOB6640011	Elective Course for Study Abroad 5	4	
GLOB6641011	Elective Course for Study Abroad 6	2	
GLOB6642011	Elective Course for Study Abroad 7	2	
GLOB6643011	Elective Course for Study Abroad 8	2	
GLOB6644011	Elective Course for Study Abroad 9	2	
GLOB6645011	Elective Course for Study Abroad 10	2	
GLOB6646011	Elective Course for Study Abroad 11	2	
GLOB6647011	Elective Course for Study Abroad 12	2	
GLOB6648011	Elective Course for Study Abroad 13	2	
GLOB6649011	Elective Course for Study Abroad 14	2	
GLOB6650011	Elective Course for Study Abroad 15	2	
GLOB6651011	Elective Course for Study Abroad 16	3	
GLOB6652011	Elective Course for Study Abroad 17	3	
Enrichment Program II			20
GLOB6653011	Elective Course for Study Abroad 18	4	
GLOB6654011	Elective Course for Study Abroad 19	4	
GLOB6655011	Elective Course for Study Abroad 20	4	
GLOB6656011	Elective Course for Study Abroad 21	4	
GLOB6657011	Elective Course for Study Abroad 22	4	
GLOB6658011	Elective Course for Study Abroad 23	2	

Code	Course Name	SCU	Total
GLOB6659011	Elective Course for Study Abroad 24	2	
GLOB6660011	Elective Course for Study Abroad 25	2	
GLOB6661011	Elective Course for Study Abroad 26	2	
GLOB6662011	Elective Course for Study Abroad 27	2	
GLOB6663011	Elective Course for Study Abroad 28	2	
GLOB6664011	Elective Course for Study Abroad 29	2	
GLOB6665011	Elective Course for Study Abroad 30	2	
GLOB6666011	Elective Course for Study Abroad 31	2	
GLOB6667011	Elective Course for Study Abroad 32	2	
GLOB6668011	Elective Course for Study Abroad 33	3	
GLOB6669011	Elective Course for Study Abroad 34	3	

Enrichment Program is a compulsory off-campus enrichment program for all students

Specific Independent Study Track

Code	Course Name	SCU	Total
Elective courses list for Specific Independent Study*			
Enrichment Program I/II			
CSIS6157011	Course Certification	3	
CSIS6158011	Technical Skill Enrichment	4	
CSIS6159011	Industrial Project	9	
CSIS6160011	Soft Skill Enrichment	4	
CSIS6123011	Elective Course for Specific Independent Study 1	4	
CSIS6124011	Elective Course for Specific Independent Study 2	4	
CSIS6125011	Elective Course for Specific Independent Study 3	4	20
CSIS6126011	Elective Course for Specific Independent Study 4	4	
CSIS6127011	Elective Course for Specific Independent Study 5	4	
CSIS6128011	Elective Course for Specific Independent Study 6	2	
CSIS6129011	Elective Course for Specific Independent Study 7	2	
CSIS6130011	Elective Course for Specific Independent Study 8	2	
CSIS6131011	Elective Course for Specific Independent Study 9	2	
CSIS6132011	Elective Course for Specific Independent Study 10	2	
CSIS6133011	Elective Course for Specific Independent Study 11	2	
CSIS6134011	Elective Course for Specific Independent Study 12	2	
CSIS6135011	Elective Course for Specific Independent Study 13	2	
CSIS6136011	Elective Course for Specific Independent Study 14	2	

Code	Course Name	SCU	Total
CSIS6137011	Elective Course for Specific Independent Study 15	2	
CSIS6138011	Elective Course for Specific Independent Study 16	3	
CSIS6139011	Elective Course for Specific Independent Study 17	3	

**) For students who take BINUS specific independent study courses, they should take the first 4 courses on the list above (20 credits). Meanwhile, electives courses 1 to 17 are transferred courses for students who take specific independent study outside BINUS University. Transferred courses will be transferred based on credit transfer policies on study program with total of 20 credits.*

The Table of Prerequisite for Business Engineering

Course		SCU	Sem.	Prerequisite Course		SCU	Sem.
BSEN6003011	Final Project	6	8	SCIE6031011	Physics I	4	1
				SCIE6037011	Biology	2	1
				MATH6098011	Calculus I	4	1
				ISYE6199011	System Engineering & Analysis	2	1
				ECON6103011	Introduction to Economics	2	1
				MGMT6452011	Marketing Management	2	1
				COSC6107011	Foundations of Programming and Cloud Computing	2	1
				MATH6100011	Calculus II	4	2
				MATH6175011	Chemistry	3	2
				SCIE6060011	Physics II	4/1	2
				STAT6108011	Probability Theory	2	2
				MATH6108011	Linear and Discrete Mathematics	4	3
				STAT6183011	Applied Statistics	2	3
				MATH6107011	Calculus III	4	3
				ISYE6197011	Human-Integrated Systems	2/1	3
				ISYE6110011	Engineering Economy	2	3
				ISYS6712011	Database Management Systems	2	3
				STAT6184011	Stochastic Process	2	4
				ISYE6198011	Deterministic Optimization	3	4
				ISYE6201011	Quality Engineering	3	4
				ISYE6105011	Leadership and Organizational Behavior	2	4
				PSYC6212011	General Psychology	2	4
				BSEN6001011	Data Visualization	2	4

Course		SCU	Sem.	Prerequisite Course		SCU	Sem.
				ISYS6711011	Management Information Systems	2	4
				ISYE6313011	Facility Planning and Safety Engineering	4	5
				ISYE6203011	Production & Operation Analysis	3/1	5
				ISYE6204011	Systems Simulation	3	5
				ISYE6340011	Decision Making Under Uncertainty	2	5
				ISYE6341011	Network Flow in Transportation and Logistics	2	5
				BSEN6002011	Data Mining & Analysis	2/1	5
				ISYE6243011	Financial Engineering	2/1	5

Student should pass all of these quality controlled courses as listed below:

No	Course Code	Course Name	Minimal Grade
1.	CHAR6016011	Character Building: Pancasila	B