

## UG Student Handbook - Appendix A

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The tables below list required, mandatory and optional modules for all our degree programmes for continuing students who started in 2016/17 or earlier. Mandatory modules must be passed with at least 40%. Required and optional modules are eligible for 'compensatory fails'. In exceptional circumstances it may be possible to select alternative modules with the approval of the Director of Studies.

### A1. Single Honours Programmes

#### G400 BSc (Hons) Computer Science

#### G403 BSc (Hons) Computer Science with a Year in Industry

G400/G403 YEAR 2			
Semester 1	Required	COMP201 COMP207 COMP213 COMP219	Software Engineering I Database Development Advanced Object Oriented Programming Artificial Intelligence
Semester 2	Required	COMP202 COMP208 COMP218	Complexity of Algorithms Group Software Project Decision, Computation and Language
	Options	2 from COMP281 COMP282 <sup>1</sup> COMP283 COMP284 COMP285	Principles of C and Memory Management Advanced Object Oriented C Languages Applied Database Management Scripting Languages Computer Aided Software Development (all 7.5 credits)

<sup>1</sup>COMP282 has a pre-requisite of COMP281.

G403 ONLY			
Year in Industry	Required	COMP299	Industrial Placement Year 3

G400/G403 FINAL YEAR			
Semester 1 & 2	Mandatory	COMP390	Hons Year Computer Science Project (30 credits)
Semester 1	Required	COMP309	Efficient Sequential Algorithms
	Options	2 from COMP304 COMP305 COMP319 COMP323 COMP327 COMP329 COMP331	Knowledge Representation and Reasoning Biocomputation Software Engineering II Introduction to Computational Game Theory Mobile Computing Robotics and Autonomous Systems Optimisation
Semester 2	Options	3 from COMP310	Multi-Agent Systems

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		COMP313 COMP315 COMP324 COMP326 <sup>2</sup>	Formal Methods Technologies for E-Commerce Complex Information and Social Networks Computational Game Theory and Mechanism Design
Semester 1&2	Option	COMP335 <sup>3</sup>	Communicating Computer Science

<sup>2</sup> COMP326 has a pre-requisite of COMP323.

<sup>3</sup> Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### G401 MEng (Hons) Computer Science

G401 YEAR 2			
Semester 1	Required	COMP201 COMP207 COMP213 COMP219	Software Engineering I Database Development Advanced Object Oriented Programming Artificial Intelligence
Semester 2	Required	COMP202 COMP208 COMP218	Complexity of Algorithms Group Software Project Decision, Computation and Language
	Options	2 from COMP281 COMP282 <sup>1</sup> COMP283 COMP284 COMP285	Principles of C and Memory Management Advanced Object Oriented C Languages Applied Database Management Scripting Languages Computer Aided Software Development (all 7.5 credits)

<sup>1</sup>COMP282 has a pre-requisite of COMP281.

G401 Year 3			
Semester 1 & 2	Mandatory	COMP390	Hons Year Computer Science Project (30 credits)
Semester 1	Required	COMP309	Efficient Sequential Algorithms
	Options	2 from COMP304 COMP305 COMP319 COMP323 COMP327 COMP329 COMP331	Knowledge Representation and Reasoning Biocomputation Software Engineering II Introduction to Computational Game Theory Mobile Computing Robotics and Autonomous Systems Optimisation
Semester 2	Options	3 from COMP310 COMP313 COMP315 COMP324 COMP326 <sup>2</sup>	Multi-Agent Systems Formal Methods Technologies for E-Commerce Complex Information and Social Networks Computational Game Theory and Mechanism Design
Semester 1&2	Option	COMP335 <sup>3</sup>	Communicating Computer Science

G401 Final Year			
Semester 1	Mandatory	COMP591	MEng Group Project (30 credits)
	Options	2 from COMP521 COMP522	Knowledge Representation Privacy and Security Advanced Algorithmic Techniques

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		COMP523 COMP528	Multicore and Multi-Processor Programming
Semester 2	Mandatory	COMP592	MEng Individual Project (30 credits)
	Options	2 from COMP524 COMP525 COMP526 COMP527 COMP532	Multi-Agent Systems Reasoning about Action and Change Applied Algorithmics Data Mining and Visualisation Machine Learning and BioInspired Optimisation

<sup>2</sup>COMP326 has a pre-requisite of COMP323.

<sup>3</sup>Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### G402 BSc (Hons) Computing with a Year in Industry

G402 Year 2			
Semester 1 & 2	Options	COMP211 and COMP212	Internet Principles (semester 1)
		<b>or</b> COMP219 and COMP222	Distributed Systems (semester 2)  Artificial Intelligence (semester 1)  Principles of Computer Games Design and Implementation (semester 2)
Semester 1	Mandatory	COMP201	Software Engineering I
	Required	COMP207 COMP213	Database Development Advanced Object Orientated Programming
Semester 2	Required	COMP208 COMP220	Group Software Project Software Development Tools
	Options	2 from COMP281 COMP282 <sup>1</sup> COMP283 COMP284	Principles of C and Memory Management Advanced Object Oriented C languages Applied Database Management Scripting Languages (all 7.5 credits)

G402 Year 3			
Year in Industry	Required	COMP299	Industrial Placement Year 3

G402 Final Year			
Semester 1 & 2	Mandatory	COMP390	Honours Year Computer Science Project (30 credit project)
Semester 1	Required	COMP319	Software Engineering II
	Options	2 from COMP323 COMP327 COMP329	Introduction to Computational Game Theory Mobile Computing Robotics and Autonomous Systems
Semester 2	Required	COMP313	Formal Methods
	Options	2 from COMP310 COMP315 COMP318	Multi-Agent Systems Technologies for E-Commerce Advanced Web Technologies
Semester 1&2	Options	COMP335 <sup>2</sup>	Communicating Computer Science

<sup>1</sup>COMP282 has a pre-requisite of COMP281.

<sup>2</sup>Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### G490 BSc (Hons) Electronic Commerce Computing

### G491 BSc (Hons) Electronic Commerce Computing with a Year in Industry

G490/G491 YEAR 2			
Semester 1	Mandatory	COMP211	Internet Principles
	Required	COMP201 COMP207 COMP213	Software Engineering I Database Development Advanced Object Oriented Programming
Semester 2	Mandatory	COMP215	E-Commerce Group Project
	Required	COMP212 COMP220	Distributed Systems Software Development Tools
	Options	2 from COMP281 COMP282 <sup>1</sup> COMP283 COMP284	Principles of C and Memory Management Advanced Object Oriented C languages Applied Database Management Scripting Languages (all 7.5 credits)

G491 ONLY			
Year in Industry	Required	COMP299	Industrial Placement Year 3

G490/G491 Final Year			
Semester 1 & 2	Mandatory	COMP394	Honours Year Electronic Commerce Computing Project (30 credit project)
Semester 1	Required	COMP319	Software Engineering II
	Options	2 from COMP323 COMP325  COMP327	Introduction to Computational Game Theory Algorithmic and Game Theoretic Foundations for Internet Economics Mobile Computing
Semester 2	Required	COMP315 COMP318	Technologies for E-Commerce Advanced Web Technologies
	Options	1 from COMP310 COMP324 COMP326 <sup>2</sup>	Multi-Agent Systems Complex Information and Social Networks Computational Game Theory and Mechanism Design

<sup>1</sup>COMP282 has a pre-requisite of COMP281.

<sup>2</sup>COMP326 has a pre-requisite of COMP323.

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### G500 BSc (Hons) Computer Information Systems

### G502 BSc (Hons) Computer Information Systems with a Year in Industry

G500/G502 YEAR 2			
Semester 1	Required	COMP201 COMP207 COMP213	Software Engineering I Database Development Advanced Object Oriented Programming
	Options	1 from COMP211 COMP219	Internet Principles Artificial Intelligence
Semester 2	Required	COMP208 COMP220	Group Project Software Development Tools
	Options	1 from COMP212 COMP222 <sup>1</sup> Plus 2 from COMP281 COMP282 <sup>2</sup> COMP283 COMP284	Distributed Systems Principles of Computer Game Design and Implementation  Principles of C and Memory Management Advanced Object Oriented C Languages Applied Database Management Scripting Languages (all 7.5 credits)

<sup>1</sup>COMP222 has a pre-requisite of COMP219.

<sup>2</sup>COMP282 has a pre-requisite of COMP281.

G502 ONLY			
Year in Industry	Required	COMP299	Industrial Placement Year 3

G500/G502 Final Year			
Semester 1 & 2	Mandatory	COMP390	Honours Year Computer Science Project
Semester 1	Options	3 from COMP304 COMP305 COMP319 COMP323 COMP327 COMP329	Knowledge Representation and Reasoning Biocomputation Software Engineering II Introduction to Computational Game Theory Mobile Computing Robotics and Autonomous Systems
		3 from COMP310 COMP313 COMP315 COMP318 COMP324	Multi-Agent Systems Formal Methods Technologies for E-Commerce Advanced Web Technologies Complex Information and Social Networks



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		COMP326 <sup>3</sup>	Computational Game Theory and Mechanism Design
Semester 1&2	Options	COMP335 <sup>4</sup>	Communicating Computer Science

<sup>3</sup>COMP326 has a pre-requisite of COMP323

<sup>4</sup>Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### G501 BSc (Hons) Internet Computing

### G503 BSc (Hons) Internet Computing with a Year in Industry

G501/G503 YEAR 2			
Semester 1	Mandatory	COMP211	Internet Principles
	Required	COMP201 COMP207 COMP213	Software Engineering I Database Development Advanced Object Oriented Programming
Semester 2	Mandatory	COMP216	Internet Computing Group Project
	Required	COMP212 COMP220 COMP281 COMP282 <sup>1</sup>	Distributed Systems Software Development Tools Principles of C and Memory Management (7.5 credits) Advanced Object Oriented C languages (7.5 credits)

<sup>1</sup>COMP282 has a pre-requisite of COMP281.

G503 ONLY			
Year in Industry	Required	COMP299	Industrial Placement Year 3

G501/G503 Final Year			
Semester 1 & 2	Mandatory	COMP395	Honours Year Internet Computing Project (30 credit project)
Semester 1	Required	COMP304 COMP319 COMP327	Knowledge Representation and Reasoning Software Engineering II Mobile Computing
Semester 2	Required	COMP310 COMP318	Multi-Agent Systems Advanced Web Technologies
	Options	COMP315 COMP324	Technologies for E-Commerce Complex Information and Social Networks
Semester 1&2	Option	COMP335 <sup>2</sup>	Communicating Computer Science

<sup>2</sup> Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### G610 BSc (Hons) Software Development

### G611 BSc (Hons) Software Development with a Year in Industry

G610/G611 YEAR 2			
Semester 1 & 2	Options	COMP211 and COMP212 <b>or</b> COMP219 and COMP222	Internet Principles (semester 1) Distributed Systems (semester 2) Artificial Intelligence (semester 1) Principles of Computer Game Design and Implementation (semester 2)
Semester 1	Mandatory	COMP201	Software Engineering I
	Required	COMP207 COMP213	Database Development Advanced Object Oriented Programming
Semester 2	Required	COMP208 COMP220	Group Software Project Software Development Tools
	Options	2 from COMP281 COMP282 <sup>1</sup> COMP283 COMP284	Principles of C and Memory Management Advanced Object Oriented C Languages Applied Database Management Scripting Languages (all 7.5 credits)

<sup>1</sup>COMP282 has a pre-requisite of COMP281.

G611 ONLY			
<b>Year in Industry</b>	Required	COMP299	Industrial Placement Year 3

G610/G611 Final Year			
Semester 1 & 2	Mandatory	COMP390	Honours Year Computer Science Project (30 credit project)
Semester 1	Required	COMP319	Software Engineering II
	Options	2 from COMP323 COMP327 COMP329	Introduction to Computational Game Theory Mobile Computing Robotics and Autonomous Systems
Semester 2	Options	3 from COMP310 COMP313 COMP318 COMP324	Multi-Agent Systems Formal Methods Advanced Web Technologies Complex Information and Social Networks
Semester 1&2	Option	COMP335 <sup>2</sup>	Communicating Computer Science

<sup>2</sup> Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### G700 BSc (Hons) Artificial Intelligence

### G701 BSc (Hons) Artificial Intelligence with a Year in Industry

G700/G701 YEAR 2			
Semester 1	Mandatory	COMP219	Artificial Intelligence
	Required	COMP201 COMP207 COMP213	Software Engineering I Database Development Advanced Object Oriented Programming
Semester 2	Mandatory	COMP214	Artificial Intelligence Group Project
	Required	COMP222	Principles of Computer Game Design and Implementation
	Options	1 from COMP202 COMP218 <b>PLUS</b> 2 from COMP281 COMP282 <sup>1</sup> COMP283 COMP284 COMP285	Complexity of Algorithms Decision, Computation and Language  Principles of C and Memory Management Advanced Object Oriented C Languages Applied Database Management Scripting Languages Computer Aided Software Development (all 7.5 credits)

G701 ONLY			
Year in Industry	Required	COMP299	Industrial Placement Year 3

G700/G701 Final Year			
Semester 1 & 2	Mandatory	COMP393	Honours Year Artificial Intelligence Project (30 credit project)
Semester 1&2	Option	COMP335 <sup>2</sup>	Communicating Computer Science
Semester 1	Options	3 from COMP304 COMP305 COMP329	Knowledge Representation and Reasoning Biocomputation Robotics and Autonomous Systems
Semester 2	Required	COMP310 COMP313 COMP324	Multi-Agent Systems Formal Methods  Complex Information and Social Networks

<sup>1</sup>COMP282 has a pre-requisite of COMP281.

<sup>2</sup>Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### A2. Joint Programmes

#### GG14 BSc (Joint Hons) Mathematics and Computer Science

#### GG16 BSc (Joint Hons) Mathematics and Computer Science with a Year in Industry

GG14/GG16 YEAR 2			
Semester 1	Options	2 from COMP201 COMP207 COMP213 COMP219	Software Engineering I Database Development Advanced Object Oriented Programming Artificial Intelligence
		2 from MATH201 MATH225 MATH227  MATH241 MATH243 MATH244 MATH261	Ordinary Differential Equations Vector Calculus with Applications in Fluid Mechanics Math Models: Microeconomics & Population Dynamics Metric Spaces and Calculus Complex Functions Linear Algebra and Geometry Introduction to Methods of Operational Research
Semester 2	Required	COMP202	Complexity of Algorithms
	Options	1 from COMP104 COMP218	Operating System Concepts Decision, Computation and Language
		2 from MATH206 MATH224 MATH228 MATH247 MATH248 MATH263 MATH264 MATH266 <sup>1</sup>	Group Project Module Introduction to the Methods of Applied Mathematics Classical Mechanics Commutative Algebra Geometry of Curves Statistical Theory and Methods I Statistical Theory and Methods II Numerical Methods

<sup>1</sup> MATH266 is highly recommended

GG16 ONLY			
<b>Year in Industry</b>	Required	COMP299	Industrial Placement Year 3

GG14/GG16 Final Year			
Computer Science modules: select 30 credits in semester 1 and 30 credits in semester 2			
Mathematics modules: select 30 credits in each semester			
Semester 1	Options	COMP304 COMP305 COMP309	Knowledge Representation and Reasoning Biocomputation Efficient Sequential Algorithms

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		COMP319 COMP323 COMP331 COMP391 <sup>1</sup>	Software Engineering II Introduction to Computational Game Theory Optimisation Final Year First Semester 15 Credit Project
		MATH322 MATH323 MATH324  MATH325 MATH332 MATH343 MATH344 MATH351 MATH362 MATH363 MATH367	Chaos and Dynamical Systems Further Methods of Applied Mathematics Cartesian Tensors and Mathematical Models of Solids and Viscous Fluids  Quantum Mechanics Population Dynamics Group Theory Combinatorics Analysis and Number Theory Applied Probability Linear Statistical Models Networks in Theory and Practice
Semester 2	Options	COMP310 COMP313 COMP315 COMP326 <sup>2</sup> COMP392 <sup>1</sup>	Computational Game Theory Formal Methods Technologies for E-Commerce Computational Game Theory and Mechanism Design Final Year Second Semester 15 Credit Project
		MATH326 MATH331 MATH342 MATH349 MATH361 MATH364 MATH366	Relativity Mathematical Economics Number Theory Differential Geometry Theory of Statistical Inference Medical Statistics Mathematical Risk Theory
Semester 1&2	Option	COMP335 <sup>3</sup>	Communicating Computer Science

<sup>1</sup>COMP391/392 - only one of these two modules may be selected

<sup>2</sup>COMP326 has a pre-requisite of COMP323

<sup>3</sup>Students who wish to choose this module will undergo an interview with the module co-ordinator before being selected.

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### GN34 BSc (Hons) Financial Computing (formally known as N300 E-Finance) G3N4 BSc (Hons) Financial Computing with a Year in Industry

GN34/G3N4 Year 2			
Semester 1	Required	ACFI201 ACFI213 COMP201 COMP207	Financial Reporting Financial Management Software Engineering I Database Development
Semester 2	Required	COMP215 COMP226 ECON241	E-Commerce Group Project Computer-Based Trading in Financial Markets Securities Markets
	Options	1 from ACFI202 MKIB225  <u>or</u> 2 from COMP283 COMP284 COMP285	Accounting Theory (15 credits) International Business (15 credits)  Applied Database Management ( 7.5 credits) Scripting Languages ( 7.5 credits) Computer Aided Software Development ( 7.5 credits)

G3N4 ONLY			
<b>Year in Industry</b>	Required	COMP299	Industrial Placement Year 3

GN34/G3N4 Final Year			
Semester 1 & 2	Mandatory	COMP396	Honours Year Automated Trading Project (30 Credit Project)
Semester 1	Required	ACFI314 COMP323	Quantitive Business Finance Introduction to Computational Game Theory
	Options	1 from ACFI309 COMP319 COMP331 EBUS301 MKIB351	Financial Reporting 2 Software Engineering II Optimisation E-Business Models and Strategy Global Strategic Management
Semester 2	Required	ACFI341 COMP315	Finance and Markets Technologies for E-Commerce
	Options	1 from ACFI302 COMP310 COMP326 <sup>1</sup>	Corporate Reporting and Analysis Multi-Agent Systems Computational Game Theory and Mechanism Design

<sup>1</sup>COMP391/392 - only one of these two modules may be selected

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### A3. Programmes Administered by Other Departments

**HH66 BSc (Hons) Computer Science and Electronic Engineering**

**HG6L BEng (Hons) Computer Science and Electronic Engineering with a Year in Industry**

**GHK6 MEng (Hons) Computer Science and Electronic Engineering:**

(Administered by the Department of Electrical Engineering and Electronics)

The table below lists the modules from Computer Science taken for this programme. Additional modules from the Department of Electrical Engineering and Electronics will be necessary to total 120 credits in each year of study. Please see the main part of the Student Handbook for further information about the Computer Science modules, including pre-requisites.

HH66/HG6L/GHK6 Year 2			
Semester 1	Required	COMP201 COMP207	Software Engineering I Database Development
Semester 2	Required	COMP124	Computer Systems

HG6L ONLY			
<b>Year in Industry</b>	Required	COMP299	Industrial Placement Year 3

Year 3 (HH66 & GHK6) and Year 4 (HG6L)			
Semester 1 & 2	Optional	COMP390	Honours Year Computer Science Project (30 credit project)
Semester 1	Options 3 from	COMP305 COMP319	Biocomputation Software Engineering II
Semester 2		COMP310 COMP313 COMP315	Multi-Agent Systems Formal Methods Technologies for E-Commerce

GHK6 Final Year			
Semester 1	2 or 2 modules from the year 3 list or from:	COMP521 COMP522 COMP523	Knowledge Representation Privacy and Security Advanced Algorithmic Techniques
Semester 2		COMP524 COMP525 COMP527	Safety and Dependability Reasoning about Action and Change Data Mining



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### Combined Honours - BCG0 Combined Honours (Science), L000 Combined Honours (SES) Y001 Combined Honours (Arts)

The table below lists the modules from Computer Science taken for these programmes. Additional modules from other subject/s will be necessary to total 120 credits in each year of study. Please see the main part of the Student Handbook for further information about the Computer Science modules, including pre-requisites.

Final Year BCG0, L000 and Y001			
Semester 1	3, 4 or 5 modules to be selected over both semesters	COMP304	Knowledge Representation and Reasoning
		COMP305	Biocomputation
		COMP319	Software Engineering II
		COMP323	Introductions to Computational Game Theory
		COMP391 <sup>3</sup>	Final Year 15 Credit First Semester Project
Semester 2		COMP310	Multi-Agent Systems
		COMP313	Formal Methods
		COMP315	Technologies for E-Commerce
		COMP392 <sup>3</sup>	Final Year 15 Credit Second Semester Project

<sup>1</sup>Recommended modules will be pre-registered but students may choose the alternative modules offered subject to the approval of Prof Prudence Wong.

<sup>3</sup>COMP391 or COMP392 may only be taken if 4 or 5 modules are chosen from Computer Science