

Computer Science

Introduction

In the new millennium and the global era, the role of information and automation in the various domains and activities of the business industry are becoming more important. The successes of the activities are determined by how computer science can support in managing the information. Information must be up-to-date, accurate and comprehensive to allow decision makers to determine the enterprise's strategy. Furthermore, automation can facilitate human activity, accelerate the pace of work and make it more effective and efficient, while also increasing productivity in various activities. The development of communication and computer technology has made it possible to get information that is rapid, exact, and accurate. It also increases the application of automation in various fields such as industry, business, office affairs and development of science and technology.

Computer Science Undergraduate Study Program Bina Nusantara University Malang is one of the Study Programs of School of Computer Science Bina Nusantara University Jakarta. This study program focuses on learning process in the field of computer science with a Sarjana Komputer (S.Kom.) Academic Degree. The learning process is managed within 4 years by the 2 + 1 + 1 Program. The learning process in the first to third semesters is carried out in Malang Campus, East Java. The students then have the opportunity to study at Bina Nusantara Jakarta campus for a year, in the fourth and fifth semesters as part of the Mobility Program. Students also have the opportunity to enrich their learning with various partners of Bina Nusantara University for one year in the sixth and seventh semesters through Enrichment Program. The Enrichment Program offers seven optional tracks: Certified Internship, Certified Entrepreneurship, Certified Research, Certified Community Development, Certified Study Abroad, Certified Specific Independent Study, and Further Study. On the last semester every student takes a thesis as final course and will be guided by Faculty Member at Bina Nusantara University Malang.

Computer Science Study Program at Bina Nusantara University @Malang campus emphasizes the processes, techniques, and tools that go into developing computer-based systems.

Vision

A world class study program by providing excellent educational experiences in computer science, fostering and empowering the society in building and serving the nation through digital technology and technopreneur.

Mission

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

1. Educating students to effectively apply their educational experiences in computer science to solve real-world problems through digital technology and technopreneur approach.
2. Preparing our graduates to develop exemplary soft skills & technical skills required as ICT professionals, leaders and entrepreneurs in global market.
3. Promoting high impact research that contributes to the nation in digital technology themes.
4. Fostering BINUSIAN as lifelong learners through self-enrichment.
5. Empowering BINUSIAN to continuously improve and society's quality of life through digital technology and technopreneur approach.

Program Objective

The objectives of the program are:

1. Graduates will become successful professionals in ICT fields;
2. Graduates will obtain employment in global companies or become entrepreneurs;
3. Graduates will obtain professional certification or continue their study to the postgraduate level

Student Outcomes

After completing the study, graduates are:

1. Able to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions
2. Able to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of computer science
3. Able to communicate effectively in a variety of professional contexts
4. Able to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. Able to function effectively as a member or leader of a team engaged in activities appropriate to computer science
6. Able to apply computer science theory and software development fundamentals to produce computing-based solutions

Prospective Career of the Graduates

After finishing the program, the graduate of Computer Science Program could follow a career as:

- | | |
|-----------------------------------|---|
| 1. Full Stack Developer | 7. Web Engineer/Developer |
| 2. Interactive Software Designer | 8. IT Support/Consultant |
| 3. Data Engineer & Analyst | 9. Database/Network Designer/Programmer |
| 4. Software Application Developer | 10. Multimedia Designer |
| 5. Software Engineer/Developer | 11. Game Designer/Developer |
| 6. System Analyst/Developer | 12. Academician |

Curriculum

The curriculum of the Computer Science Study Program has been developed in line with the National Curriculum. Also, the local content has been developed in line with the Computer Science Curriculum standard of ACM (Association for Computing Machinery), several local and foreign universities, and market trends, so that the graduates of the Computer Science are expected to be able to face competition at both a national and international level.

Generally, the subjects of the curriculum are divided into these following groups of subjects:

Mathematics Group (Science)

The objective of this group is to provide an understanding of mathematics as one of the principal foundations of computer science. Another objective is to give an understanding of scientific methodology (data collection, hypothesis, research, analysis) in problem solving.

Character Building Group (Professional Practices)

The objective of this group is to develop the personal strengths of the student and to provide him or her with a professional character, professionalism in their field, management skills, oral and written communication skills, understanding of business ethic, ability to work as a team, and to develop a "Binusian" Character.

Core Group

The objective of this group is to provide a grounding in Computer Science through practice as well as applied theory which is required by business both now and in the future. The subjects that are included in this group are programming, algorithm design and analysis, software engineering, database systems, computer graphics, multimedia technology, human and computer interaction, operation systems, computer architecture, and computer network.

Streaming

All campuses of Computer Science Undergraduate Study Program Bina Nusantara University have the same core courses to ensure the main competency standards in Computer Science. However, every student also has the opportunity to enrich into various streaming in the fourth and fifth semesters. There are 12 streaming (specialization) options for students of Computer Science Undergraduate Study Program Bina Nusantara University Malang, namely Digital Creative Technology, Immersive technology, Intelligent System, Database Technology, Network Technology, Network Security, Game Technology, Mobile Technology, Interactive Multimedia, Software Engineering, Data Science, and Internet of Things.

Streaming BINUS @Malang Campus

- **Digital Creative Technology:** Focus on smart software application development based on big data analytics regarding business innovation and digital transformation on Industry 4.0. era (**Digital Business Innovation and Transformation**).
- **Immersive Technology:** Focus on development of immersive technology-based solutions supported by AR (Augmented Reality), VR (Virtual Reality), and XR (Extended Reality) technologies.

Streaming BINUS @Greater Jakarta Campus

- **Intelligent System:** Focus on smart software development through complex algorithm based on Artificial Intelligence to solve problem.
- **Database Technology:** Focus on software development through database technology for business operation and business analytics and business intelligent.
- **Network Technology:** Focus on software development on computer network through computer network design and computer network programming.
- **Network Security:** Focus on secure software development through secure computer network design and secure computer network programming.
- **Game Technology:** Focus on interactive software development through game art, game design and game programming for entertainment and business solution.
- **Mobile Technology:** Focus on software development through *mobile* devices platform.
- **Interactive Multimedia:** Focus in exploring interactive multimedia applications based on computer programming, design tools, and software engine.
- **Software Engineering:** Focus on development of software through software architecture, various methodologies and software engineering equipment.
- **Data Science:** Focus on exploring the latest technologies and various tools in finding solutions and reaching conclusions based on Data.

Streaming BINUS @Bandung Campus

- **Internet of Things:** Focus on various techniques and implementation of IoT.

Course Structure

Se m	Code	Course Name	SCU	Total
1	CHAR6030002	Character Building: Pancasila	2	20
	MATH6118004	Discrete Mathematics	4	
	MATH6119004	Linear Algebra	2	
	COMP6764004	Basic Statistics	2	
	COMP6360004	Algorithm and Programming ²⁾	4/2	
	COMP6840004	Program Design Methods ¹⁾	2	
	LANG6117004	Indonesian	2	
	Foreign Language Courses ³⁾		0	
2	CHAR6031004	Character Building: Kewarganegaraan	2	20
	COMP6362004	Data Structures ^{1), 2)}	4/2	
	MATH6120004	Calculus	4	
	MATH6193004	Scientific Computing	2/1	
	COMP6851004	Human and Computer Interaction ²⁾	2/1	
	ENTR6519002	Entrepreneurship: Ideation	2	
	Foreign Language Courses ³⁾		0	
3	CHAR6032004	Character Building: Agama	2	21
	COMP6365004	Algorithm Design and Analysis ¹⁾	4	

CPEN6250004	Computer Networks	2/1	
SCIE6067004	Computational Physics	2/1	
COMP6852004	Database Technology ²⁾	2/1	
COMP6853004	Artificial Intelligence ²⁾	4	
COMP6854004	Object Oriented Programming ^{1), 2)}	2	
Foreign Language Courses ³⁾		0	
COMP6712004	Research Methodology in Computer Science ¹⁾	2	
SCIE6068004	Computational Biology	2/1	
COMP6855004	Software Engineering ²⁾	4	
COMP6955004	Database Design	2	
Streaming: Digital Creative Technology ⁴⁾			
COMP6679004	Web Programming ²⁾	4	
COSC6109004	Popular Programming Technology ¹⁾	4	
COSC6001004	User Experience	2	
Streaming: Immersive Technology ⁴⁾			
COSC6002004	User Experience for Digital Immersive Technology	2	
COSC6003004	Multimedia and 3D Modelling	2/2	
COSC6004004	3D Web Programming	2/2	
Streaming: Internet Of Things ⁵⁾			
COMP6849031	Embedded System	2/2	
COMP6850031	Multimedia & Mixed Reality	2/1	
MOBI6072031	Mobile Programming	2/1	
COMP6655031	Cyber Security in IoT	2	
4	Streaming: Intelligent System ⁶⁾		
COMP6885001	Natural Language Processing ^{1), 2)}	2/2	
COMP6577001	Machine Learning	4	
COMP6822001	Speech Recognition	2/2	
Streaming: Database Technology ⁶⁾			
COMP8129001	User Experience ^{1), 2)}	2/2	
COMP6823001	Multimedia System ²⁾	2	
COMP7094001	Multimedia Programming Foundation ¹⁾	2/2	
COMP7128001	Game Design	2	
Streaming: Network Technology ⁶⁾			
COMP6824001	Computer Security ¹⁾	2/2	
COMP6584001	Network and System Programming ^{1), 2)}	2/2	
COMP6827001	Linux System Administration and Security	2/2	
Streaming: Software Engineering ⁶⁾			
COMP6106001	Code Reengineering	4	
COMP6114001	Pattern Software Design	2/2	
COMP6884001	Agile Software Development ^{1), 2)}	4	
Streaming: Game Technology ⁶⁾			

- Streaming Mobile Technology: 18
- Streaming Game Technology, Network Security, Mobile and Game Technology: 19
- Streaming Data Science: 20
- Streaming Digital Creative Technology, Immersive Technology, Internet of Things, Intelligent System, Database technology, Interactive Multimedia, Network Technology, Software Engineering: 21
- Minor Program, Free Electives⁴ : 19
- Minor Program, Free Electives^{5,6)} :17

GAME6069001	Game Programming ^{1), 2)}	4	
GAME6082001	Game Animation ^{1), 2)}	2	
MOBI6006001	Mobile Community Solution ^{1), 2)}	2/2	
Streaming: Mobile Technology ⁶⁾			
COMP6823001	Multimedia Systems ²⁾	2	
MOBI6006001	Mobile Community Solution ^{1), 2)}	2/2	
MOBI6069001	Wearable Technology ^{1), 2)}	3	
Streaming: Data Science ⁶⁾			
DTSC6005001	Data Mining and Visualization ^{1), 2)}	2/1	
DTSC6009001	Survey and Sampling Methods	4	
DTSC6007001	Deep Learning	2	
DTSC6003001	Big Data Infrastructure and Technology ¹⁾	2	
Streaming: Network Security ⁶⁾			
COMP6842001	Server and Network Administration ^{1), 2)}	2	
COMP6549001	Software Security ^{1), 2)}	2	
COMP6844001	Mobile Penetration Testing ²⁾	2/2	
LAWS6110001	Cyber Law	2	
Streaming: Mobile And Game Technology ⁷⁾			
COMP6903051	Computer Vision	2/2	
COMP6904051	Natural Language Processing	2	
COMP6905051	Mobile and Game Development Capstone Project	4	
Foreign Language Courses ³⁾		0	
Minor Program ^{4), 5), 6)}		12	
Free Electives ⁶⁾		12	
5	COMP6390004	Compilation Techniques	4
	COMP6713004	Operating System	2
	ENTR6521002	Entrepreneurship: Market Validation	2
	Elective Course ⁸⁾		
	COMP6921031	Web Development	2
	COMP6922031	Cloud Computing	2
	Elective Course ⁹⁾		
	MOBI6059001	Mobile Programming	2
	COMP6586001	Embedded Systems	2
	COMP6226001	Competitive Programming ¹⁾	2
	COMP6681001	Web Programming	2
	Streaming: Digital Creative Technology ⁴⁾		
	COMP6678004	Big Data Analytics for Business	4
	MOBI6063004	Mobile Application Programming ²⁾	4
	COSC6005004	Agile Software Development	2
	Streaming: Immersive Technology ⁴⁾		
	COSC6006004	Augmented Reality Application Programming	2/2

- Streaming : Digital Creative Technology, Immersive Technology, Internet of Things, Intelligent System, Database Technology, Interactive Multimedia, Network Technology 18
- Streaming : Data Science 19
- Streaming : Game Technology, Network Security, Mobile and Game Technology 20
- Streaming : Mobile

COSC6007004	Virtual Reality Application Programming	2/2
COSC6008004	Immersive Technology Capstone Project	2
Streaming: Internet Of Things ⁵⁾		
COMP6757031	Computer vision in IoT	2/2
COMP6882031	IoT Development and Architecture	2/2
Elective Course		2
Streaming: Intelligent System ⁶⁾		
COMP7116001	Computer Vision ¹⁾	2/2
COMP6826001	Deep Learning	2/2
Elective Course		2
Streaming: Database Technology ⁶⁾		
COMP6590001	Geographical Information System ¹⁾	2/2
COMP6140001	Data Mining	2/2
Elective Course		2
Streaming: Interactive Multimedia ⁶⁾		
COMP6583001	Computer Graphics	2/2
COMP6589001	Game Design Programming ¹⁾	4
Elective Course		2
Streaming: Network Technology ⁶⁾		
COMP6827001	Linux System Administration and Security	2/2
COMP7142001	Popular Network Technology	2/2
Elective Course		2
Streaming: Software Engineering ⁶⁾		
COMP6122001	Framework Layer Architecture	2/2
COMP6115001	Object Oriented Analysis & Design ¹⁾	2/2
Elective Course		2
Streaming: Game Technology ⁶⁾		
GAME6093001	Serious Game & Gamification	2
GAME6084001	Game Development Capstone Project ^{1), 2)}	4
GAME6071001	3D Modeling for Games ^{1), 2)}	2
GAME6092001	Fundamental in Game Balancing	2
GAME6091001	Advanced Game Development	2
Streaming: Mobile Technology ⁶⁾		
MOB6026001	Mobile Cloud Computing ¹⁾	2/2
MOBI6009001	Mobile Multimedia Solution ²⁾	2/2
MOBI6068001	Web Design ^{1), 2)}	2
MOBI6070001	Embedded System and Internet of Things ^{1), 2)}	3
Streaming: Data Science ⁶⁾		
DTSC6010001	Bayesian Data Analysis	2
DTSC6006001	Machine Learning ^{1), 2)}	2/1
DTSC6002001	Data Management and Organization ¹⁾	2

 Technology 21
 ▪ Minor Program,
 Free Electives 16

	DTSC6008001	Text Mining	2	
	DTSC6004001	Data Security	2	
	Streaming: Network Security ⁶⁾			
	COMP6544001	Network Penetration Testing ²⁾	2/2	
	COMP6695001	Secure Programming ^{1), 2)}	2	
	COMP6843001	Reverse Engineering and Binary Exploitation	2	
	COMP6646001	Computer Forensic ^{1), 2)}	2	
	COMP6873001	Blockchain Fundamental	2	
	Streaming: Mobile And Game Technology ⁷⁾			
	COMP6897051	Game Design & Programming	2	
	COMP6898051	User Experience	2	
	COMP6899051	Machine Learning	2	
	COMP6900051	Mobile Embedded Systems	4	
	COMP6897051	Game Design & Programming	2	
	Minor Program		8	
	Free Electives ⁶⁾		8	
6	Enrichment Program I		20	20
7	Enrichment Program II		20	20
8	COMP6747004	Pre-Thesis	2	6
	COMP6748004	Thesis	4	
	COMP6872004	Thesis	6	
			Total Credits 146 SCU	

1) This course is delivered in English

2) Global Learning System course

3) Students will take foreign language courses according to BINUS University English proficiency test results. See foreign language courses appendix for the detail.

4) Conducted in BINUS@Malang

5) Conducted in BINUS@Bandung

6) Conducted in BINUS@Greater Jakarta

7) Conducted in BINUS@Semarang

*) Students choosing stream/minor in @Malang must take general course Database Design in semester 4. Students undertaking mobility (Jakarta/Bandung) are required to take a general course/FE (2 SCU) on the host campus in semester 5.

8) Students will choose 1 course (2 credits) from the list of elective courses who enrolled in Computer Science BINUS@Bandung in semester 5

9) Students will choose 1 course (2 credits) from the list of elective courses for Streaming Software Engineering, Intelligent Systems, Interactive Multimedia, Database Technology, Network Technology, Minor Program, Free Electives, and Multidisciplinary Stream at Jakarta in semester 5

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

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

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:

Group	Foreign Language Courses	SCU
MKB	ENGL6268002 English for Frontrunners	0
MKB	ENGL6269002 English for Independent Users	0
MKB	ENGL6267002 English for Professionals	0
MKB	JAPN6208002 Basic Japanese Language	0
MKB	CHIN6185002 Basic Chinese Language	0

1. Students with Binus University English Proficiency Test score less than 437 are required to take English for Frontrunners and English for Independent Users.
2. Students with Binus University English Proficiency Test score less than 520 are required to take English for Independent Users and English for Professionals.
3. Students with Binus University English Proficiency Test score equal to or greater than 520 are required to take English for Professionals and choose Basic Japanese Language or Basic Chinese Language.
4. Students are required to pass the foreign language courses before they take enrichment.
5. Students can see the requirements to pass the foreign language courses at BINUSMAYA – Beelingua.

Minor Scheme

Minor Program	Semester 4	Semester 5
Minor @ Binus Kemanggisian		
Digital Ecosystem	V	V
Human Capital in Digital Workplace	V	V
Sustainable Development	V	V
Cross Cultural Communication	V	V
Interactive & Users Experience Design	V	V
Data Analytics	V	V
Robotic Process Automation	V	V
Event Business and Entertainment	V	V
Creative Digital Storytelling	V	V
Digital Banking	V	V
Blockchain Technology and Business	V	V
Minor @ Binus Alam Sutera		
Digital Transformation	V	V
Minor @ Binus Bekasi		
Virtual Services Experience	V	V
Culinary	V	V
Minor @ Binus Malang		
Digital Technopreneur	V	V

Minor @ Binus Bandung		
DesignPreneur	V	V
Minor @ Binus Semarang		
Metaverse in Business	V	V
Content Creation	V	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: Digital Ecosystem

Fundamental Courses

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

Supporting Courses

Course		SCU
COMM6501019	Narative Development	4
DSGN6834007	Visual Identity	4
COMP6685001	Cyber Security for Business	2
Total SCU		10

2. Minor Program: Human Capital in Digital Workplace

Fundamental Courses

Course		SCU
PSYC6174027	Psychology in The Workplace	4
MGMT6349005	Digital Workplace Strategy	4
ISYS6551003	Digital Workplace and Technology	4
LAWS6157028	Legal Aspects in Digital Workplace	4
PSYC6175027	Human Resources Development	4
Total SCU		20

3. Minor Program: Sustainable Development

Fundamental Courses

Course		SCU
ISYE6154011	Sustainable Design and Manufacture	4
CPEN6217010	Digital for Sustainable Development	4
ARCH6119014	Introduction to Sustainable Development	2
Total SCU		10

Supporting Courses

Course		SCU
ISYE6155011	Occupational, Health, Safety, and Administration in Engineering	2
DSGN6835008	Engineering Material	4
CIVL6118013	Engineering Economic	4
Total SCU		10

4. Minor Program: Cross Cultural Communication
Fundamental Courses

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

Supporting Courses

Course		SCU
CHIN6134026	Chinese Conversation in Business Communication	4
LAWS6158028	Private International Law	2
INTR6135029	Comparative Politics	4
Total SCU		10

5. Minor Program: Interactive & Users Experience Design
Fundamental Courses

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

Supporting Courses

Course		SCU
ISYS6554003	Core Principles: Interactive Design	4
DSGN6837007	Digital Design Production	4
ISYS6556003	Information Architecture	2
Total SCU		10

6. Minor Program: Data Analytics
Fundamental Courses

Course		SCU
ISYS6680003	Introduction to Data Analytics	2
ISYS6681003	Data Management & Descriptive Analytics	4
STAT6198049	Statistical for Decision Making	4

Course	SCU
Total SCU	10

Supporting Courses

Course	SCU
ISYS6682003 Application of Predictive Analytics to Business Data	4
ISYS6683003 Prescriptive Analytics and Optimization	4
MKTG6312005 Digitalization of Markets and Consumption	2
Total SCU	10

7. Minor Program: Robotic Process Automation

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
Total SCU	10

Supporting Courses

Course	SCU
ISYS6685003 RPA Developer Advance	4
ISYS6686003 RPA Business Analytics Fundamental	4
COMP6859001 Intelligence Automation	2
Total SCU	10

8. Minor Program: Event Business and Entertainment

Fundamental Courses

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

Supporting Courses

Course	SCU
TRSM6233022 Event Sponsorship and Funding	2
TRSM6234022 Sport and Entertainment Event Management	4
TRSM6235022 Festival & Cultural Event	4
Total SCU	10

9. Minor Program: Creative Digital Storytelling

Fundamental Courses

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

Supporting Courses

Course	SCU
ENGL6276024 Cultures, Language, and Arts Production	4
JAPN6212025 Anime and Manga as Storytelling	2
ENGL6277024 Music as Medium for Storytelling	4
Total SCU	10

10. Minor Program: Digital Banking

Fundamental Courses

Course	SCU
ISYS6824003 Technology Innovation in Banking	2
FINC6217020 Bank Risk Management in the Digital Era	4
FINC6218020 Digital Finance and The Role of Central Bank	4
Total SCU	10

Supporting Courses

Course	SCU
MGMT6510005 Business Process Management in Banking and Finance	4
ISYS6825003 Data Analytics in Banking and Finance	4
MGMT6511005 Digital Leadership	2
Total SCU	10

11. Minor Program: Blockchain Technology and Business

Fundamental Courses

Course	SCU
ISYS6826003 Introduction to Blockchain Technology	4
ISYS6827003 Blockchain Economy & Business	4
DTSC6016001 Basic Blockchain Programming	2
Total SCU	10

Supporting Courses

Course	SCU
ISYS6828003 Blockchain Architecture Design and Implementation	4
DTSC6017001 Advanced Blockchain Programming	2

Course	SCU
DTSC6018001 Prototyping Blockchain Project	4
Total SCU	10

12. Minor Program: Digital Transformation

Fundamental Courses

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

Supporting Courses

Course	SCU
ISYS6695003 Digital Marketing Analysis	4
STAT6200049 Practical Statistics for Digital Business	4
ISYS6560003 Success Factor for Leading Digital Transformation	2
Total SCU	10

13. Minor Program: Virtual Service Experience

Fundamental Courses

Course	SCU
ISYS6561003 Fundamental of Virtual Services	2
ACCT6350020 Virtual Financial Services	4
MGMT6354005 Virtual Operation and Supply Chain	4
Total SCU	10

Supporting Courses

Course	SCU
ISYS6562003 Virtual Market Place	4
HTMN6082021 Virtual Hospitality Management	4
ISYS6563003 Seminar on Virtual Services	2
Total SCU	10

14. Minor Program: Culinary

Fundamental Courses

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

SCU for HTMN6008021, HTMN6128021 are practical

Supporting Courses

Course		SCU
HTMN6155021	Indonesian Cuisine	4
HTMN6125021	Restaurant Operation	4
HTMN6154021	Culinary Tourism	2
Total SCU		10

SCU for HTMN6155021, HTMN6125021 are practical

15. Minor Program: Digital Technopreneur
Fundamental Courses

Course		SCU
ENTR6528002	The Entrepreneurial Innovator	4
DSGN6839006	Interactive Design	4
COMM6504018	Digital Branding	2
ENPR6196002	Market Intelligence	2
COMP6687004	User Experience Design	4
DSGN6844023	Prototyping Digital Future	4
Total SCU		20

16. Minor Program: Designpreneur
Fundamental Courses

Course		SCU
ENTR6525032	Fundamental of Designpreneur	4
COMP6688031	UI/UX Development	4
DSGN6797034	Surface Packaging Design	4
ENTR6526032	Hospitality and Service Design	4
DSGN6843033	Project Design	4
Total SCU		20

17. Minor Program: Metaverse in Business
Fundamental Courses

Course		SCU
ISYS6777052	Business Model	2
COMP6889051	Virtual Reality	4
COMP6890051	Augmented reality	4
Total SCU		10

Supporting Courses

Course		SCU
ISYS6778052	Data Analytics	2
DSGN6981053	Design Thinking	4
DSGN6980053	Interface Design	4
Total SCU		10

18. Minor Program: Content Creation

Fundamental Courses

Course		SCU
FILM6105009	Filmmaking Fundamental	4
MKTG6392055	Digital marketing	4
DSIN6042053	Photography for Creators	2
Total SCU		10

Supporting Courses

Course		SCU
DSGN6990053	Creative Storytelling	4
DSIN6043053	Strategic Influence	2
DSIN6041053	Introduction to Visual Communication Design	4
Total SCU		10

Appendix: Free Electives

No	Course Owner Department	Course Category	Course Code	Course Name	SCU	Semester
1	Business Creation	MKK	ENTR6580005	Digital Business Transformation	2	4
2	Business Creation	MKB	ENTR6494005	Managing Growing Business	2	5
3	Business Management	MKB	MGMT6401005	Digital Supply Chain Management	2	4
4	Business Management	MKB	MKTG6298005	Service Marketing Management	2	4
5	Business Management	MKB	MGMT6365005	Current Issue in Service Business and Technology	2	5
6	International Business Management	MKB	BUSS6162005	Market Entry Strategy	2	4
7	International Business Management	MKB	MGMT6370005	E-Business for International Business	2	5
8	Management	MKB	BUSS6088005	Current Issue in Business and Technology	2	4
9	Management	MKB	BUSS6109005	Business Development	4	4
10	Management	MKB	BUSS6173005	Managing Innovation and Knowledge	4	4
11	Management	MKB	ISYS6079005	E-Business System	4	4
12	Management	MKB	MGMT6276005	Leadership & Managing Human Capital in Organization	4	4
13	Management	MKB	MGMT6374005	Analysis on E-Business Investment	4	4
14	Management	MKB	ISYS8175005	E-Business Strategy and Implementation	4	5
15	Management	MKB	MGMT6029005	Knowledge Management	2	5
16	Management	MKB	MGMT6063005	Strategic Management	2	5
17	Management	MKB	MGMT6297005	Operations Management	4	5
18	Management	MKB	MGMT6341005	Strategic Management	4	5
19	Accounting	MKB	ACCT6358020	Management Audit	4	4
20	Accounting Bekasi	MKB	ACCT6382020	Business Process Analysis and Solution	2	4
21	Accounting Bekasi	MKB	ACCT6389020	Big Data Analytics in Accounting & Finance	2	5
22	Marketing Communication	MKB	COMM6541019	Digital Corporate Communication	2/2	5
23	Marketing	MKB	COMM6543019	Digital Brand Communicaton	2/2	5

	Communication					
24	Tourism	MKB	TRSM6208022	Tourism Innovation and Product Development	4	5
25	Civil Engineering	MKB	CIVL6025013	Hydrology	2	5
26	Civil Engineering	MKB	CIVL6035013	Airport Engineering	2	5
27	Civil Engineering	MKB	CIVL6037013	Railway Engineering	2	5
28	Civil Engineering	MKB	CIVL6080013	Construction Methods & Heavy Equipment	2	5
29	Civil Engineering	MKB	COMP6046013	Computer Applications in Construction Management	2	5
30	Computer Engineering	MKB	CPEN6126010	Cross Platform Application Development	4	5
31	Computer Engineering	MKB	CPEN6225010	Telco Network & Switching System	2	5
32	Computer Engineering	MKB	CPEN6232010	Cloud Technology Practice	2	5
33	Food Tech	MKB	FOOD6073015	Current Issues in Food Technology	2	4
34	Industrial Engineering	MKB	ISYE6041011	Engineering Economy	2	4
35	Industrial Engineering	MKB	ISYE6113011	Leadership & Organizational Behavior	2	4
36	Industrial Engineering	MKB	ISYE6181011	System Engineering & Analysis	2	4
37	Computer Science	MKB	COMP6586001	Embedded Systems	2	5
38	Computer Science	MKB	COMP6226001	Competitive Programming	2	5
39	Computer Science	MKB	MOBI6059001	Mobile Programming	2	5
40	Computer Science	MKB	COMP7116001	Computer Vision	2/2	5
41	Computer Science	MKB	COMP6821001	Web Programming	2	5
42	Computer Science	MKB	COMP6590001	Geographical Information System	2/2	5
43	Game Application and Technology	MKB	GAME6082001	Game Animation	2	4
44	Game Application and Technology	MKB	GAME6085001	Object Oriented Game Programming	2	5
45	Animation	MKB	DSGN6693007	Motion Graphic	4	4
46	Animation	MKB	DSGN6694007	Visual Effect (VFX)	4	4
47	Animation	MKB	DSGN6695007	Asset Creation	4	4
48	Animation	MKB	DSGN6689007	Concept Art & Production Design	2	5
49	Creative Advertising	MKB	DSGN6671007	Creative Writing for Commercials	4	4
50	Film	MKB	FILM6026009	History of Indonesian Cinema	2	4
51	New Media	MKB	DSGN6743007	Digital Graphic Reproduction	4	4
52	Interior Design	MKB	DSGN6611008	Business in Interior Design	2	4
53	Business Information Technology	MKB	ISYS6574003	Information Retrieval	4	4
54	Business Information Technology	MKB	ISYS6577003	Machine Learning & Foundations	2	4
55	Business Information Technology	MKB	ISYS6606003	Smart Application	2	4
56	Business Information Technology	MKB	ISYS6579003	Knowledge-Based AI: Cognitive Systems	4	5
57	Information Systems	MKB	BUSS6043003	Introduction to E-Business	4	4
58	Information Systems	MKB	ISYS6016003	Social Media Fundamental	2	4
59	Information Systems	MKB	ISYS6203003	Mobile Application Development	2/2	4
60	Information Systems	MKB	ISYS6210003	Data Visualization	2	4
61	Information Systems	MKB	ISYS6285003	Digital and New Media	2	4
62	Information Systems	MKB	ISYS6594003	Coding for Finance	2	4
63	Information Systems	MKB	ISYS6196003	Business Analytics	2	5
64	Information Systems	MKB	ISYS6199003	Data & Text Mining	4	5
65	Information Systems	MKB	ISYS6202003	Social Informatics	4	5
66	Information Systems	MKB	ISYS6289003	Collaborative Computing	4	5
67	Information Systems	MKB	ISYS6402003	Business Analytics	2/2	5
68	Information Systems	MKB	ISYS8066003	Business Process Management	4	5
69	Information Systems Accounting & Auditing	MKB	ISYS6608003	IT Service & Risk Management	2	5

70	Data Science	MKB	DTSC6007001	Deep Learning	2	4
71	Data Science	MKB	DTSC6008001	Text Mining	2	5
72	Cyber Security	MKB	COMP6646001	Computer Forensic	2	5
73	Mobile Application & Technology	MKB	MOBI6068001	Web Design	2	5
74	International Relations	MKB	INTR8043029	International Media and State Role	4	4
75	International Relations	MKB	INTR6162029	Multiculturalism and Digital Society	2	5
76	Business Law	MKB	LAWS6017028	Intellectual Property Rights	4	4
77	Business Law	MKB	LAWS6110028	Cyber Law	2	4
78	Business Law	MKB	LAWS6171028	Business Competition & Consumer Protection Law	2	4
79	Business Law	MKB	LAWS6052028	Bankruptcy Law	2	5
80	Business Law	MKB	LAWS6167028	Legal Philosophy & Professional Ethics	2	5
81	Business Law	MKB	LAWS6176028	Tax Law	2	5
82	Chinese Literature	MKB	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	4
83	Chinese Literature	MKB	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	5
84	English Literature	MKB	ENGL6169024	English for Professionals	2	4
85	English Literature	MKB	SOCS6021024	Social and Digital Media Writing	2	4
86	English Literature	MKB	ENGL6244024	Social Media Broadcasting	4	5
87	Primary Teacher Education	MKB	EDUC6018030	Micro Teaching	4	4
88	Primary Teacher Education	MKB	EDUC6041030	Current Issues in Primary Education	2	4
89	Primary Teacher Education	MKB	EDUC6062030	International and National Curriculum	2	4
90	Primary Teacher Education	MKB	EDUC6033030	Physical Education	2	5
91	Primary Teacher Education	MKB	EDUC6061030	ICT for Distance Learning	2	5
92	Psychology	MKB	PSYC6124027	Psychology of Early Childhood Education	4	4
93	Psychology	MKB	PSYC6125027	Psychology of Special Needs Education	4	4
94	Psychology	MKB	PSYC6130027	Human Performance Technology	4	4
95	Business Creation	MKB	ENTR6580005	Digital Business Transformation	2	4
96	Business Creation	MKB	ENTR6494005	Managing Growing Business	2	5
97	Business Management	MKB	MGMT6401005	Digital Supply Chain Management	2	4
98	Business Management	MKB	MKTG6298005	Service Marketing Management	2	4
99	Business Management	MKB	MGMT6365005	Current Issue in Service Business and Technology	2	5
100	International Business Management	MKB	BUSS6162005	Market Entry Strategy	2	4

Enrichment Track Scheme

Track scheme for semester 6 and semester 7

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		
13						v		v							
14						v					v				
15						v						v			
16						v								v	
17							v	v							
18							v				v				
19							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

Students who failed in Enrichment Program I can retake with the same track or change into another track. As for Enrichment Program II, student who failed with Internship, Research, Community Development, and Study Abroad track on Enrichment Program II, can retake with the same track or change into another track. However students who take Entrepreneurship track on Enrichment Program II, should retake with another track.

CERTIFIED INTERNSHIP TRACK
Enrichment Program I

Group	Course	SCU
MKB	COMP6930004 Industrial Experience in Information Technology	8
	COMP6931004 Information Technology Practice in Industrial Experience	8
	COMP6932004 EES in Information Technology Industry	4
Total SCU		20

Enrichment Program II

Group	Course	SCU
MKB	COMP6933004 Professional Experience in Information Technology	8
	COMP6934004 Information Technology Practice in Professional Experience	8
	COMP6935004 Professional Development in Information Technology Industry	4
Total SCU		20

**CERTIFIED RESEARCH TRACK
 Enrichment Program I**

Group	Course	SCU
MKB	RSCH6089004 Research Experience I	8
	RSCH6573004 Scientific Writing I	8
	RSCH6091004 Global EES I (Team Work, Communication, Problem Solving & Decision Making)	4
Total SCU		20

Enrichment Program II

Group	Course	SCU
MKB	RSCH6092004 Research Experience II	8
	RSCH4574004 Scientific Writing II	8
	RSCH6094004 Global EES II (Self-Management, Planning & Organizing, Initiative & Enterprise)	4
Total SCU		20

**CERTIFIED ENTREPRENEURSHIP TRACK
 Enrichment Program I**

Group	Course	SCU
MKB	ENPR6144004 New Venture Initiation in Computer Science	8
	ENPR6145004 Computer Science Product Development Process	8
	ENPR6146004 EES in New Computer Science Business I	4
Total SCU		20

Enrichment Program II

Group	Course	SCU
MKB	ENPR6147004 Computer Science Product Launching	8
	ENPR6148004 Computer Science Business Development	8
	ENPR6149004 EES in New Computer Science Business II	4
Total SCU		20

CERTIFIED COMMUNITY DEVELOPMENT TRACK
Enrichment Program I

Group	Course	SCU
MKB	CMDV6028004 Community Outreach Project Implementation	8
	CMDV6347004 Community Outreach Project Design	8
	CMDV6030004 Employability and Entrepreneurial Skills	4
Total SCU		20

Enrichment Program II

Group	Course	SCU
MKB	CMDV6031004 Community Development Project Implementation	8
	CMDV6348004 Community Development Project Design	8
	CMDV6033004 Employability and Entrepreneurial Skills	4
Total SCU		20

**CERTIFIED STUDY ABROAD TRACK
 Enrichment Program I**

Group	Course	SCU
Elective courses list for study abroad*		
MKB	GLOB6093004 Elective Course for Study Abroad 1	4
	GLOB6094004 Elective Course for Study Abroad 2	4
	GLOB6095004 Elective Course for Study Abroad 3	4
	GLOB6096004 Elective Course for Study Abroad 4	4
	GLOB6257004 Elective Course for Study Abroad 25	4
	GLOB6258004 Elective Course for Study Abroad 26	2
	GLOB6259004 Elective Course for Study Abroad 27	2
	GLOB6097004 Elective Course for Study Abroad 5	2
	GLOB6098004 Elective Course for Study Abroad 6	2
	GLOB6099004 Elective Course for Study Abroad 7	2
	GLOB6100004 Elective Course for Study Abroad 8	2
	GLOB6101004 Elective Course for Study Abroad 9	2
	GLOB6102004 Elective Course for Study Abroad 10	2
GLOB6103004 Elective Course for Study Abroad 11	2	
GLOB6104004 Elective Course for Study Abroad 12	2	
Total SCU		20

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

Enrichment Program II

Group	Course	SCU
Elective courses list for study abroad*		
MKB	GLOB6105004 Elective Course for Study Abroad 13	4
	GLOB6106004 Elective Course for Study Abroad 14	4
	GLOB6107004 Elective Course for Study Abroad 15	4
	GLOB6108004 Elective Course for Study Abroad 16	4
	GLOB6286004 Elective Course for Study Abroad 28	4
	GLOB6287004 Elective Course for Study Abroad 29	2
	GLOB6288004 Elective Course for Study Abroad 30	2
	GLOB6109004 Elective Course for Study Abroad 17	2
	GLOB6110004 Elective Course for Study Abroad 18	2
	GLOB6111004 Elective Course for Study Abroad 19	2
	GLOB6112004 Elective Course for Study Abroad 20	2
	GLOB6113004 Elective Course for Study Abroad 21	2

GLOBAL6114004	Elective Course for Study Abroad 22	2
GLOBAL6115004	Elective Course for Study Abroad 23	2
GLOBAL6116004	Elective Course for Study Abroad 24	2
Total SCU		20

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

CERTIFIED SPECIFIC INDEPENDENT STUDY

Group	Course	SCU	
MKB	Elective courses list for certified specific independent study*		
	MICR6145004	Course Certification I	3
	MICR6146004	Technical Skill Enrichment I	4
	MICR6147004	Industrial Project I	9
	MICR6148004	Soft Skill Enrichment I	4
	MICR6149004	Elective Course for Specific Independent Study 1	8
	MICR6150004	Elective Course for Specific Independent Study 2	8
	MICR6151004	Elective Course for Specific Independent Study 3	6
	MICR6152004	Elective Course for Specific Independent Study 4	6
	MICR6153004	Elective Course for Specific Independent Study 5	6
	MICR6154004	Elective Course for Specific Independent Study 6	5
	MICR6155004	Elective Course for Specific Independent Study 7	5
	MICR6156004	Elective Course for Specific Independent Study 8	5
	MICR6157004	Elective Course for Specific Independent Study 9	5
	MICR6158004	Elective Course for Specific Independent Study 10	4
	MICR6159004	Elective Course for Specific Independent Study 11	4
	MICR6160004	Elective Course for Specific Independent Study 12	4
	MICR6161004	Elective Course for Specific Independent Study 13	4
	MICR6162004	Elective Course for Specific Independent Study 14	4
	MICR6163004	Elective Course for Specific Independent Study 15	3
	MICR6164004	Elective Course for Specific Independent Study 16	3
	MICR6165004	Elective Course for Specific Independent Study 17	3
	MICR6166004	Elective Course for Specific Independent Study 18	3
	MICR6167004	Elective Course for Specific Independent Study 19	3
	MICR6168004	Elective Course for Specific Independent Study 20	3
	MICR6169004	Elective Course for Specific Independent Study 21	2
	MICR6170004	Elective Course for Specific Independent Study 22	2
	MICR6171004	Elective Course for Specific Independent Study 23	2
	MICR6172004	Elective Course for Specific Independent Study 24	2
	MICR6173004	Elective Course for Specific Independent Study 25	2
	MICR6174004	Elective Course for Specific Independent Study 26	2
MICR6175004	Elective Course for Specific Independent Study 27	2	
MICR6176004	Elective Course for Specific Independent Study 28	2	
MICR6177004	Elective Course for Specific Independent Study 29	1	
MICR6178004	Elective Course for Specific Independent Study 30	1	
MICR6179004	Elective Course for Specific Independent Study 31	1	

MICR6180004	Elective Course for Specific Independent Study 32	1
Total SCU		20

**) 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.*

FURTHER STUDY TRACK

Enrichment Program II Fast track M.MSI

Group	Course	SCU
MKB	ISYS6654003 Service Oriented Analysis and Design	4
	ISYS6655003 Change Management for Enterprise	4
	ISYS6656003 Digital Transformation Management	4
	ISYS6657003 Data Analytics for Research	4
	ISYS6660003 Visualization and Descriptive Analytics	4
Total SCU		20

Fast track M.TI

Group	Course	SCU
MKB	COMP6815001 IT Disaster Recovery	4
	COMP6816001 Wireless and Cloud Computing Technologies	4
	COMP6817001 Internet Tools and Services	4
	COMP6818001 Cyber Risk Management	4
	COMP6819001 Knowledge Engineering	4
Total SCU		20

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

No.	Course Code	Course Name	Minimal Grade
1.	CHAR603004	Character Building: Pancasila	B
2.	ENTR6521002	Entrepreneurship: Market Validation	C
3.	COMP6360004	Algorithm and Programming	C
4.	COMP6362004	Data Structures	C
5.	COMP6840004	Program Design Methods	C
6.	COMP6855004	Software Engineering	C
7.	COMP6852004	Database Technology	C
8.	COMP6716004	Operating System	C