

## Computer Engineering

### Introduction

The Computer Engineering (CEN) Study Program was established in September 1987 under the Faculty of Computer Studies and it has been under the Faculty of Engineering BINUS UNIVERSITY since 2011. The CEN Study Program is accredited “UNGGUL” by the National Board of Higher Education (BAN-PT) and also accredited internationally by the Engineering Accreditation Commission of ABET and IABEE. The CEN Study Program has various alumni who have gone on to take part in various domains of the business industry. The CEN Study Program was founded to meet the demand for knowledge about computer systems encompassing computer hardware, software, and computer networks. The Institute of Electrical & Electronic Engineers (IEEE) and the Association for Computing Machinery (ACM), well-established and world-famous organizations, use the following definition: "Computer Engineering embodies the science and the technology of design, construction, implementation and maintenance of the electronics and the software components of modern computing systems and computer-controlled equipment," and its graduates stated: "Computer Engineers are solidly grounded in the theories and principles of computing, mathematics, and engineering; and apply these theoretical principles to design electronic circuits, software, networks, and computerized equipment and instruments to solve problems in diverse application domains."

Hence, graduates of the CEN Study Program will enjoy the knowledge of computer software and intelligent devices. This will allow graduates to contribute to any application wherever computers are used. The development of Information Technology and the need for experienced computer systems professionals are behind the innovative CEN Program. Currently, the CEN Study Program covers expertise in understanding to build completed computer system solution that consists of electronics and software, ranging from intelligent and embedded systems to network infrastructure.

### Vision

A world class Computer Engineering study program that focuses on the development of smart systems and continuously contributes to fostering and empowering society for the benefit of mankind.

### Mission

The mission of Computer Engineering Department is to contribute to the global community through the provision of world-class education by:

1. Educating BINUSIAN to meet global standards.
2. Conducting high-impact research to solve nation's problems.
3. Providing a vibrant environment for teaching and research.
4. Fostering BINUSIAN as a lifelong learner in order to adapt to rapid changes.
5. Empowering BINUSIAN to use their knowledge to serve and build the nation.

### Program Objectives

The objectives of the program are:

1. Our graduates excel in methodological and computational skills to solve problems creatively within their professional and communities.
2. Our graduates can lead the team and be professionally responsible to benefit the organizations, society, and nation.
3. Our graduates sustainably update their knowledge by engaging in life-long learning to adapt to rapidly changing work environments and to meet evolving global requirements.

## Student Outcomes

After completing the study, graduates are:

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

## Prospective Career of the Graduates

At the career level, computer engineering offers two principle paths – hardware and software engineering – that support multiple subspecialties or areas of concentration, such as:

- Embedded & Intelligence System
- Applied Networking
- Internet of Things
- Cyber security
- Cloud Technology
- Machine Learning
- Automation

## Curriculum

The Computer Engineering curriculum is developed based on the IEEE-ACM international curriculum as well as the APTIKOM national curriculum. Both are curricula developed by professional engineers and educators in their fields who are members of a professional association. Concerning the two curriculums above, the curriculum used by the Computer Engineering Study Program can produce graduates who can answer local and global challenges.

The curriculum structure of the Computer Engineering Study Program consists of five parts. The first part is mathematics and basic science composed of 31 credits. The second part is engineering courses consisting of 55 credits including 10 credits of streaming or free electives courses or minor programs and 2 credits of technical electives. The third part is the final project consisting of 6 credits, and the last part is the university courses consisting of 54 credits. 3 + 1 enrichment program is in the university courses part that expects the students to face real computer engineering problems that exist in the area of research, industry, community development, entrepreneurship, micro-credential and fast track.

**Course Structure**

Sem	Course		SCU	Total
1	CHAR6013010	Character Building: Pancasila	2	20
	SCIE6049010	Physics I	4/1	
	MATH6136010	Calculus I	4	
	MATH6197010	Linear Algebra	3	
	MATH6196010	Chemistry	2	
	COMP6875010	Physical Computing & Algorithm <sup>1&amp;2</sup>	4	
	<b>Foreign Language Courses</b>		0	
2	CHAR6014010	Character Building: Kewarganegaraan	2	20
	SCIE6050010	Physics II ( <b>AOL</b> )	4/1	
	MATH6139010	Calculus II ( <b>AOL</b> )	4	
	CPEN6219010	Circuit & Electronics <sup>1&amp;2</sup> ( <b>AOL</b> )	4/1	
	COSC6090010	Object Oriented Programming	2	
	COSC6011010	Foundations of Artificial Intelligence	2	
	<b>Foreign Language Courses</b>		0	
3	MATH6182010	Discrete Mathematics	4	20
	STAT6151010	Probability and Statistic	4	
	CPEN6260010	Computer Organization and Architecture <sup>1&amp;2</sup>	2	
	CPEN6265010	Digital System <sup>1&amp;2</sup> ( <b>AOL</b> )	4/1	
	CPEN6261010	Microcontroller <sup>1&amp;2</sup> ( <b>AOL</b> ) ( <b>AIE</b> )	2/1	
	LANG6027010	Indonesian	2	
	<b>Foreign Language Courses</b>		0	
4	CHAR6015010	Character Building: Agama	2	19
	CPEN6254010	IOT Design & Application <sup>1&amp;2</sup> ( <b>AOL</b> )	4	
	CPEN6220010	Computer Networks & Information Security <sup>1&amp;2</sup>	4/1	
	CPEN6222010	Mobile Application Development for Engineering <sup>1&amp;2</sup> ( <b>AOL</b> ) ( <b>AIE</b> )	2	
	CPEN6253010	Linux Operating Systems	2	
	ENPR6311001	Creativity and Innovation	2	
	<b>Technical Elective3</b>			
	COMP6876010	UI/UX Design	2	
	COMP6959010	Database Design	2	
	<b>Foreign Language Courses</b>		0	
5	CPEN6251010	System & Project Engineering <sup>1&amp;2</sup> ( <b>AOL</b> )	4	21
	CPEN6083010	Digital Signal Processing <sup>1</sup>	2/1	
	CPEN6262010	Parallel Processing	2	
	ENPR6312001	Venture Creation	2	
	<b>Stream: Intelligent Autonomous System</b>			
	CPEN6236010	PLC Programming for Industrial Automation <sup>1&amp;2</sup>	2	
	COSC6091010	Machine Learning	4	
	CPEN6263010	Intelligent Robotics	4	
	<b>Stream: Applied Networking</b>			

Sem	Course		SCU	Total
	CPEN6227010	Advanced Computer Network <sup>1&amp;2</sup>	4	
	CPEN6228010	Applied Network Security <sup>1</sup>	4	
	CPEN6232010	Cloud Technology Practice <sup>1</sup>	2	
	<b>Stream: Embedded System</b>			
	CPEN6126010	Cross Platform Application Development <sup>1&amp;2</sup>	4	
	CPEN6264010	Advanced Logic Design	2	
	COSC6091010	Machine Learning	4	
	<b>Minor Program</b>		10	
	<b>Free Electives</b>		10	
6	<b>Enrichment Program I</b>		20	20
7	<b>Enrichment Program II</b>		20	20
8	CPEN6241010	Pre-Thesis	2	6
	CPEN6242010	Thesis	4	
	CPEN6255010	Thesis	6	
			<b>Total Credits 146 SCU</b>	

<sup>1)</sup> This course is delivered in English

<sup>2)</sup> Global Learning System course

<sup>3)</sup> Students should choose 2 credits from the list of technical electives

-) **AOL** - Assurance of Learning Process System

-) **AIE** - Artificial Intelligence Embedded Course

#### Streaming/Free Electives:

-) For 5<sup>th</sup> Semester: Students are required to choose Streaming or Minor or Free Electives. For Free Electives, students are required to choose from the list of Free Electives in Appendix.

#### Foreign Language Courses:

Foreign language courses are personalized courses that can be taken by the students according to their own pace from semester 1 until semester 4 or before they take enrichment. The courses are available at BINUSMAYA – Beelingua.

The following are the provisions of the courses that must be taken by students:

Foreign Language Courses		SCU
ENGL6253010	English for Frontrunners	0
ENGL6254010	English for Independent Users	0
ENGL6255010	English for Professionals	0
JAPN6190010	Basic Japanese Language	0
CHIN6163010	Basic Chinese Language	0

\*) This course is optional for students

- Students with Beelingua Placement Test score less than 60 are required to take English for Frontrunners and English for Independent Users.
- Students with Beelingua Placement Test score between 60 and 99 are required to take English for Independent Users and English for Professionals.
- Students with Beelingua Placement Test score greater than 99 are required to take English for Professionals. Additionally, students may choose to take either Basic Japanese Language or Basic Chinese Language.
- Students are required to pass the foreign language courses before they take enrichment.
- Students can see the requirements to pass the foreign language courses at BINUSMAYA – Beelingua.

**Pre-thesis (2 SCU) & Thesis (4 SCU)** can be taken in the 6<sup>th</sup> and/or 7<sup>th</sup> semester by the students who meet the requirements from the Study Program/Program

### Minor Scheme

Minor Program	Semester 5
<b>Minor @ Binus Kemanggisian</b>	
Blockchain Technology and Business	-
Creative Digital Storytelling	V
Cross Cultural Communication	V
Data Analytics	V
Digital Banking	-
Digital Ecosystem	V
English for Business Professionals	V
Event Business and Entertainment	V
Human Capital in Digital Workplace	-
Interactive & Users Experience Design	V
Robotic Process Automation	V
Sustainable Development	-
<b>Minor @ Binus Alam Sutera</b>	
Digital Transformation	V
<b>Minor @ Binus Bekasi</b>	
Culinary	V
Korean Culture and Creativity	V
<b>Minor @ Binus Malang</b>	
Chinese for Career Pathways	V
English for Business Professionals	V
Digital Technopreneur	-
<b>Minor @ Binus Bandung</b>	
DesignPreneur	-
<b>Minor @ Binus Semarang</b>	
Content Creation	V
Immersive Journey to Japanese Language and Culture	V
Metaverse in Business	V

The minor programs can change anytime based on the trends of knowledge and industry each year. Students will receive information about the updated minor programs during the registration period.

## 1. Minor Program: Creative Digital Storytelling

### Introduction

Digital storytelling, by definition, is the process of telling a story using video, images, audio, music, geospatial applications, and any other digital media. Thus, this minor introduces the concept and skills in producing and communicating videos, images, and texts through English. It is interdisciplinary in its nature and relies heavily on critical and analytical thinking. It also aims to familiarize students with the technology/ tools needed to adapt a literary work to another form or vice versa. It is the minor that blend perspectives of arts with humanities to facilitate new interpretation of literary works.

### Career Options

Social Media Content Creator; Digital Storyteller; Brand Designer; Digital Storytelling News Editor; Social Media Specialist; Digital Associate; Video Editor; Content Creator; Content Creator; Scriptwriter; Fiction writers; Non-Fiction Writers; Copywriter; Social Media Specialist.

### Course Distribution

#### Fundamental Courses

Course	SCU
ENGL6274024 Approaches in Multimodal Storytelling	2
DSIN6033007 Visual Storytelling	2
ENGL6275024 Storytelling for Business	2
FILM6118009 Script Development & Pitching	4
<b>Total SCU</b>	<b>10</b>

### Additional Information

None

## 2. Minor Program: Cross Cultural Communication

### Introduction

This minor program equips students with the ability to communicate using languages and understanding cultures of foreign parties. In addition, this minor program enables students to apply intercultural awareness through both Indonesian and foreign languages and cultures.

### Career Options

Language specialist, language localization specialist, translator, interpreter, mobility consultant/staff.

### Course Distribution

#### Fundamental Courses

Course	SCU
CHIN6132026 Chinese Conversation in Daily Activities	4
COMM6502019 Communication in Diversity	2
BUSS6170025 Asian Business Ethics	4
<b>Total SCU</b>	<b>10</b>

### Additional Information

None

## 3. Minor Program: Data Analytics

### Introduction

The Data Analytics minor program provides insight into acquisitions and analysis of data in organizations by using critical thinking from multiple strategic perspectives, including consumer behavior communicated in the form of visualizations/models that can support retrieval decision.

### Career Options

Data Analyst, Marketing Analyst.

### Course Distribution

#### Fundamental Courses

Course	SCU
ISYS6680003 Introduction to Data Analytics	2
ISYS6681003 Data Management & Descriptive Analytics	4
STAT6198049 Statistical for Decision Making	4
<b>Total SCU</b>	<b>10</b>

### Additional Information

None

## 4. Minor Program: Digital Ecosystem

### Introduction

To face challenges in the era of technological disruption and the wave of the 4.0 industrial revolutions, this minor program offers foundational knowledge about the digital ecosystem in the 4.0 industrial revolutions. Through this minor program, students will be able to develop fundamental knowledge about main pillars of the digital ecosystem, such as informatics, business, and creative design. Students will also be able to combine the knowledge they gain from their respective majors with information technology to develop real solutions for society.

### Career Options

Chief technology officer, digital business strategy expert/consultant, digital solution architect, digital business strategy manager, digital operations manager.

### Course Distribution

#### Fundamental Courses

Course	SCU
COMP6683001 Introduction to Artificial Intelligence	2/2
ISYS6549003 Digital Innovation	4
COMP6937001 Current Trends in Technology	2
<b>Total SCU</b>	<b>10</b>

### Additional Information

None

## 5. Minor Program: English for Business Professionals

### Introduction

This minor focuses on students who are interested in English in the business context. Students will learn about leadership and management, as well as language innovations in marketing and advertising. There will also be discussions on business communication issues.

### Career Options

Manager, Business practitioner, Entrepreneur, Professional employee.

### Course Distribution

#### Fundamental Courses

Course		SCU
ENGL6154024	English for Business Communications	4
MKTG6112024	Language Innovations in Marketing and Advertising	2
ENGL6244024	Social Media Broadcasting	4
<b>Total SCU</b>		<b>10</b>

### Additional Information

None

## 6. Minor Program: Event Business and Entertainment

### Introduction

This minor program provides practical and managerial skills, as well as knowledge of business in MICE (Meeting, Incentive, Convention, Exhibition) event, sport event, and festival, enabling students to plan and conduct a successful event.

### Career Options

Professional event organizer, Professional Conference Organizer, Even Coordinator, Convention Services Supervisor, Venue Supervisor, Entertainment Supervisor, Event Promotor, Events Planner, Sporting Event Organizer, Catering Coordinator.

### Course Distribution

#### Fundamental Courses

Course		SCU
HTMN6151021	Event Marketing Management	2
HTMN6152021	Catering Management	4
TRSM6232022	MICE (Meeting, Incentive, Convention, Exhibition) Management	4
<b>Total SCU</b>		<b>10</b>

### Additional Information

None

## 7. Minor Program: Interactive & Users Experience Design

### Introduction

In today's digital era, people are competing to produce the best digital products that suit the users' needs. How can we make this happen? Minor Interactive & User Experience (UX) Design is the answer. In this Minor program, students will learn about the basics of UX starting from finding, designing, and building a digital product that is in accordance with a good UX concept to ensure that the digital products produced have adopted the UX theory. In



this minor program, students will study UX from 3 (three) main pillars of UX, namely Information Systems, Psychology, and Design through 6 (six) subjects that can be selected.

### Career Options

UX Researcher, UX Designer, Usability Analyst, Information Architect, Interaction Designer, Visual Designer, Content Strategies

### Course Distribution

#### Fundamental Courses

Course	SCU
ISYS6553003 User-Centered Research and Evaluation	4
PSYC6176027 Psychology and User Experience	4
DSIN6003007 Fundamental of Interface Design	2
<b>Total SCU</b>	<b>10</b>

### Additional Information

None

## 8. Minor Program: Robotic Process Automation

### Introduction

The Robotic Process Automation minor program provides an understanding of the concept of Robotic Process Automation (RPA) in automating repetitive processes, as well as providing an understanding of how the RPA development process involving the concept of Artificial Intelligence.

### Career Options

RPA Developer, RPA Architect, RPA Business Analyst, System Analyst, Corporate Information Systems Designer, Technopreneur, IS Project Manager, IT/IS Consultant.

### Course Distribution

#### Fundamental Courses

Course	SCU
COMP6857001 Basic Programming for Automation	2
COMP6858001 RPA Concept & Design	2
ISYS6684003 RPA Developer Fundamental	4
ISYS6687003 Business Process Improvement	2
<b>Total SCU</b>	<b>10</b>

### Additional Information

None

## 9. Minor Program: Digital Transformation

### Introduction

Digital Transformation provides knowledge on how information technology can be a competitive advantage in business processes. In this minor program, students will learn about innovation in business processes, data management, and strategies that can support companies to become leaders in the digital era.

### Career Options

Business Analyst, System Analyst, Corporate Information Systems Designer, Database Administrator, Database Designer, Technopreneur, IS Project Manager, IT/IS Consultant and Auditor, Social Media professional, and Marketing Analyst.

### Course Distribution

#### Fundamental Courses

Course	SCU
ISYS6559003 Business Models and Technology Innovation	4
ISYS6557003 Business Data Management	4
MGMT6484005 Digital Strategy	2
<b>Total SCU</b>	<b>10</b>

#### Additional Information

None

## 10. Minor Program: Culinary

### Introduction

The Culinary Minor Program provides learning that focuses on Culinary, Pastry & Bakery field. The curriculum design is more of practicums, which aim to make students have the competencies required in the fields of Food Production, Pastry & Bakery and Authentic Indonesian Cuisine.

### Career Options

Entrepreneur in the field of Culinary (Resto, Café, Catering Business), Chef, Restaurant Owner/Manager.

### Course Distribution

#### Fundamental Courses

Course	SCU
HTMN6108021 Food and Beverage Management	2
HTMN6008021 Kitchen Operation	4
HTMN6128021 Pastry and Bakery Operation	4
<b>Total SCU</b>	<b>10</b>

*SCU for HTMN6008021, HTMN6128021 are practical*

#### Additional Information

None

## 11. Minor Program: Korean Culture and Creativity

### Introduction

This minor program provides knowledge and experience in Korean Performance and Culture. The courses will cover pop art, culture, cuisine, film, drama, music, and language. Students who have international experience, especially in Korea, will have a wide range of employment opportunities.

### Career Options

Content Creator, Performer, Creative Marketer, Event Organizer, Foodpreneur, and Advertiser working in a Korean environment.

### Course Distribution

#### Fundamental Courses

Course	SCU
HTMN6163021 Korean Cuisine and Culinary Arts	4
COMM6718019 Korean Language and Media	4
FILM6134009 Hallyu Creative Content	2
<b>Total SCU</b>	<b>10</b>

### Additional Information

None

## 12. Minor Program: Chinese for Career Pathways

### Introduction

This minor program offers a variety of courses customized to industry needs for Binus non-Chinese Literature students. With this minor program, students who do not major in Mandarin can still experience the benefits of mastering basic Mandarin, which is currently required by industries such as Hospitality, Chinese Companies, Management Banking, and Communication skills.

### Career Options

Business Administration, Translation and Interpretation, International Relations and Diplomacy, Tourism and Hospitality, Marketing and Communications.

### Course Distribution

#### Fundamental Courses

Course	SCU
CHIN6196026 Mandarin for Future Career	4
CHIN6197026 Easy Way to HSK 2 Preparation	4
CHIN6198026 Exploring Modern Chinese Culture	2
<b>Total SCU</b>	<b>10</b>

### Additional Information

Open a maximum of 2 classes per batch per semester, with each class accommodating up to 30 students.

### 13. Minor Program: Content Creation

#### Introduction

You've probably heard it by now: Content is king. But why? Those days Consumers are going online, marketing has gone digital, and content creation is more important now than ever. Content creation encapsulates copywriting, design, production and other media that provide value and connect you to your target audience. Matching search intent and providing value (to the consumer and brand) is the foundation of successful content creation. Content creators produce work on a variety of platforms including social media, blogs, podcasts, video platforms, case studies, white papers, infographics and more.

#### Career Options

Content Creator, Influencer, Social media Specialist.

#### Course Distribution

##### Fundamental Courses

Course		SCU
FILM6105009	Filmmaking Fundamental	4
MKTG6336055	Content Marketing Analytics	4
DSIN6042053	Photography for Creators	2
<b>Total SCU</b>		<b>10</b>

#### Additional Information

None

### 14. Minor Program: Immersive Journey to Japanese Language and Culture

#### Introduction

Immersive Journey to Japanese Language and Culture Minor program is focused on the basic learning of the Japanese language (equivalent to N5 or corresponding to CEFR levels A1 to A2). This includes an understanding of Japanese characters (Hiragana, Katakana, basic Kanji) and grammar. Additionally, it encompasses the comprehension of reading and listening skills in Japanese, covering vocabulary, phrases, and simple sentences. This program also includes the development of basic writing and speaking skills in Japanese.

Upon completion of this minor, students will be prepared to read Japanese written in Hiragana, Katakana, and basic Kanji, as well as understand everyday conversations in the Japanese language. Subsequently, students will be equipped to engage in basic-level Japanese speaking and writing.

The outcomes of this minor, built upon a foundation of basic Japanese language proficiency, will benefit students who plan to study abroad in Japan, travel to Japan, or pursue interests and hobbies related to Japan.

#### Career Options

Working in Japan, either in Indonesia or Japan, in the following fields as Consultant, Front Office, Tour Guide, Secretary, Finance, HR, Industry Creative (Content creator, dubber, cosplayer).

## Course Distribution

### Fundamental Courses

Course		SCU
JAPN6221025	Essential Japanese Grammar ( <i>Yoku Tsukaeru Bunpou</i> )	4
JAPN6222025	Survival Japanese in Various Situations ( <i>Nihon E Ikou, Yasashii Kaiwa De</i> )	4
JAPN6223025	Ideas and Images of Japan ( <i>Nihon Jijou</i> )	2
<b>Total SCU</b>		<b>10</b>

### Additional Information

None

## 15. Minor Program: Metaverse in Business

### Introduction

The objective of the Metaverse in Business minor program in general is to offer a new learning experience in business innovation in the digital world. After completing the Metaverse in Business minor program, students will be able to design Virtual Reality applications so that they are able to present users in a virtual world, as if they are in another place, and develop Augmented Reality applications to present virtual effects in the real world.

### Career Options

AR/VR Designer, AR/VR Developer, AR/VR Engineer, AR/VR Researcher.

## Course Distribution

### Fundamental Courses

Course		SCU
ISYS6777052	Business Model	2
COMP6889051	Virtual Reality	4
COMP6890051	Augmented reality	4
<b>Total SCU</b>		<b>10</b>

### Additional Information

None

**Appendix: Free Electives (5<sup>th</sup> Semester)**

No	Course Owner Department	Course Code	Course Name	SCU	Semester
1	Statistics	STAT6157049	Data Mining and Visualization	2	5
2	Psychology	PSYC6191027	E-Learning Psychology	4	5
3	Primary Teacher Education	EDUC6108030	Coding for Children	2	5
4	Primary Teacher Education	EDUC6109030	Technology Literacy	2	5
5	Primary Teacher Education	EDUC6098030	Technology for Adaptive Learning	4	5
6	Marketing Communication	COMM6624019	Digital Creative Content	2/2	5
7	Marketing Communication	COMM6410019	Digital Broadcasting Production	2/2	5
8	Marketing Communication	COMM6637019	Brand Activation	2/2	5
9	Marketing Communication	COMM6638019	Social Media Planning & Engagement	2/2	5
10	Information Systems	ISYS6596003	User Experience Research and Design	4/2	5
11	Information Systems	ISYS6893003	Information Systems Analysis and Design	4/2	5
12	Industrial Engineering	ISYE6167011	Decision Support System	2	5
13	Industrial Engineering	ISYE6168011	Financial Engineering	2	5
14	Industrial Engineering	ISYE6130011	Project Management	2	5
15	Industrial Engineering	ISYE6169011	Maintenance Management Systems	2	5
16	Industrial Engineering	ISYE6170011	Sustainable Engineering Systems	2	5
17	Global Business Marketing	MKTG6321005	Marketing Data Analytics	4	5
18	Global Business Marketing	MKTG6631005	Marketing Research	3/1	5
19	Global Business Marketing	MGMT6358005	Managing Business Information	2/2	5
20	Game Application and Technology	GAME6085001	Object Oriented Game Programming	2	5
21	Finance	FINC6073020	Lab Trading Simulation	2	5
22	English Literature	SOCS6021024	Social and Digital Media Writing	2	5
23	English Literature	ENGL6244024	Social Media Broadcasting	4	5
24	Data Science	DTSC6014001	Machine Learning	2	5
25	Cyber Security	COMP6542001	Computer Security Fundamental	2	5
26	Creative Advertising	DSGN6661007	Photography	4	5
27	Computer Science	COMP6800001	Human and Computer Interaction	2/1	5
28	Computer Science	COMP6590001	Geographical Information System	2/2	5
29	Computer Engineering	CPEN6126010	Cross Platform Application Development	4	5
30	Computer Engineering	CPEN6232010	Cloud Technology Practice	2	5
31	Computer Engineering	CPEN6236010	PLC Programming for Industrial Automation	2	5
32	Civil Engineering	COMP6046013	Computer Applications in Construction Management	2	5
33	Business Management	MGMT6400005	Supply Chain Strategy	2	5
34	Business Management	MGMT6459005	Retail Management	4	5

No	Course Owner Department	Course Code	Course Name	SCU	Semester
35	Business Management	MGMT6460005	Retail Supply Chain Management	2	5
36	Business Management	MKTG6324005	Retail Marketing Management	2	5
37	Business Law	LAWS6017028	Intellectual Property Rights	4	5
38	Business Law	LAWS6110028	Cyber Law	2	5
39	Business Law	LAWS6159028	Legal Aspect in Business	2	5
40	Business Law	LAWS6170028	Investment Law	2	5
41	Business Law	LAWS6171028	Business Competition & Consumer Protection Law	2	5
42	Japanese Literature	JAPN6111025	Introductory Japanese I	4	5
43	Business Information Technology	ISYS6579003	Knowledge-Based AI: Cognitive Systems	4	5
44	Business Creation	ENPR6142005	Digital Business Transformation	4	5
45	Business Creation	ENPR6106005	Product Design & Branding	2	5
46	Architecture	ARCH6145014	Property Assessment	2	5
47	Architecture	ARCH6146014	Interior Architecture	4	5
48	Architecture	ARCH6128014	Multimedia in Design Presentation	4	5
49	Biotechnology	BTEC6018056	Bioinformatics II	2/2	5
50	Chinese Literature	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	5
51	Chinese Literature	CHIN6158026	Chinese Business in Daily Communication	4	5

**Enrichment Program I (6<sup>th</sup> Semester) & Enrichment Program II (7<sup>th</sup> 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	FS	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		

**Note:**

IN	: Certified Internship	SA	: Certified Study Abroad
RS	: Certified Research	IS	: Certified Specific Independent Study
EN	: Certified Entrepreneurship	FS	: Further Study
CD	: Certified Community Development	etc	: Study Program Special Purposes

**Description:**

Student will take one of enrichment program tracks

**Certified Internship Track**

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			
CPEN6129010	Computer Engineering Practical Experience I: For Industry Practice	8	20
CPEN6243010	Computer Engineering Technical Analysis I: For Industry Practice	8	
CPEN6245010	Computer Engineering EES Experience I: For Industry Practice	4	
<b>Enrichment Program II</b>			
CPEN6133010	Computer Engineering Practical Experience II: For Industry Practice	8	20
CPEN6244010	Computer Engineering Technical Analysis II: For Industry Practice	8	
CPEN6136010	Computer Engineering EES Experience II: For Industry Practice	4	



**Certified Research Track**

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			
RSCH6139010	Computer Engineering Practical Experience I: For Research Practice	8	20
RSCH6537010	Computer Engineering Technical Analysis I: For Research Practice	8	
RSCH6539010	Computer Engineering EES Experience I: For Research Practice	4	
<b>Enrichment Program II</b>			
RSCH6142010	Computer Engineering Practical Experience II: For Research Practice	8	20
RSCH6538010	Computer Engineering Technical Analysis II: For Research Practice	8	
RSCH6144010	Computer Engineering EES Experience II: For Research Practice	4	

**Certified Entrepreneurship Track**

Code	Course Name	SCU	Total
<b>Enrichment Program II</b>			
ENTR6673010	Computer Engineering Practical Experience I: For Entrepreneurship - Product Launching	8	20
ENTR6674010	Computer Engineering Technical Analysis I: For Entrepreneurship - Business Development	8	
ENTR6675010	Computer Engineering EES Experience I: For Entrepreneurship - EES in New Business II	4	

**Certified Community Development Track**

Code	Course Name	SCU	Total
<b>Enrichment Program II</b>			
CMDV6062010	Computer Engineering Practical Experience II: For Community Development Project	8	20
CMDV6317010	Computer Engineering Technical Analysis II: For Community Development Project	8	
CMDV6064010	Computer Engineering EES Experience II: For Community Development Project	4	

**Certified Study Abroad Track**

Code	Course Name	SCU	Total
<b>Elective courses list for study abroad*</b>			
<b>Enrichment Program II</b>			
GLOB6017010	Elective Course for Study Abroad 13	4	20
GLOB6018010	Elective Course for Study Abroad 14	4	
GLOB6019010	Elective Course for Study Abroad 15	4	
GLOB6020010	Elective Course for Study Abroad 16	4	
GLOB6021010	Elective Course for Study Abroad 17	2	
GLOB6022010	Elective Course for Study Abroad 18	2	
GLOB6023010	Elective Course for Study Abroad 19	2	
GLOB6024010	Elective Course for Study Abroad 20	2	

Code	Course Name	SCU	Total
GLOB6025010	Elective Course for Study Abroad 21	2	
GLOB6026010	Elective Course for Study Abroad 22	2	
GLOB6027010	Elective Course for Study Abroad 23	2	
GLOB6028010	Elective Course for Study Abroad 24	2	
GLOB6041010	Elective Course for Study Abroad 25	3	
GLOB6252010	Elective Course for Study Abroad 30	3	
GLOB6253010	Elective Course for Study Abroad 31	4	

\*) Transferred courses will be transferred based on credit transfer policies on study program with total of 20 credits.

### Certified Specific Independent Study

Code	Course Name	SCU	Total
<b>Elective courses list for certified specific independent study*</b>			20
<b>Enrichment Program II</b>			
CSIS6001010	Course Certification	3	
CSIS6002010	Technical Skill Enrichment	4	
CSIS6003010	Industrial Project	9	
CSIS6004010	Soft Skill Enrichment	4	
CSIS6005010	Elective Course for Specific Independent Study 1	8	
CSIS6006010	Elective Course for Specific Independent Study 2	8	
CSIS6007010	Elective Course for Specific Independent Study 3	6	
CSIS6008010	Elective Course for Specific Independent Study 4	6	
CSIS6009010	Elective Course for Specific Independent Study 5	6	
CSIS6010010	Elective Course for Specific Independent Study 6	5	
CSIS6011010	Elective Course for Specific Independent Study 7	5	
CSIS6012010	Elective Course for Specific Independent Study 8	5	
CSIS6013010	Elective Course for Specific Independent Study 9	5	
CSIS6014010	Elective Course for Specific Independent Study 10	4	
CSIS6015010	Elective Course for Specific Independent Study 11	4	
CSIS6016010	Elective Course for Specific Independent Study 12	4	
CSIS6017010	Elective Course for Specific Independent Study 13	4	
CSIS6018010	Elective Course for Specific Independent Study 14	4	
CSIS6019010	Elective Course for Specific Independent Study 15	3	
CSIS6020010	Elective Course for Specific Independent Study 16	3	
CSIS6021010	Elective Course for Specific Independent Study 17	3	
CSIS6022010	Elective Course for Specific Independent Study 18	3	
CSIS6023010	Elective Course for Specific Independent Study 19	3	
CSIS6024010	Elective Course for Specific Independent Study 20	3	
CSIS6025010	Elective Course for Specific Independent Study 21	2	
CSIS6026010	Elective Course for Specific Independent Study 22	2	
CSIS6027010	Elective Course for Specific Independent Study 23	2	
CSIS6028010	Elective Course for Specific Independent Study 24	2	
CSIS6029010	Elective Course for Specific Independent Study 25	2	

Code	Course Name	SCU	Total
CSIS6030010	Elective Course for Specific Independent Study 26	2	
CSIS6031010	Elective Course for Specific Independent Study 27	2	
CSIS6032010	Elective Course for Specific Independent Study 28	2	
CSIS6033010	Elective Course for Specific Independent Study 29	1	
CSIS6034010	Elective Course for Specific Independent Study 30	1	
CSIS6035010	Elective Course for Specific Independent Study 31	1	
CSIS6036010	Elective Course for Specific Independent Study 32	1	

\*) For students who take BINUS certified specific independent study courses, they should take the first 4 courses on the list above (20 credits). Meanwhile, electives courses 1 to 32 are transferred courses for students who take certified specific independent study outside BINUS University. Transferred courses will be transferred based on credit transfer policies on study program with total of 20 credits.

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

No	Code	Course Name	Minimum Passing Grade
1	CHAR6013001	Character Building: Pancasila	B
2	COMP6875010	Physical Computing & Algorithm	C
3	CPEN6219010	Circuit & Electronics*	C
4	CPEN6265010	Digital System	C
5	CPEN6261010	Microcontroller*	C
6	CPEN6220010	Computer Networks & Information Security	C
7	CPEN6222010	Mobile Application Development for Engineering*	C
8	CPEN6254010	IOT Design & Application	C
9	ENPR6312001	Venture Creation	C

\*) Tutorial