Computer Science & Statistics

Introduction

Along with technological growth of computer at present, statistical technique becomes a tool which is widely used by many people to finish the problems better, such as problems in management area, research, business, marketing, quality operation, best quality, forecast, risk analysis of consumer satisfaction, environment and others make the contribution of computer science and statistics is progressively growing important. The combination of two study majors into one program is designed to maximize the learning opportunities for the student who chooses the double majors. To give working experience for student, we provide the facilities to practice in industry for 1 year in national and international companies besides 4 years they study in campus. We facilitate student to job training at industry, research with industry and entrepreneurship program.

Vision

A world class department in Computational Statistics based on ICT.

Mission

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

1. Educating students with fundamental knowledge & skills to apply Computational Statistics using ICT in acquiring business information for a career as a market researcher or business analyst.
2. Providing solid learning experience through creating the most creative and value-added talents of leaders for global community as well as conducting professional services to improve the quality of life.
3. Providing high impact research that positively contributing to the quality of life in Indonesia and the international community.

Program Objective

The objectives of the program are :

1. To provide students with a solid knowledge ranging from Fundamental Statistics and Computer Science to Computational Statistics and Database Technology.
2. To provide students with abilities conduct statistical analysis and marketing research to solve problem in related fields to be successful market researcher.
3. To prepare students with necessary skills in developing database and be expert in data mining to be excellence business analyst.

Graduate Competency

At the end of the program, graduates will be able to :

1. Apply knowledge and understanding of mathematical concepts, principles and theories relating to computer science knowledge.
2. Demonstrate knowledge and understanding of algorithm concepts, principles and theories relating to computer science knowledge.
3. Classify problems and to apply design and development principles for specific problems.
4. Classify criteria and specifications appropriate to specific problems, plan strategies for their solution and construct software system development.
5. Apply, analyze and solve problems using Fundamental Statistics.

6. Interpret, analyze, and create statistical solution in form of algorithm, using appropriate Database Technology.
7. Recognize, apply, and appraise statistical process.
8. Apply, analyze, formulate and evaluate problem in marketing research using advanced Computational Statistics.
9. Create and assess innovative database solution in order to solve real problems in economics, business and industry.
10. Design and evaluate data finance and data mining.

Prospective Career of the Graduates

The graduates of the double study program Computer Science and Applied Statistics are able to follow careers in:
1. Business (market researcher, forecasting analyst).
2. Management (business analyst, evaluator of company performance).
3. Information Technology area (database designer, system analyst).
4. Industry (decision making analyst, quality control analyst).
5. Finance and Accounting (risk analyst, profit growth analyst).

Curriculum

With reference to the Vision and Mission UBINUS, the role of Computer Science and Applied Statistics in the future, and its current standing in Indonesia, the study program will contain the following elements:
1. Solid education to increase statistical analysis capability and ability to extract information from any kind of data that emerge in databases.
2. The academic atmosphere that will facilitate students' learning in order that the students will develop skills in communicating their statistical analysis and skills in developing database.
3. An environment that fosters active learner independence and encourages students to be able to succeed in their professional career and in the fields related to Computer Science and Applied Statistics.

Furthermore, besides this department provides the means and expertise in Computer Science and Applied Statistics to prepare students for a career as a Market Researcher or Database Designer who be able to analyze any kind of data that emerge in databases to extract information, it also provides capability in developing Computer Science or Applied Statistics both in Indonesia and among the nations of the world in order to pursue higher degree of education.

Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6013	Character Building: Pancasila	2	20
	COMP6060	Programming Language Concepts	2	
	COMP6047	Algorithm and Programming	4/2	
	MATH6038	Calculus I	4	
	MATH6025	Discrete Mathematics	4	
	English University Courses I			
	ENGL6128	English in Focus	2	
	ENGL6130	English for Business Presentation	2	
2	CHAR6014	Character Building: Kewarganegaraan	2	20
	MATH6015	Applied Linear Algebra	4	
	MATH6039	Calculus II	4	
	COMP6048	Data Structures	4/2	
	STAT6026	Probability and Statistics	2	
	English University Courses II			
	ENGL6129	English Savvy	2	
	ENGL6131	English for Written Business Communication	2	
3	CHAR6015	Character Building: Agama	2	24
	STAT6018	Statistical Theory I	4	
	STAT6094	Statistical Computing Lab	2/2	
	STAT6016	Simulation Techniques	2	
	COMP6056	Program Design Methods	4	
	COMP6175	Object Oriented Programming	2/2	
	COMP6153	Operating System	2/2	
4	ISYS6169	Database Systems	4/2	24
	STAT6058	Sampling Techniques	2	
	STAT6047	Numerical Methods for Statistics	2	
	STAT6020	Statistical Theory II	4	
	STAT6011	Design and Analysis of Experiments	4	
	STAT6037	Non Parametric Statistics	2	
	STAT6085	Regression Analysis	2/2	
5	STAT6044	Categorical Data Analysis	2	24
	COMP6049	Algorithm Design and Analysis	4	
	STAT6043	Linear Model	2	
	ENTR6003	Entrepreneurship I	2	
	ISYS6172	Database Design	2/1	
	COMP6057	Software Engineering	4	
	STAT6051	Time Series Analysis	2/1	
	STAT6053	Multivariate Statistics	4	
6	STAT6054	Econometrics	2/1	24
	STAT6036	Stochastic Processes	4	
	COMP6065	Artificial Intelligence	4	
	CPEN6098	Computer Networks	2/2	
	COMP6176	Human and Computer Interaction	2/2	
	STAT6115	Statistical Quality Control*	2/1	
	STAT6055	Structural Equation Modeling	2	

Sem	Code	Course Name	SCU	Total
7	ENTR6004	Entrepreneurship II	2	24
	COMP6062	Compilation Techniques	4	
	STAT6105	Statistical Marketing Research*	4	
	STAT6040	Scientific Computation	4	
	STAT6031	Seminar	2	
	MATH6049	Mathematics of Finance	4	
	STAT6106	Statistical Process Control	4	
8	COMP6140	Data Mining	2/2	20
	ISYS6170	Data Warehouse	2/1	
	STAT6050	Survival Analysis	2/1	
	MOBI6021	Mobile Programming	2/2	
	COMP6064	Geographical Information System	2/1	
	COMP6051	Web Programming	2/1	
9	**Enrichment Program**		16	16
10	STAT6030	Thesis	6	6
			TOTAL CREDIT 202 SCU	

*) Entrepreneurship Embedded

English University Courses:

-) For 1st Semester : English University Courses I, student with score Binus University English Proficiency Test less than 500 will take English in Focus, and student with score test greater than or equal to 500 will take English for Business Presentation

-) For 2nd Semester: English University Courses II, student with score Binus University English Proficiency Test less than 500 will take English Savvy, and student with score test greater than or equal to 500 will take English for Written Business Communication

Enrichment Program (9th Semester):

-) Student will take one of enrichment program tracks (off campus).

Enrichment Internship Track

Code	Course Name	SCU	Total
STAT6090	Internship	8	16
STAT6091	Data Analysis in Industry	2	
STAT6092	Statistical Program in Industry	2	
STAT6093	EES in Statistics Industry	4	

Enrichment Entrepreneurship Track

Code	Course Name	SCU	Total
ENTR6292	Business Start Up	8	16
ENTR6206	Business Model & Validation in Statistics	2	
ENTR6207	Launching New Venture in Statistics	2	
ENTR6208	EES in Statistics	4	

Enrichment Research Track

Code	Course Name	SCU	Total
RSCH6225	Research Experience	8	
RSCH6156	Scientific Writing in Statistics	4	16
RSCH6157	Global EES in Statistics	4	

Enrichment Community Development Track

Code	Course Name	SCU	Total
CMDV6125	Community Outreach Project Implementation	8	
CMDV6074	Community Outreach in Statistics Project Design	4	16
CMDV6075	Employability and Entrepreneurial Skills in Statistics	4	

Enrichment Study Abroad Track*

Course Name		SCU	Total
Enrichment Program I			
GLOB6005	Elective Course for Study Abroad 1	4	
GLOB6006	Elective Course for Study Abroad 2	4	
GLOB6007	Elective Course for Study Abroad 3	4	
GLOB6008	Elective Course for Study Abroad 4	4	
GLOB6009	Elective Course for Study Abroad 5	2	
GLOB6010	Elective Course for Study Abroad 6	2	
GLOB6011	Elective Course for Study Abroad 7	2	16
GLOB6012	Elective Course for Study Abroad 8	2	
GLOB6013	Elective Course for Study Abroad 9	2	
GLOB6014	Elective Course for Study Abroad 10	2	
GLOB6015	Elective Course for Study Abroad 11	2	
GLOB6016	Elective Course for Study Abroad 12	2	

*) Transferred courses will be transferred based on credit transfer policies on study program with total of 16 credits.

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

No	Code	Course Name	Minimum Grade
1	CHAR6013	CB: Pancasila	B
2	ENTR6004	Entrepreneurship II	C
3	COMP6047	Algorithm and Programming*	C
4	COMP6048	Data Structures*	C
5	STAT6026	Probability and Statistics	C
6	MATH6039	Calculus II*	C
7	COMP6056	Program Design Methods*	C
8	STAT6020	Statistical Theory II*	C
9	ISYS6169	Database Systems	C
10	STAT6085	Regression Analysis	C
11	COMP6057	Software Engineering*	C
12	STAT6036	Stochastic Process	C
13	STAT6053	Multivariate Statistics*	C
14	STAT6115	Statistical Quality Control	C

*) Tutorial & Multipaper