

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.

The Computer Science Program was founded in September 1987, under STMIK Bina Nusantara; it became one of the programs under the coordination of the Faculty of Computer Science, Bina Nusantara University in December 1998.

Computer Science Program at Bina Nusantara University emphasizes the processes, techniques, and tools that go into developing computer-based systems, with specialities in intelligent systems, software engineering, multimedia technology, database systems and network technology.

Vision

A study program of choice in Computer Science which focuses on developing creative software solutions for industry, is recognized internationally, champions innovation and delivers graduates with international qualifications.

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 with fundamental and advance knowledge, skill and practice in software development specialized in database technology, intelligence system, networking or multimedia and game development by providing an excellent learning environment and promoting research and collaboration with global industry;
2. Providing IT professional services with emphasis in application of knowledge in terms of society development;
3. Sharing application of knowledge related to computer science for Indonesian and international community quality of life improvement;
4. Promoting students & lecturers to be creative and value-addings talents in computer science by creating suitable environment in order to be able to compete in international level;
5. Preparing students for becoming smart and good ICT professionals, leaders and entrepreneurs in global market or for continuing in advanced studies.

Program Objective

The objectives of the program are:

1. To provide students with a solid foundation of mathematical, algorithm principles, computer science knowledge and ethical that will be needed in IT practice;
2. To provide students with skills to apply design and development principles in the construction of software system applied in database technology, intelligence system, networking and multimedia development;

3. To prepare students with abilities to keep up-to-date with the latest Information Technology trends, developments and industries;
4. To prepare students with abilities in problem solving and good communication skills to be able to work as an individual or in a team in an IT environment.

Student Outcomes

After completing the study, graduates are:

1. Able to create software application design with the implementation of database system principal design to solve structured and semi-structured data;
2. Able to design software application solutions based on problems analysis which can be solved with structured approach in informatics area;
3. Able to assess technology trend in informatics area to deliver alternative solutions of software development;
4. Able to produce software applications which can solve the problems in informatics;
5. Able to produce database software with high complexity to solve problems;
6. Able to produce computer network-based software to solve problems;
7. Able to produce smart software using artificial intelligence algorithms to solve problems;
8. Able to produce multimedia-based software to solve the problems;
9. Able to apply interdisciplinary knowledge and skills in developing alternative solutions for problem-solving.

Prospective Career of the Graduates

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

- | | |
|---------------------------------------|---------------------------|
| 1. Software Engineer/Developer | 7. Data Scientist |
| 2. System Analyst/Developer | 8. IT Support/Consultant |
| 3. Web Engineer/Developer | 9. Researcher |
| 4. Computer Network Specialist | 10. Multimedia Programmer |
| 5. Database Specialist | 11. Lecturer/Trainer |
| 6. Artificial Intelligence Specialist | |

Curriculum

The curriculum of the Computer Science 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 Program are expected to be able to face competition at both a national and international level. Generally, the subjects of the curriculum 2020 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, databases systems, computer graphics, multimedia technology, human and computer interaction, operation systems, computer architecture, and computer network.

Concentration Subject (Stream)

The objective of this group is to give students the opportunity to obtain a deep understanding of a range of disciplines in computer science. The students are expected to develop their skills and master the techniques which will allow them to research both their thesis and/or to continue their studies.

The Concentration subjects (Stream) provide:

1. Software Engineering: to explore the various methodologies and software engineering equipment.
2. Intelligent Systems: to explore the various techniques of computer intelligence that can be applied to solving problem.
3. Database Technology: to explore the various technologies and database application.
4. Network Technology: to explore computer networking which consists of installation, administration, and computer networking management.
5. Interactive Multimedia: to explore computer interactive multimedia applications, based on computer programming, design tools, and software engine.
6. Internet of Things: to explore the various techniques and implementation of IoT.
7. Digital Creative Technology: focuses on competencies' development in smart software application development field based on big data analytics to support business innovation through digital transformation in Industry 4.0 era (Digital Business Innovation and Transformation).

Entrepreneur and Employability Skill (Internship)

The objective of this group of subject is to prepare students with professional experience, work ethics and to experience the working environment. The students are expected to apply and to practice their knowledge in the real working area such as industry, research lab, and also an entrepreneur startup. They are also expected to give reports as the result of the subjects.

Course Structure

Sem	Code	Course Name	SCU	Total	
1	CHAR6013	Character Building: <i>Pancasila</i>	2	20	
	MATH6025	Discrete Mathematics	4		
	MATH6030	Linear Algebra	2		
	COMP6047	Algorithm and Programming**	4/2		
	COMP6056	Program Design Methods**	4		
	English University Courses I				
	ENGL6128	English in Focus	2		
ENGL6130	English for Business Presentation	2			
2	CHAR6014	Character Building: <i>Kewarganegaraan</i>	2	20	
	COMP6048	Data Structures*&**	4/2		
	MATH6031	Calculus	4		
	ENTR6509	Entrepreneurship: Ideation	2		

Sem	Code	Course Name	SCU	Total	
	COMP6176	Human and Computer Interaction	2/2		
	English University Courses II				
	ENGL6129	English Savvy	2		
	ENGL6131	English for Written Business Communication	2		
3	CHAR6015001	Character Building: <i>Agama</i>	2	23	
	COMP6049001	Algorithm Design and Analysis*	4		
	ISYS6169001	Database Systems	4/2		
	CPEN6098001	Computer Networks	2/2		
	COMP6639001	Artificial Intelligence*&***	5		
	LANG6027001	Indonesian	2		
4	COMP6696001	Research Methodology in Computer Science	2	Streaming: 20 Minor / FE: 21	
	COMP6640001	Software Engineering**&***	5		
	STAT6171001	Basic Statistics	2		
	Streaming : Software Engineering				
	COMP6732001	Code Reengineering	2		
	COMP6733001	Pattern Software Design	2		
	COMP6708001	Object Oriented Programming*&**	2/2		
	COMP7084001	Multimedia Systems**	2/1		
	Streaming : Intelligent System				
	COMP6576001	Natural Language Processing*&**	2		
	COMP6745001	Machine Learning	2		
	COMP6708001	Object Oriented Programming*&**	2/2		
	COMP7084001	Multimedia Systems**	2/1		
	Streaming : Interactive Multimedia				
	COMP8129001	User Experience*&**	2/2		
	COMP6708001	Object Oriented Programming*&**	2/2		
	COMP7084001	Multimedia Systems**	2/1		
	Streaming : Database Technology				
	COMP6783001	Database Design	2		
	COMP6734001	Big Data Processing*&**	2		
	COMP6708001	Object Oriented Programming*&**	2/2		
	COMP7084001	Multimedia Systems**	2/1		
	Streaming : Network Technology				
	COMP6582001	Computer Security*	2		
	COMP6735001	Network and System Programming*&**	2		
	COMP6708001	Object Oriented Programming*&**	2/2		
	COMP7084001	Multimedia Systems**	2/1		
	Streaming: Internet of Things*****				
	COMP6653031	Embedded System	4/2		
	COMP6656031	Mobile Object Oriented Programming	2/2		

Sem	Code	Course Name	SCU	Total	
	Streaming: Digital Creative Technology *****				
	COMP6397004	User Experience**	2/2		
	COMP6364004	Object Oriented Programming	2/2		
	COMP6767004	Mobile Application Programming**	2		
	Minor Program				12
	Free Elective				12
5	COMP6062001	Compilation Techniques	4	Streaming: 17 Minor / FE: 16	
	COMP6697001	Operating System	2		
	ENTR6511001	Entrepreneurship: Market Validation	2		
	Elective Courses ****				
	MOBI6059001	Mobile Programming	2		
	COMP6586001	Embedded Systems	2		
	COMP6226001	Competitive Programming*	2		
	COMP6578001	Information Visualization	2		
	COMP6736001	Distributed Cloud Computing	2		
	COMP6588001	Information Retrieval	2		
	COMP6587001	Deep Learning	2		
	Streaming : Software Engineering				
	COMP6122001	Framework Layer Architecture	2/2		
	COMP6681001	Web Programming*&**	2/1		
	Streaming : Intelligent System				
	COMP7116001	Computer Vision*	2/2		
	COMP6681001	Web Programming*&**	2/1		
	Streaming : Interactive Multimedia				
	COMP6583001	Computer Graphics	2/2		
	COMP6681001	Web Programming*&**	2/1		
	Streaming : Database Technology				
	COMP6737001	Geographical Information System*	2		
	COMP6746001	Data Mining	2		
	COMP6681001	Web Programming*&**	2/1		
	Streaming : Network Technology				
	COMP6591001	Portable Operating System Interface*	2/2		
	COMP6681001	Web Programming*&**	2/1		
	Streaming: Internet of Things *****				
	COMP6757031	Computer Vision in Internet of Things	2/2		
	COMP6627031	Portable Operating System Interface	2/2		
	COMP6655031	Cyber Security in Internet of Things	2		
	Streaming: Digital Creative Technology *****				
	COMP6678004	Big Data Analytics for Business	4		
	COMP6679004	Web Programming**	4		
	COMP6768004	Multimedia Systems	2		
	Minor Program				8
Free Elective			8		

Sem	Code	Course Name	SCU	Total
6	Enrichment Program I		20	20
7	Enrichment Program II		20	20
8	COMP6747001	Pre-Thesis	2	6
	COMP6748001	Thesis	4	
	COMP6861001	Thesis	6	
TOTAL CREDITS 146 Credits				

- *) This course is delivered in English*
- ***) Global Learning System Course*
- ****) Entrepreneurship Embedded*
- *****) Elective Courses: Student will choose 1 course (2 credits) from elective course on 5th semester. This elective course available only for student who choose streaming program*
- *****) Conducted for student mobility program in BINUS @Bandung*
- *****) Conducted for student mobility program in BINUS @Malang*

Streaming/Minor/Free Electives:

-) For 4th Semester: Students are required to choose Streaming or Minor Program or Free Electives. For Free Electives, students are required to choose from the list of Free Electives in Appendix.
-) For 5th Semester: Students are required to choose Streaming or Minor Program same with previous semester. For Free Electives, students are required to choose from the list of Free Electives in Appendix.

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

English University Courses:

-) For 1st Semester: English University Courses I, students with Binus University English Proficiency Test score less than 500 will take English in Focus, and student with test score greater than or equal to 500 will take English for Business Presentation.
-) For 2nd Semester: English University Courses II, students with Binus University English Proficiency Test score less than 500 will take English Savvy, and students with test score greater than or equal to 500 will take English for Written Business Communication.
-) Students must pass English Savvy with a minimum Grade of C.

Minor Scheme

Minor Program	Semester 4	Semester 5
Minor @ Binus Kemanggisian		
Digital Ecosystem	-	-
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
Minor @ Binus Alam Sutera		
Digital Business	v	v
Minor @ Binus Bekasi		
Virtual Services	-	-
Culinary	v	v
Minor @ Binus Malang		
Digital Technopreneur	v	v
Minor @ Binus Bandung		
DesignPreneur	v	v

1. Minor Program: Human Capital in Digital Workplace

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

2. Minor Program: Sustainable Development

Course		SCU
ARCH6119014	Introduction to Sustainable Development	2
DSGN6835008	Engineering Material	4
ISYE6154011	Sustainable Design and Manufacture	4
ISYE6155011	Occupational, Health, Safety, and Administration in Engineering	2
CPEN6217010	Digital for Sustainable Development	4
CIVL6118013	Engineering Economic	4
Total SCU		20

3. Minor Program: Cross Cultural Communication

Course		SCU
CHIN6133026	Chinese Conversation in Daily Works	2
CHIN6132026	Chinese Conversation in Daily Activities	4
CHIN6134026	Chinese Conversation in Business Communication	4
COMM6502019	Communication in Diversity	2
INTR6135029	Comparative Politics	4
BUSS6170025	Asian Business Ethics	4
Total SCU		20

4. Minor Program: Interactive & Users Experience Design

Course		SCU
PSYC6176027	Psychology and User Experience	4
ISYS6553003	User-Centered Research and Evaluation	4
DSGN6836007	Fundamental of Interface Design	4
ISYS6554003	Core Principles: Interactive Design	4
DSGN6837007	Digital Design Production	4
Total SCU		20

5. Minor Program: Data Analytics

Course		SCU
ISYS6680003	Introduction to data Analytics	2
ISYS6681003	Data Management & Descriptive Analytics	4
STAT6198049	Statistical for Decision Making	4
ISYS6682003	Application of Predictive Analytics to Business Data	4
ISYS6683003	Prescriptive Analytics and Optimization	4
MKTG6312005	Digitalization of Markets and Consumption	2
Total SCU		20

6. Minor Program: Robotic Process Automation

Course	SCU
COMP6857001 Basic Programming for Automation	2
COMP6858001 RPA Concept & Design	2
ISYS6684003 RPA Developer Fundamental	4
ISYS6685003 RPA Developer Advance	4
ISYS6686003 RPA Business Analytics Fundamental	4
ISYS6687003 Business Process Improvement	2
COMP6859001 Intelligence Automation	2
Total SCU	20

7. Minor Program: Digital Business

Course	SCU
ISYS6559003 Business Models and Technology Innovation	4
ISYS6557003 Business Data Management	4
ISYS6695003 Digital Marketing Analysis	4
STAT6200049 Practical Statistics for Digital Business	4
MGMT6352005 Digital Strategy	4
Total SCU	20

8. Minor Program: Culinary

Course	SCU
HTMN6078021 Advanced in Pastry and Bakery	4
HTMN6050021 Culinary Business Event	2/2
HTMN6048021 Western and French Cuisine	2/4
HTMN6046021 Authentic Indonesian Cuisine	2/4
Total SCU	20

9. Minor Program: Digital Technopreneur

Course	SCU
ENTR6528002 The Entrepreneurial Innovator	4
COMP6686004 Popular Technology	4
ENTR6529002 Market Intelligence	4
DSGN6839006 Interactive Design	4
DSGN6844023 Prototyping Digital Future	4
Total SCU	20

10. Minor Program: Designpreneur

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

Appendix: Free Electives (4th Semester & 5th Semester)

No	Course Owner Department	Course Code	Course Name	SCU	Semester
1	Business Creation	ENTR6580005	Digital Business Transformation	2	4
2	Business Creation	ENTR6494005	Managing Growing Business	2	5
3	Business Management	MGMT6401005	Digital Supply Chain Management	2	4
4	Business Management	MKTG6298005	Service Marketing Management	2	4
5	Business Management	MGMT6365005	Current Issue in Service Business and Technology	2	5
6	International Business Management	BUSS6162005	Market Entry Strategy	2	4
7	International Business Management	MGMT6370005	E-Business for International Business	2	5
8	Management	BUSS6088005	Current Issue in Business and Technology	2	4
9	Management	BUSS6109005	Business Development	4	4
10	Management	BUSS6173005	Managing Innovation and Knowledge	4	4
11	Management	MGMT6276005	Leadership & Managing Human Capital in Organization	4	4
12	Management	MGMT6374005	Analysis on E-Business Investment	4	4
13	Management	ISYS8175005	E-Business Strategy and Implementation	4	5
14	Management	MGMT6029005	Knowledge Management	2	5
15	Management	MGMT6063005	Strategic Management	2	5
16	Management	MGMT6297005	Operations Management	4	5
17	Management	MGMT6341005	Strategic Management	4	5
18	Accounting	ACCT6358020	Management Audit	4	4
19	Accounting Bekasi	ACCT6382020	Business Process Analysis and Solution	2	4
20	Accounting Bekasi	ACCT6397020	ERP Fundamental	2/2	4
21	Accounting Bekasi	ACCT6389020	Big Data Analytics in Accounting & Finance	2	5
22	Marketing Communication	COMM6541019	Digital Corporate Communication	2/2	5
23	Marketing Communication	COMM6543019	Digital Brand Communicaton	2/2	5
24	Tourism	TRSM6208022	Tourism Innovation and Product Development	4	5
25	Architecture	ARCH6128014	Multimedia in Design Presentation	4	5
26	Architecture	ARCH6132014	Leadership Organization Behavior	4	5
27	Civil Engineering	CIVL6025013	Hydrology	2	5
28	Civil Engineering	CIVL6035013	Airport Engineering	2	5
29	Civil Engineering	CIVL6037013	Railway Engineering	2	5
30	Civil Engineering	CIVL6080013	Construction Methods & Heavy Equipment	2	5
31	Civil Engineering	COMP6046013	Computer Applications in Construction Management	2	5
32	Computer Engineering	CPEN6126010	Cross Platform Application Development	4	5
33	Computer Engineering	CPEN6225010	Telco Network & Switching System	2	5

No	Course Owner Department	Course Code	Course Name	SCU	Semester
34	Computer Engineering	CPEN6232010	Cloud Technology Practice	2	5
35	Food Technology	FOOD6073015	Current Issues in Food Technology	2	4
36	Industrial Engineering	ISYE6041011	Engineering Economy	2	4
37	Industrial Engineering	ISYE6113011	Leadership & Organizational Behavior	2	4
38	Industrial Engineering	ISYE6181011	System Engineering & Analysis	2	4
39	Business Law	LAWS6017028	Intellectual Property Rights	4	4
40	Business Law	LAWS6110028	Cyber Law	2	4
41	Business Law	LAWS6171028	Business Competition & Consumer Protection Law	2	4
42	Business Law	LAWS6052028	Bankruptcy Law	2	5
43	Business Law	LAWS6167028	Legal Philosophy & Professional Ethics	2	5
44	Business Law	LAWS6176028	Tax Law	2	5
45	Chinese Literature	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	4
46	English Literature	ENGL6169024	English for Professionals	2	4
47	English Literature	SOCS6021024	Social and Digital Media Writing	2	5
48	English Literature	ENGL6244024	Social Media Broadcasting	4	5
49	International Relations	INTR8043029	International Media and State Role	4	4
50	International Relations	INTR6162029	Multiculturalism and Digital Society	2	5
51	Primary Teacher Education	EDUC6018030	Micro Teaching	4	4
52	Primary Teacher Education	EDUC6041030	Current Issues in Primary Education	2	4
53	Primary Teacher Education	EDUC6062030	International and National Curriculum	2	4
54	Primary Teacher Education	EDUC6033030	Physical Education	2	5
55	Primary Teacher Education	EDUC6061030	ICT for Distance Learning	2	5
56	Psychology	PSYC6124027	Psychology of Early Childhood Education	4	4
57	Psychology	PSYC6125027	Psychology of Special Needs Education	4	4
58	Psychology	PSYC6130027	Human Performance Technology	4	4
59	Psychology	PSYC6123027	Educational Psychology	2	5
60	Computer Science	COMP6226001	Competitive Programming	2	5
61	Computer Science	COMP7116001	Computer Vision	2/2	5
62	Computer Science	COMP6736001	Distributed Cloud Computing	2	5
63	Computer Science	COMP6586001	Embedded Systems	2	5
64	Computer Science	COsMP6578001	Information Visualization	2	5
65	Computer Science	MOBI6059001	Mobile Programming	2	5
66	Cyber Security	COMP6646001	Computer Forensic	2	5
67	Cyber Security	COMP6582001	Computer Security	2	4
68	Statistics	STAT6158001	Data Management and Organization	2	5
69	Game Application & Technology	GAME6082001	Game Animation	2	4

No	Course Owner Department	Course Code	Course Name	SCU	Semester
70	Mobile Application & Technology	MOBI6059001	Mobile Programming	2	5
71	Statistics	RSCH6483001	Research Methodology in Data Science	2	5
72	Mobile Application & Technology	MOBI6057001	Wearable Technology	2	5
73	Animation	DSGN6693007	Motion Graphic	4	4
74	Animation	DSGN6694007	Visual Effect (VFX)	4	4
75	Animation	DSGN6695007	Asset Creation	4	4
76	Creative Advertising	DSGN6671007	Creative Writing for Commercials	4	4
77	Creative Advertising	DSGN6651007	Photography	4	4
78	Film	FILM6026009	History of Indonesian Cinema	2	4
79	Interior Design	DSGN6611008	Business in Interior Design	2	4
80	New Media	DSGN6743007	Digital Graphic Reproduction	4	4
81	Business Information Technology	ISYS6574003	Information Retrieval	4	4
82	Business Information Technology	ISYS6577003	Machine Learning & Foundations	2	4
83	Business Information Technology	ISYS6606003	Smart Application	2	4
84	Business Information Technology	ISYS6579003	Knowledge-Based AI: Cognitive Systems	4	5
85	Information Systems	BUSS6043003	Introduction to E-Business	4	4
86	Information Systems	ISYS6016003	Social Media Fundamental	2	4
87	Information Systems	ISYS6203003	Mobile Application Development	2/2	4
88	Information Systems	ISYS6210003	Data Visualization	2	4
89	Information Systems	ISYS6285003	Digital and New Media	2	4
90	Information Systems	ISYS6442003	Applied ERP: Fundamental	4	4
91	Information Systems	ISYS6567003	Applied Database: Database Programming With SQL and PL/SQL	4	4
92	Information Systems	ISYS6594003	Coding for Finance	2	4
93	Information Systems	ISYS6196003	Business Analytics	2	5
94	Information Systems	ISYS6199003	Data & Text Mining	4	5
95	Information Systems	ISYS6202003	Social Informatics	4	5
96	Information Systems	ISYS6289003	Collaborative Computing	4	5
97	Information Systems	ISYS6402003	Business Analytics	2/2	5
98	Information Systems	ISYS8066003	Business Process Management	4	5
99	Information Systems Accounting & Auditing	ISYS6608003	IT Service & Risk Management	2	5

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	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		

Note:

IN	: Internship	SA	: Study Abroad
RS	: Research	FS	: Further Study
EN	: Entrepreneurship	IS	: Certified Specific Independent Study
CD	: 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 Certified Internship, Certified Research, Certified Community Development, and Certified Study Abroad track on Enrichment Program II, can retake with the same track or change into another track. However students who take **Certified Entrepreneurship** track on Enrichment Program II, should **retake with another track**.

Certified Internship Track

Code	Course Name	SCU	Total
Enrichment Program I			
COMP6426001	Industrial Experience in Information Technology	8	20
COMP6762001	Information Technology Practice in Industrial Experience	8	
COMP6514001	EES in Information Technology Industry	4	
Enrichment Program II			
COMP6429001	Professional Experience in Information Technology	8	20
COMP6763001	Information Technology Practice in Professional Experience	8	
COMP6430001	Professional Development in Information Technology Industry	4	

Certified Entrepreneurship Track

Code	Course Name	SCU	Total
Enrichment Program I			20
ENTR6943001	New Venture Initiation in Computer Science	8	
ENTR6945001	Computer Science Product Development Process	8	
ENTR6947001	EES in New Computer Science Business I	4	
Enrichment Program II			20
ENTR6944001	Computer Science Product Launching	8	
ENTR6946001	Computer Science Business Development	8	
ENTR6948001	EES in New Computer Science Business II	4	

Certified Research Track

Code	Course Name	SCU	Total
Enrichment Program I			20
RSCH6565001	Research Experience I in Computer Science	8	
RSCH6567001	Scientific Writing I in Computer Science	8	
RSCH6569001	Global EES I (Team Work, Communication, Problem Solving & Decision Making) in Computer Science	4	
Enrichment Program II			20
RSCH6566001	Research Experience II in Computer Science	8	
RSCH6568001	Scientific Writing II in Computer Science	8	
RSCH6570001	Global EES II (Self-Management, Planning & Organizing, Initiative & Enterprise)	4	

Certified Community Development Track

Code	Course Name	SCU	Total
Enrichment Program I			20
CMDV6159001	Community Outreach Project Implementation	8	
CMDV6343001	Community Outreach IT Project Design	8	
CMDV6208001	Employability and Entrepreneurial Skills in Computer Science Community	4	
Enrichment Program II			20
CMDV6184001	Community Development Project Implementation	8	
CMDV6344001	Community Development IT Project Design	8	
CMDV6193001	Employability and Entrepreneurial Skills in Computer Science Community Development	4	

Certified Study Abroad Track

Code	Course Name	SCU	Total
Elective courses list for study abroad*			20
Enrichment Program I			
GLOB6005001	Elective Course for Study Abroad 1	4	
GLOB6006001	Elective Course for Study Abroad 2	4	
GLOB6007001	Elective Course for Study Abroad 3	4	
GLOB6008001	Elective Course for Study Abroad 4	4	
GLOB6009001	Elective Course for Study Abroad 5	2	

Code	Course Name	SCU	Total
GLOB6010001	Elective Course for Study Abroad 6	2	
GLOB6011001	Elective Course for Study Abroad 7	2	
GLOB6012001	Elective Course for Study Abroad 8	2	
GLOB6013001	Elective Course for Study Abroad 9	2	
GLOB6014001	Elective Course for Study Abroad 10	2	
GLOB6015001	Elective Course for Study Abroad 11	2	
GLOB6016001	Elective Course for Study Abroad 12	2	
GLOB6251001	Elective Course for Study Abroad 29	4	
Enrichment Program II			20
GLOB6017001	Elective Course for Study Abroad 13	4	
GLOB6018001	Elective Course for Study Abroad 14	4	
GLOB6019001	Elective Course for Study Abroad 15	4	
GLOB6020001	Elective Course for Study Abroad 16	4	
GLOB6021001	Elective Course for Study Abroad 17	2	
GLOB6022001	Elective Course for Study Abroad 18	2	
GLOB6023001	Elective Course for Study Abroad 19	2	
GLOB6024001	Elective Course for Study Abroad 20	2	
GLOB6025001	Elective Course for Study Abroad 21	2	
GLOB6026001	Elective Course for Study Abroad 22	2	
GLOB6027001	Elective Course for Study Abroad 23	2	
GLOB6028001	Elective Course for Study Abroad 24	2	
GLOB6253001	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
Elective courses list for certified specific independent study*			20
Enrichment Program I			
MICR6033001	Course Certification I	3	
MICR6034001	Technical Skill Enrichment I	4	
MICR6035001	Industrial Project I	9	
MICR6036001	Soft Skill Enrichment I	4	
MICR6001001	Elective Course for Specific Independent Study 1	8	
MICR6002001	Elective Course for Specific Independent Study 2	8	
MICR6003001	Elective Course for Specific Independent Study 3	6	
MICR6004001	Elective Course for Specific Independent Study 4	6	
MICR6005001	Elective Course for Specific Independent Study 5	6	
MICR6006001	Elective Course for Specific Independent Study 6	5	
MICR6007001	Elective Course for Specific Independent Study 7	5	
MICR6008001	Elective Course for Specific Independent Study 8	5	
MICR6009001	Elective Course for Specific Independent Study 9	5	
MICR6010001	Elective Course for Specific Independent Study 10	4	

Code	Course Name	SCU	Total
MICR6011001	Elective Course for Specific Independent Study 11	4	
MICR6012001	Elective Course for Specific Independent Study 12	4	
MICR6013001	Elective Course for Specific Independent Study 13	4	
MICR6014001	Elective Course for Specific Independent Study 14	4	
MICR6015001	Elective Course for Specific Independent Study 15	3	
MICR6016001	Elective Course for Specific Independent Study 16	3	
MICR6017001	Elective Course for Specific Independent Study 17	3	
MICR6018001	Elective Course for Specific Independent Study 18	3	
MICR6019001	Elective Course for Specific Independent Study 19	3	
MICR6020001	Elective Course for Specific Independent Study 20	3	
MICR6021001	Elective Course for Specific Independent Study 21	2	
MICR6022001	Elective Course for Specific Independent Study 22	2	
MICR6023001	Elective Course for Specific Independent Study 23	2	
MICR6024001	Elective Course for Specific Independent Study 24	2	
MICR6025001	Elective Course for Specific Independent Study 25	2	
MICR6026001	Elective Course for Specific Independent Study 26	2	
MICR6027001	Elective Course for Specific Independent Study 27	2	
MICR6028001	Elective Course for Specific Independent Study 28	2	
MICR6029001	Elective Course for Specific Independent Study 29	1	
MICR6030001	Elective Course for Specific Independent Study 30	1	
MICR6031001	Elective Course for Specific Independent Study 31	1	
MICR6032001	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.

Further Study Track

Code	Course Name	SCU	Total
Enrichment Program II			20
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	

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

No.	Course Code	Course Name	Minimal Grade
1.	CHAR6013	Character Building: <i>Pancasila</i>	B
2.	ENTR6511001	Entrepreneurship: Market Validation	C
3.	COMP6047	Algorithm and Programming*	C
4.	COMP6048	Data Structures*	C
5.	COMP6056	Program Design Methods*	C
6.	COMP6640001	Software Engineering*	C

No.	Course Code	Course Name	Minimal Grade
Streaming : Software Engineering			
7.	COMP6732001	Code Reengineering	C
8.	COMP6122001	Framework Layer Architecture	C
Streaming : Intelligent System			
7.	COMP6745001	Machine Learning	C
8.	COMP7116001	Computer Vision	C
Streaming : Interactive Multimedia			
7.	COMP8129001	User Experience	C
8.	COMP6583001	Computer Graphics	C
Streaming : Database Technology			
7.	COMP6734001	Big Data Processing	C
8.	COMP6746001	Data Mining	C
Streaming : Network Technology			
7.	COMP6735001	Network and System Programming	C
8.	COMP6591001	Portable Operating System Interface	C
Streaming : Internet of Things (Binus @Bandung)			
7.	COMP6653031	Embedded System	C
8.	COMP6627031	Portable Operating System Interface	C
Streaming : Digital Creative Technology (Binus @Malang)			
7	COMP6397004	User Experience	C
8	COMP6678004	Big Data Analytics for Business	C

*) Tutorial & Multipaper