

3.2.11 Bachelor of Computing in Information Systems

Objective

The four-year IS programme will provide students with a deep appreciation of the organisational context of ICT; strong proficiency in the design and development of value-adding infocomm solutions; and strong proficiency in the cost effective management of infocomm projects. This multidisciplinary education on information systems focuses on the application and management of information technology to enhance the effectiveness of organisations and businesses. It also analyses the impact and trends of technology and the relevant implications for the economy and society.

IS graduates will be equipped with relevant knowledge to target short- to medium-term positions such as techno-strategist, ICT solutions architect, systems integrator, business process consultant/analyst, and infocomm project manager. Possible employers include end users of ICT, system integrators, consulting firms, market research firms, regulatory agencies and investment advisors.

Specialisations

Students can also package their own specialisations by reading modules that satisfy the specialisation requirements. Specialisations provide students the opportunity to gain focused, in-depth knowledge in specialised areas where information systems are deployed.

To be awarded with specialisations, students have to complete 6 modules (24 MCs) in the list of modules included for a specialisation. Students can only choose to pursue one of the three specialisations: Electronic Commerce, Financial Technology or Digital Innovation.

Students with CAP of 4.00 or higher may opt to replace IS4010 Industry Internship Programme by CP4101 B.Comp. Dissertation.

Students who aim for Honours (Highest Distinction) must pass the CP4101. Students with CAP of 4.00 or higher after completing at least 70% (i.e. 112 MCs) of the MC requirement for the degree programme may opt to replace the IS4010 Industry Internship Programme by CP4101 (12 MCs). Note that the CP4101 project selection process takes place one semester ahead of the semester in which the students commence CP4101. Thus the students can tentatively select CP4101 projects; but the condition "CAP of 4.00 or higher after completing at least 70% (112 MCs) of the MC requirement for the degree programme" must be satisfied before they can commence CP4101 in lieu of IS4010.

NUS Overseas Colleges (NOC) - Information Systems

Students who attended NOC programme may :

1. count TR3201 Entrepreneurship Practicum (8 MCs) partially in lieu of CP4101 BComp Dissertation

- (4 out of 12 MCs) and replace one IS programme elective at level-3000 (4 MCs).
- count TR3202 Start-up Internship Programme (12 MCs) towards Industrial Experience Requirement (i.e. IS4010 Industry Internship Programme).
 - count TR3203 Start-up Case Study and Analysis (8 MCs) partially in lieu of CP4101 B.Comp Dissertation (8 out of 12 MCs).

University Scholars Programme (Information Systems)

Students in the University Scholars Programme who choose the Bachelor of Computing (Information Systems) major will take the IS programme, but with the following variations:

- They will read GER1000 Quantitative Reasoning (4 MCs) as compulsory module for the University Level Requirements (ULR). The remaining 16 MCs in ULR are replaced by the 3 USP Inquiry Modules and 1 USP Foundation module (i.e. University Scholars Seminar).
- They will not be required to read IS2101 Business and Technical Communication. It is replaced by USP Foundation module: Writing and Critical Thinking.
- They will have 20 (instead of 30) MCs under Unrestricted Electives
- They will read UROP modules (CP3208 and CP3209) in place of the IS team project module (IS4103). CP3208 and CP3209 are independent study modules (ISMs) which will be counted as 2 USP Inquiry modules in Sciences and Technologies Basket.
- They will be required to take 24 MCs (6 modules) from the Programme Electives. Among these modular credits, at least 12 MCs (3 modules) must be at level-4000.

Table 6: Summary of degree requirements for Bachelor of Computing (Information Systems)

MODULES	MCS	SUB TOTALS
UNIVERSITY LEVEL REQUIREMENTS Please refer to Section 3.2.1.		20
PROGRAMME REQUIREMENTS		108
Core Modules	72	
CS1010J Programming Methodology	4	
CS1231 Discrete Structures	4	
IS1103/X IS Innovations in Organisations and Society	4	
IS2101 Business and Technical Communication	4	
CS2030 Programming Methodology II	4	
CS2040 Data Structures and Algorithms	4	
CS2102 Database Systems	4	
CS2105 Introduction to Computer Networks	4	
IS2102 Enterprise Systems Architecture and Design	4	
IS2103 Enterprise Systems Server-side Design and Development	4	
IS3103 Information Systems Leadership and Communication	4	
IS3106 Enterprise Systems Interface Design and Development	4	
IS4100 IT Project Management	4	
IS4103 Information Systems Capstone Project	8	
MA1301/X Introductory Mathematics ¹	4	
MA1521 Calculus for Computing or MA1312 Calculus with Applications ²	4	
ST2334 Probability and Statistics ³	4	
Programme Electives (PE)	24	

MODULES	MCS	SUB TOTALS
<p>Choose 6 modules to make up 24 MCs from the list of Programme Electives below. 3 of the 6 modules must be at level-4000.</p> <p>Financial Technology</p> <p>IS4228 Information Technologies in Financial Services IS4302 Blockchain and Distributed Ledger Technologies IS4303 IT-Mediated Financial Solutions and Platforms</p> <p>IT Solutioning</p> <p>CS3240 Interaction Design IS3221 Enterprise Resource Planning Systems IS4204 IT Governance IS4234 Compliance and Regulation Technology IS4243 Information Systems Consulting IS4250 Healthcare IT and Analytics IS4301 Agile IT with DevOps</p> <p>IT Business Innovation and Entrepreneurship</p> <p>IS3251 Principles of Technology Entrepreneurship IS4242 Intelligent Systems and Techniques IS4241 Social Media Network Analysis IS4261 Designing Tech Business Innovations</p> <p>IT Security and Legal Aspects</p> <p>CS2107 Introduction to Information Security IFS4101 Legal Aspects of Information Security IS4231 Information Security Management IS4233 Legal Aspects of Information Technology</p> <p>Digital Business</p> <p>IS3150 Digital Media Marketing IS3240 Digital Platform Strategy and Architecture IS3261 Mobile Apps Development for Enterprise IS4151 Pervasive Technology Solutions and Development</p> <p>Specialisations</p> <p>Students can only choose to pursue one of the three specialisations below: To be awarded the Electronic Commerce Specialisation, students must satisfy the followings: <u>Compulsory modules:</u> IS3150 Digital Media Marketing IS4151 Pervasive Technology Solutions and Development IS4261 Designing IT-enabled Business Innovations Choose three modules from the following list of modules: IS3240 Digital Platform Strategy and Architecture IS3261 Mobile Apps Development for Enterprise IS4228 Information Technologies in Financial Services IS4231 Information Security Management IS4242 Intelligent Systems and Techniques IS4243 Information Systems Consulting To be awarded the Financial Technology Specialisation, students must satisfy the followings: <u>Compulsory modules:</u> IS4228 Information Technologies in Financial Services IS4302 Blockchain and Distributed Ledger Technologies IS4303 IT-Mediated Financial Solutions and Platforms Choose three modules from the following list of modules: IS3221 Enterprise Resource Planning Systems IS4231 Information Security Management IS4233 Legal Aspects of Information Technology IS4234 Compliance and Regulation Technology IS4242 Intelligent Systems and Techniques IS4301 Agile IT with DevOps To be awarded the Digital Innovation Specialisation, students must satisfy the followings: <u>Compulsory modules:</u> IS3240 Digital Platform Strategy and Architecture IS3251 Principles of Technology Entrepreneurship IS4261 Designing IT-Enabled Business Innovations Choose three modules from the following list of modules: IS3150 Digital Media Marketing IS3261 Mobile Apps Development for Enterprise IS4204 IT Governance IS4233 Legal Aspects of Information Technology IS4242 Intelligent Systems and Techniques IS4243 Information Systems Consulting</p>	<p>All modules are 4 MCs modules.</p>	

MODULES	MCS	SUB TOTALS
CP4101 B.Comp. Dissertation or IS4010 Industry Internship Programme ¹	12	
UNRESTRICTED ELECTIVES ²		32
Grand Total		160

1 MA1301/X is waived for students with A-level Mathematics. The 4 MCs gained from the waiver are added to the MCs for Unrestricted Electives. Students on double degree programmes who possess A-level Mathematics or its equivalent are not required to replace the missing MCs for MA1301 with unrestricted electives.

2 MA1521 to be chosen if student wants to keep the option of switching to the Computer Science stream.

3 For students taking Second Major in Statistics, they can replace ST2334 with ST2131 to meet first major requirement. For students taking the Second Major in Mathematics, they can replace ST2334 with both ST2131 and ST2132 to meet first major requirement. The MCs for ST2132 come from UE. For students taking the minor in Mathematics, they can replace ST2334 with ST2131 and take ST2132 as an unrestrictive elective to meet first major requirement.

4 Students can choose to take on any current 12 MCs or more internship-related programmes within the School of Computing (e.g., CP3880 Advanced Technology Attachment Programme (ATAP)) and/or within NUS (e.g., Innovative Local Enterprise Achiever Development (iLEAD) and NUS Overseas College (NOC)) in place of IS4010 Industry Internship Programme to satisfy the industry experience requirement.

5 Students are encouraged to use their unrestricted electives to take modules that will build up their business domain knowledge. Having a strong knowledge of a business domain will provide IS graduates a favorable advantage in employment opportunity in the industry.