



The Hong Kong Polytechnic University 香港理工大學

Department of Computing 電子計算學系

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## Programme Booklet

**Double Degree for Computing Students:  
BSc in Computing and BSc in Geomatics  
(Geo-IT)**

# Computing

# 電子計算

Programme Code: 61031-DLS and 61031-SLS

September 2006

**Graduation Requirement**

Pathway	Major / minor	Double major	Full degree plus major	Double degree
Credits	90	120	129	137
Year: FT	3	4	4	4
Year: Sandwich	4	5	5	5

**Indicative Study Pattern**

<b>Double Major Pathway (90/120 credits)</b>	
<b>Stage 1</b>	
<b>Sem 1</b>	201 Principles of Programming
	210 Discrete Structures
	212 Computer Organization and Systems
	AMA 211 Introduction to Calculus/Linear Algebra
	General Education 1 ( <b>2 credits</b> )
	ELC 3501 English for Engineering Students ( <b>1 credit per semester</b> )
<b>Sem 2</b>	211 Data and System Modeling
	304 Operating Systems
	305 Data Structures and Algorithms
	LSGI 2222 Fundamentals of GIS
	LSGI 2293 Computer Aided Drafting and Processing of Geomatics
	ELC 3501 English for Engineering Students ( <b>1 credit per semester</b> )
<b>S1-3</b>	Optional IC Training <i>31 credits</i>
<b>Stage 2</b>	
<b>Sem 1</b>	302 Foundations of Software Engineering
	311 Foundations of Database Systems
	312 Computer Communications Networks
	LSGI 2372 Surveying
	LSGI 228 Mapping
<b>Sem 2</b>	COMP 3-Elective 1
	COMP Elective 2
	COMP Elective 3
	LSGI 3244 Spatial Analysis
	General Education 2 ( <b>2 credits</b> )
<b>Sem 3</b>	Optional green card summer training ( <b>3 training credits</b> ) <i>29 credits</i>
<b>Year 3</b>	<i>Optional placement</i>
<b>Stage 3</b>	
<b>Sem 1</b>	451 Final Year Project ( <b>4 credits</b> )
	452 Computing Professionals in Society
	COMP Elective 4
	COMP 4-Elective 5
	LSGI 3242 Digital Terrain Modeling and Visualization
<b>Sem 2</b>	451 Final Year Project ( <b>5 credits</b> )
	COMP 4-Elective 6
	COMP 4-Elective 7
<b>Sem 3</b>	LSGI 3243 Geospatial Database and Data Infrastructure Optional green card summer training ( <b>3 training credits</b> ) <i>30 credits</i>
<b>Total</b>	<b>90 credits</b>

Stage 4	<i>Top-up self-financed year</i>
Sem 1	LSGI 326 Cartography
	LSGI 3321 Remote Sensing
	LSGI Elective 1
	LSGI Elective 2
	LSGI Elective 3
Sem 2	LSGI 2341 Survey Adjustment
	LSGI 3253 Integrated GIS Project
	LSGI 4212 Geomatics Business Management
	LSGI 4292 Internet and Mobile GIS
	LSGI Elective 4
Sem 3	Green card summer training if not completed ( <b>3 training credits</b> )
	<i>30 credits</i>
<b>Total</b>	<b>120 credits</b>

## Note:

- **3-Elective** means level 3 elective subject; **4-Elective** means level 4 elective subject; **Elective** refers to free electives (any level) offered by COMP.
- Level 3 and level 4 COMP elective subjects can be taken in any order.
- Students in the top-up year are eligible to receiving *credit-exemption* for certain elementary subjects.
- DD graduates are expected to satisfy the WIE elements for either major degree **and** the Green Card requirement of LSGI, which is worth 3 training credits. Green card can be obtained by DD student starting with COMP major in the summer of either year 2, 3 or 4.
- COMP **WIE** can be satisfied by either whole year placement (48 weeks in sandwich year) or one or more summer placement periods, as long as the total WIE credits (not counted towards the 90 credits) accumulated exceed the requirement of 4 credits.

<b>Full Degree Plus Major Pathway (99/129 credits)</b>	
<b>Stage 1</b>	
<b>Sem 1</b>	201 Principles of Programming
	210 Discrete Structures
	212 Computer Organization and Systems
	AMA 211 Introduction to Calculus/Linear Algebra
	General Education 1 ( <b>2 credits</b> )
	ELC 3501 English for Engineering Students ( <b>1 credit per semester</b> )
<b>Sem 2</b>	211 Data and System Modeling
	304 Operating Systems
	305 Data Structures and Algorithms
	LSGI 2222 Fundamentals of GIS
	LSGI 2293 Computer Aided Drafting and Processing of Geomatics
	ELC 3501 English for Engineering Students ( <b>1 credit per semester</b> )
<b>S1-3</b>	Optional IC Training
	<i>31 credits</i>
<b>Stage 2</b>	
<b>Sem 1</b>	302 Foundations of Software Engineering
	311 Foundations of Database Systems
	312 Computer Communications Networks
	303 Human Factors and User Interfaces <b>or</b> 309 System Programming
	LSGI 2372 Surveying
	LSGI 228 Mapping
<b>Sem 2</b>	COMP 3-Elective 1
	COMP Elective 2
	COMP Elective 3
	LSGI 2341 Survey Adjustment
	LSGI 3244 Spatial Analysis
	General Education 2 ( <b>2 credits</b> )
<b>Sem 3</b>	LSGI 236 Field Scheme I
	Optional green card summer training ( <b>3 training credits</b> )
	<i>38 credits</i>
<b>Year 3</b>	<i>Optional placement</i>
<b>Stage 3</b>	
<b>Sem 1</b>	451 Final Year Project ( <b>4 credits</b> )
	452 Computing Professionals in Society
	COMP Elective 4
	COMP 4-Elective 5
	LSGI 3242 Digital Terrain Modeling and Visualization
<b>Sem 2</b>	451 Final Year Project ( <b>5 credits</b> )
	COMP 4-Elective 6
	COMP 4-Elective 7
	LSGI 3243 Geospatial Database and Data Infrastructure
<b>Sem 3</b>	Optional green card summer training ( <b>3 training credits</b> )
	<i>30 credits</i>
<b>Total</b>	<b>99 credits</b>
<b>Stage 4</b>	<i>Top-up self-financed year</i>
<b>Sem 1</b>	LSGI 326 Cartography
	LSGI 3321 Remote Sensing
	LSGI Elective 1
	LSGI Elective 2
	LSGI Elective 3
<b>Sem 2</b>	320 Introduction to Internet Computing
	LSGI 3253 Integrated GIS Project
	LSGI 4212 Geomatics Business Management
	LSGI 4292 Internet and Mobile GIS
	LSGI Elective 4
<b>Sem 3</b>	Green card summer training if not completed ( <b>3 training credits</b> )
	<i>30 credits</i>
<b>Total</b>	<b>129 credits</b>

<b>Double Degree Pathway (137 credits)</b>	
<b>Stage 1</b>	
<b>Sem 1</b>	201 Principles of Programming
	210 Discrete Structures
	212 Computer Organization and Systems
	AMA 211 Introduction to Calculus/Linear Algebra
	General Education 1 ( <b>2 credits</b> )
	ELC 3501 English for Engineering Students ( <b>1 credit per semester</b> )
<b>Sem 2</b>	211 Data and System Modeling
	304 Operating Systems
	305 Data Structures and Algorithms
	LSGI 2222 Fundamentals of GIS
	LSGI 2293 Computer Aided Drafting and Processing of Geomatics
	ELC 3501 English for Engineering Students ( <b>1 credit per semester</b> )
<b>S1-3</b>	Optional IC Training
	<i>31 credits</i>
<b>Stage 2</b>	
<b>Sem 1</b>	302 Foundations of Software Engineering
	311 Foundations of Database Systems
	312 Computer Communications Networks
	<i>303 Human Factors and User Interfaces or 309 System Programming</i>
	LSGI 2372 Surveying
	LSGI 228 Mapping
<b>Sem 2</b>	COMP 3-Elective 1
	COMP Elective 2
	COMP Elective 3
	LSGI 2341 Survey Adjustment
	LSGI 3244 Spatial Analysis
	General Education 2 ( <b>2 credits</b> )
<b>Sem 3</b>	LSGI 236 Field Scheme I
	Optional green card summer training ( <b>3 training credits</b> )
	<i>38 credits</i>
<b>Year 3</b>	<i>Optional placement</i>
<b>Stage 3</b>	
<b>Sem 1</b>	451 Final Year Project ( <b>4 credits</b> )
	452 Computing Professionals in Society
	COMP Elective 4
	COMP 4-Elective 5
	LSGI 3242 Digital Terrain Modeling and Visualization
<b>Sem 2</b>	451 Final Year Project ( <b>5 credits</b> )
	320 Introduction to Internet Computing
	COMP 4-Elective 6
	COMP 4-Elective 7
	LSGI 3243 Geospatial Database and Data Infrastructure
<b>Sem 3</b>	Optional green card summer training ( <b>3 training credits</b> )
	<i>33 credits</i>
<b>Total</b>	<b>102 credits</b>
<b>Stage 4</b>	
<b>Sem 1</b>	LSGI 326 Cartography
	LSGI 3321 Remote Sensing
	LSGI 3343 Communication and Positioning
	LSGI Elective 1
	LSGI Elective 2
	LSGI Elective 3
<b>Sem 2</b>	<i>LSGI 4344 Geospatial Data Mining &amp; Knowledge Discovery or 417 Data Warehousing and Data Mining</i>
	LSGI 3253 Integrated GIS Project
	LSGI 4212 Geomatics Business Management
	LSGI 4292 Internet and Mobile GIS
	LSGI 333 Photogrammetry I ( <b>2 credits</b> )
	LSGI Elective 4

<b>Sem 3</b>	Green card summer training if not completed ( <b>3 training credits</b> )
	<i>35 credits</i>
<b>Total</b>	<b>137 credits</b>

**Tentative List of COMP Elective Subjects:**

Level	Subject
<b>Level 3 Broadening</b>	
	303 Human Factors and User Interfaces
	309 System Programming
	316 Object Oriented Methods for Information Systems Development
	318 Systems Simulation
	319 Introduction to Multimedia Computing
	320 Introduction to Internet Computing
	321 Introduction to E-business
	323 Foundations of Chinese Computing
	324 Project Methodology and Implementation
	325 Information System Management
<b>Level 4 Specialization</b>	
	406 Artificial Intelligence
	407 Computer Graphics
	408 Parallel and Distributed Computing
	416 Internetworking Protocols and Software
	417 Data Warehousing and Data Mining Techniques in Business and Commerce
	418 Electronic Commerce
	422 Multimedia Systems and Applications
	431 Business Process and Workflow Management
	432 Logistics Management
	433 Information Retrieval
	434 Computational Models
	435 Biometrics and Security
	436 Middleware and Distributed Objects
	437 Mobile Computing
	439 Game Programming
	440 Customer Relationship Management
	441 Software Testing and Quality Assurance
	442 Decision Support Systems
	443 Knowledge and Information Management
	444 Internet Infrastructure Security
	445 Software Process and Project Management
	446 Computational Finance
	447 Scientific Computing
	448 Virtual Reality and Applications

**Tentative List of LSGI Elective Subjects:**

Stage	Subject
<b>Stage 4</b>	
	LSGI 4321 Geoinformation for Urban and Regional Studies
	LSGI 4261 GIS-based Demographic Analysis
	LSGI 4371 Geo-IT in Logistics and Transportation
	LSGI 4302 Geo-IT in Cadastre and Land Management
	LSGI 4322 Geo-IT in Environmental Management
	LSGI 4213 GIS in Business and E-commerce
	LSGI 4344 Geospatial Data Mining & Knowledge Discovery

Note: COMP 417 and LSGI 4344 are mutually exclusive.