Briefing on Bachelor of Computing Computer Science and Information Security 2015/16
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InfoSec Joint Academic Committee
1. Degree Requirements for BComp(CS)
2. Degree Requirements for BComp(InfoSec)
3. Tips on Study Planning
4. Q&A
Disclaimer: Information on this set of slides have been simplified to a form suitable for a 40-min presentation, and should not be treated as official degree requirements. Students should always refer to official SoC Website and NUS Bulletin for complete, up-to-date, information.
Degree Requirements
(cohort 15/16)

http://www.nus.edu.sg/registrar/nusbulletin/school-computing/bachelor-computing-computer-science
http://www.nus.edu.sg/registrar/nusbulletin/school-computing/bachelor-computing-information-security
BComp(CS) 
Degree Requirement 
(cohort 15/16) 

http://www.nus.edu.sg/registrar/nusbulletin/school-computing/bachelor-computing-computer-science
Special Programmes & Double Degree Programmes requirements are slightly different
“Programming Fundamentals”

CS1010 Programming Methodology → CS1020 Data Structures & Algorithms I → CS2010 Data Structures & Algorithms II
CS1101S Programming Methodology
CS1010 Programming Methodology
CS1020 Data Structures & Algorithms I
CS2010 Data Structures & Algorithms II
CS2020 Data Structures & Algorithms (Accelerated)
“Computer Systems”
“Theoretical Foundation”

CS1010 Programming Methodology

CS1020 Data Structures & Algorithms I

CS2010 Data Structures & Algorithms II

CS2105 Intro. to Computer Networks

CS2100 Computer Organisation

CS2106 Intro. to Operating Systems

CS3230 Design & Analysis of Algorithms

CS1231 Discrete Structures
“Software Engineering and Practices”
Industrial Experience

CP3880 ATAP

CP3200 SIP I → CP3201 SIP II

CP3200 SIP I → Industry Module^

IS4010

iLead

NOC

FYP^
Math and Science

MA1301 Introductory Mathematics

or

MA1521 Calculus for Computing

or

A-Level Mathematics

MA1101R Linear Algebra I

or

ST2334 Probability and Statistics

or

PC1221 Fundamental of Physics I

or

PC1222 Fundamental of Physics II

or

A-Level Physics

MA2213 Numerical Analysis I
MA2214 Combinatorics and Graph
ICM1121 Organic Chemistry I
CM1131 Physical Chemistry I
CM1417 Fund. of Chemistry
LSM1301 General Biology
LSM1302 Genes and Society
PC1221 Fundamental of Physics I
PC1222 Fundamental of Physics II
PC1141 Physics I
PC1142 Physics II
PC1143 Physics III
PC1144 Physics IV
PC1432 Physics IIE

pick 3*

ST2131 Probability
&
ST2132 Mathematical Statistics
Complete >= 12 MCs at Level-4000 or above

Satisfy at least one CS Focus Area: by completing three modules in Area Primaries (at least one at Level-4000 or above)
Algorithms & Theory

CS1231 Discrete Structures

CS3230 Design & Analysis of Algorithms

CS4232 Theory of Computation

CS4231 Parallel & Distributed Algorithms

CS4234 Optimisation Algorithms
Artificial Intelligence

- CS1231 Discrete Structures
- CS2010 Data Structures & Algorithms II
- ST2334 Probability and Statistics
- CS3243 Intro. to AI
- CS3244 Machine Learning
- CS4244 Knowledge-based Systems
- CS4246 AI Planning & Decision Making
Computer Networks

CS2105 Intro. to Computer Networks
CS3103 Comp. Networks Practice
CS4226 Internet Architecture
CS4222 Wireless Networking
ST2334 Probability and Statistics
Computer Security

CS1010
Prog. Methodology

CS2107
Intro. to Info. Security

CS4238
Computer Security Practices

CS2105
Intro. to Computer Networks

CS3235
Comp. Security

CS4236
Crypto Theory & Practice

CS2106
Intro. to Operating Systems

CS3230
Design & Analysis of Algorithms
Multimedia Information Retrieval

- CS2010: Data Structures & Algorithms II
- CS1020: Data Structures & Algorithms I
- CS3245: Information Retrieval
- CS2108: Intro to Media Computing
- CS4248: Natural Lang. Processing
- CS4242: Social Media Computing
- ST2334: Probability and Statistics
Computer Graphics & Games

CS1020 Data Structures & Algorithms I

CS3241 Computer Graphics

CS3242 3D Modelling & Animation

MA1101R Linear Algebra I

CS4247 Graphics Rendering Techniques

CS3247 Game Development

PC1221 Fundamental of Physics I

MA1521 Calculus for Computing

CS4350 Game Dev Project
Parallel Computing

- CS2100 Computer Organisation
- CS2106 Intro to OS
- CS2106 Intro to OS
- CS3211 Parallel & Concurrent Programming
- CS3210 Parallel Computing
- CS4223 Multi-core Architecture
- CS3230 Design & Analysis of Algo
- CS4231 Parallel & Distributed Algo
Focus Area Electives

Each area has a list of electives for students who want to learn more after meeting the focus area requirements

http://www.comp.nus.edu.sg/undergraduates/cs_cs_focus.html
Breadth & Depth

Complete $\geq 12$ MCs at Level-4000 or above

Satisfy at least one CS Focus Area: by completing three modules in Area Primaries (at least one at Level-4000 or above)
BComp(CS)
Study Planning
(cohort 15/16)

http://www.nus.edu.sg/registrar/nusbulletin/school-computing/bachelor-computing-computer-science
(A Rough Guideline)
Year 1

- IS1103 Computing & Society
- CS1010 Programming Methodology
- CS1020 Data Structures & Algorithms I
- CS2100 Computer Organisation
- CS1231 Discrete Structures

+ ULR/UE + Math + Sci

“The Basic Foundation”
how to solve basic computing problems through programming; how does a computer work; basic computing math; ethical/legal/social issues on computing
“The CS Core”
how to deal with complex systems and software;
advance algorithms and data structures;
develop soft skills
Year 3

- Industrial Experience
- Team Projects

+ ULR/UE + Math + Sci + Focus Area Primaries

“The Practical Year”
apply knowledge to projects, internships, NOC;
drilling deeper into focus areas
Year 4 + ULR/UE + Math + Sci + Focus Area

“Choose Your Own Adventure”
round up your training by pursuing advanced modules or projects of your interests
BComp(CS)
Degree Requirement
(cohort 15/16)

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Turing Programme
von Neumann Programme
Turing Programme

for students who like to tackle technically challenging (possible fundamental) problems
von Neumann Programme

for students who like to solve complex, real-world, computing problems
BComp(InfoSec) Degree Requirements (cohort 15/16)

120 MC Program Requirements

20 MC Unrestricted Electives

20 MC Uni-level Requirements
7 Tips for Study Planning

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1. Know Your Degree Requirements (including updates)
2. Talk To Your Mentor / Academic Advisor / UG Office / Curriculum Chair
3. Refer to Study Planner Online
4. Take Lower Level Modules Early
5. Make Friends
6.
Keep Options Open
7. Plan Early
8. Do Your Internship Early
Q&A

BComp(CS)

BComp(InfoSec)