INFORMATION SYSTEMS:
CREATING TOMORROW’S BUSINESS INNOVATIONS

Assoc Prof Goh Khim Yong
Assoc Prof Hahn Jungpil
Department of Information Systems
School of Computing
National University of Singapore
Congratulations!
Welcome to
NUS Computing
Information Systems
Business Analytics
INFORMATION SYSTEMS
Develop organizational effectiveness through innovative application and management of technology

BUSINESS ANALYTICS
Combine functional knowledge of business domains with data analytic methodological skills
INFORMATION SYSTEMS
Information Systems Programme

ICT Solutioning
Technology
Management
Business
## Information Systems Programme

<table>
<thead>
<tr>
<th>Modules</th>
<th>Modular Credits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIVERSITY REQUIREMENTS</td>
<td>20</td>
<td>Read GET1006 Critical Thinking in the Information Age, within the Thinking and Expression pillar</td>
</tr>
<tr>
<td>PROGRAMME REQUIREMENTS</td>
<td>120</td>
<td>Two Options for Programme Electives</td>
</tr>
<tr>
<td>• Core Modules (80 MCs)</td>
<td></td>
<td>E-Commerce Specialisation</td>
</tr>
<tr>
<td>• Programme Electives (28 MCs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Industry Internship Programme (12 MCs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNRESTRICTED ELECTIVES</td>
<td>20</td>
<td>CP3201 Industry Seminar recommended</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>160</td>
<td></td>
</tr>
</tbody>
</table>
- CS1010J Programming Methodology
- CS1020 Data Structures and Algorithms I
- CS1231 Discrete Structures
- IS1103/FC Computing and Society
- IS1105 Strategic IT Applications
- CS2100 Computer Organisation
- CS2102 Database Systems
- CS2105 Introduction to Computer Networks
- IS2101 Business and Technical Communication
- IS2102 Requirements Analysis and Design
- IS2103 Enterprise Systems Development Concepts
- IS2104 Software Team Dynamics
- IS3101 Management of Information Systems
- IS3102 Enterprise Systems Development Project
- IS4100 IT Project Management
- ACC1002X Financial Accounting
- MA1301 Introductory Mathematics
  - MA1301 is waived for students with A-level Mathematics. The 4 MCs gained from the waiver are added to the MCs for Unrestricted Electives
- MA1521 Calculus for Computing or MA1312 Calculus with Applications
  - MA1521 to be chosen if student wants to keep the option of switching to Computer Science stream
- ST2334 Probability and Statistics
• **Option 1:** Choose **7 modules** to make up **28 MCs** from the list of PEs. 3 of 7 modules must be at 4000 level.

• **Option 2:** Choose **CP4101 B.Comp. Dissertation** (12 MCs) and **4 modules** to make up **28 MCs** from the list of PEs below.
  - IS3150 Digital and New Media Marketing
  - IS3220 Service Science
  - IS3221 Enterprise Resource Planning Systems
  - IS3222 IT and Customer Relationship Management
  - IS3223 IT and Supply Chain Management
  - IS3230 Principles of Information Security
  - IS3240 Economics of E-Business
  - IS3241 Enterprise Social Systems
  - IS3242 Software Quality Management
  - IS3243 Technology Strategy and Management
  - IS3250 Health Informatics
  - IS3251 Principles of Technology Entrepreneurship
  - IS3260 Gamification for Organisations and Individuals
• IS3261 Mobile Apps Development for Enterprise
• IS4150 Mobile and Ubiquitous Commerce
• IS4202 Global Virtual Project
• IS4203 IT Adoption and Change Management
• IS4204 IT Governance
• IS4224 Service Systems
• IS4225 Strategic IS Planning
• IS4226 IT Outsourcing and Offshoring Management
• IS4227 Enterprise Service-Oriented Architecture
• IS4228 Information Technologies in Financial Services
• IS4231 Information Security Management
• IS4232 Topics in Information Security Management
• IS4233 Legal Aspects of Information Technology
• IS4234 Control and Audit of Information Systems
• IS4240 Business Intelligence Systems
• IS4241 Social Media Network Analysis
• IS4243 Information Systems Consulting
• IS4250 Healthcare Analytics
• IS4260 E-Commerce Business Models

• CS2106 Introduction to OS
• CS3235 Computer Security
• CS3240 Interaction Design
• CS4880 Digital Entrepreneurship
• Complete 3 compulsory modules:
  • IS3150 Digital and New Media Marketing
  • IS4150 Mobile and Ubiquitous Commerce
  • IS4260 E-Commerce Business Models

• Choose 3 elective modules from the following list:
  • IS3222 IT and Customer Relationship Management
  • IS3240 Economics of E-Business
  • IS3241 Enterprise Social Systems
  • IS3243 Technology Strategy and Management
  • IS3261 Mobile Apps Development for Enterprise
  • IS4225 Strategic IS Planning
  • IS4228 Information Technologies in Financial Services
- Large-Scale Team-based Projects
  - IS3102 Enterprise Systems Development Project
- Internship Attachment
  - IS4010 Industry Internship Programme (IIP)
  - iLEAD Programme
  - NOC Programme
- Global Virtual Projects
  - IS4202 Global Virtual Project
# Information Systems

<table>
<thead>
<tr>
<th>Sem 1</th>
<th>Sem 2</th>
<th>Sem 3</th>
<th>Sem 4</th>
<th>Sem 5</th>
<th>Sem 6</th>
<th>May – July Vacation</th>
<th>Sem 7</th>
<th>Sem 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS1010J Programming Methodology</td>
<td>CS1020 Data Structures and Algorithms I</td>
<td>CS1231 Discrete Structures</td>
<td>CS2102 Database Systems</td>
<td>PE1</td>
<td>PE2</td>
<td></td>
<td>IS4100 IT Project Management</td>
<td>PE7</td>
</tr>
<tr>
<td>IS1103/FC Computing and Society</td>
<td>IS1105 Strategic IT Applications</td>
<td>CS2100 Computer Organisation</td>
<td>CS2105 Introduction to Computer Networks</td>
<td>ULR4</td>
<td>PE3</td>
<td></td>
<td>PE5</td>
<td>UE4</td>
</tr>
<tr>
<td>ULR1</td>
<td>IS2101 Business and Technical Communication</td>
<td>IS2102 Requirements Analysis and Design</td>
<td>IS2103 Enterprise Systems Development Concepts</td>
<td>ULR6</td>
<td>PE4</td>
<td></td>
<td>UE3</td>
<td>UE5</td>
</tr>
<tr>
<td>UE1</td>
<td>ULR2</td>
<td>ULR3</td>
<td>IS2104 Software Team Dynamics</td>
<td>UE2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>6 MCs</td>
<td>18 MCs</td>
<td>16 MCs</td>
</tr>
</tbody>
</table>

**TOTAL GRADUATION REQUIREMENTS = 160 MCs**
Business Analytics Programme

- Mathematics & Statistics
- Computing
- Business
- Data & Methods
<table>
<thead>
<tr>
<th>Modules</th>
<th>Modular Credits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIVERSITY REQUIREMENTS</td>
<td>20</td>
<td>Read GET1006 Critical Thinking in the Information Age, within the Thinking and Expression pillar</td>
</tr>
<tr>
<td>PROGRAMME REQUIREMENTS</td>
<td>120</td>
<td>Two Options for Programme Electives</td>
</tr>
<tr>
<td>• Core Modules (84 MCs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Programme Electives (24 MCs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Industry Internship Programme (12 MCs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNRESTRICTED ELECTIVES</td>
<td>20</td>
<td>CP3201 Industry Seminar recommended</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>160</td>
<td></td>
</tr>
</tbody>
</table>
- BT1101 Introduction to Biz Analytics
- IS1103/FC Computing and Society
- IS1105 Strategic IT Applications
- IS1112/FC E-Business Essentials
- CS1010S Programming Methodology
- CS1020 Data Structures and Algorithms I
- ACC1002X Financial Accounting
- EC1301 Principles of Economics
- MA1311 Matrix Algebra and Applications, or MA1101R Linear Algebra I
- MA1521 Calculus for Computing, or MA1102R Calculus
- MKT1003X Marketing

84 MCs
• BT2101 IT and Decision Making
• IS2101 Business and Technical Communication
• IE2110 Operations Research I, or DSC3214 Introduction To Optimisation
• ST2131 Probability
• ST2132 Mathematical Statistics
• BT3101 Business Analytics Capstone Project
• BT3102 Computational Methods for Business Analytics
• DSC3215 Stochastic Models in Management
• ST3131 Regression Analysis
• IS4240 Business Intelligence Systems
Option 1:
Choose 6 modules to make up 24 MCs from both List A and List B, with at least 2 modules from each list. 5 of 6 modules must be at 4000 level.

Option 2:
Choose BT4101 B.Sc. Dissertation (12 MCs) and 3 modules to make up 24 MCs from both List A and List B, with at least 1 module from each list. 2 of 3 modules must be at 4000 level.
• List A Electives (Functional):
  • BT4211 Data-Driven Marketing
  • BT4212 Search Engine Optimization and Analytics
  • IS3240 Economics of E-Business
  • IS4250 Healthcare Analytics
  • DSC3224 Dynamic Pricing and Revenue Management
  • DSC4213 Analytical Tools for Consulting
  • IE3120 Manufacturing Logistics
  • MKT4415C Seminars in Marketing: Market Analytics
- List B Electives (Methodological):
  - BT4221 Big Data Techniques and Technologies
  - BT4222 Mining Web Data for Business Insights
  - IS4241 Social Media Network Analysis
  - BSP4513 Econometrics: Theory & Practical Business Application
  - DSC3216 Forecasting for Managerial Decisions
  - IE4210 Operations Research II
  - ST4240 Data Mining
  - ST4245 Statistical Methods for Finance
- BT4101 B.Sc. Dissertation
• Large-Scale Team-based Projects
  • BT3101 Business Analytics Capstone Project
• Internship Attachment
  • IS4010 Industry Internship Programme (IIP)
  • iLEAD Programme
  • NOC Programme
<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
<th>May – July Vacation</th>
<th>Semester 7</th>
<th>Semester 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA1311 or MA1101R</td>
<td>MA1521 or MA1102R</td>
<td>ST2131 Probability</td>
<td>ST2132 Mathematical Statistics</td>
<td>BT3101 Business Analytics Capstone Project</td>
<td>IS4240 Business Intelligence Systems</td>
<td>IS4010 Industry Internship Programme (full-time)</td>
<td>IS4010 Industry Internship Programme (part-time)</td>
<td>PE5</td>
</tr>
<tr>
<td>BT1101 Introduction to Business Analytics</td>
<td>IS1112/FC E-Business Essentials</td>
<td>BT2101 IT and Decision Making</td>
<td>ST3131 Regression Analysis</td>
<td>BT3102 Computational Methods for Business Analytics</td>
<td>PE1</td>
<td>PE4</td>
<td>UE3</td>
<td></td>
</tr>
<tr>
<td>IS1103/FC Computing and Society</td>
<td>IS1105 Strategic IT Applications</td>
<td>MKT1003X Marketing</td>
<td>IS2101 Business and Technical Communication</td>
<td>ACC1002X Financial Accounting</td>
<td>PE2</td>
<td>PE5</td>
<td>UE4</td>
<td></td>
</tr>
<tr>
<td>CS1010S Programming Methodology</td>
<td>CS1020 Data Structures and Algorithms I</td>
<td>IE2110 Operations Research I or ULR3</td>
<td>DSC3214 Introduction to Optimisation or ULR4</td>
<td>DSC3215 Stochastic Models in Management</td>
<td>PE3</td>
<td>UE2</td>
<td>UE5</td>
<td></td>
</tr>
<tr>
<td>ULR1</td>
<td>ULR2</td>
<td>ULR3 or ULR4</td>
<td>EC1301 Principles of Economics</td>
<td>ULR5</td>
<td>UE1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20 MCs | 20 MCs | 20 MCs | 20 MCs | 20 MCs | 20 MCs | 6 MCs | 18 MCs | 16 MCs
BEYOND
THE CLASSROOM
A TIME TO EXPLORE
Beyond the Classroom

University Scholars Programme

Undergrad Research Opportunity Programme

Student Exchange Programme

200 NUS Partner Universities, including top universities, from over 40 countries!
BEYOND THE CLASSROOM

Learn to Lead

NUS Students’ Computing Club
A Constituent Club of the NUS Students’ Union

Explore Your Interests

NIJS .GDG

IEEE NUS Student Branch
nusieee.org
BEYOND THE CLASSROOM

Explore The Industry Through Internships

**25 Highest Paying Companies for Interns 2014**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Average Monthly Base Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Palantir</td>
<td>$7,012</td>
</tr>
<tr>
<td>#2</td>
<td>VMware</td>
<td>$6,966</td>
</tr>
<tr>
<td>#3</td>
<td>Twitter</td>
<td>$6,791</td>
</tr>
<tr>
<td>#4</td>
<td>LinkedIn</td>
<td>$6,230</td>
</tr>
<tr>
<td>#5</td>
<td>Facebook</td>
<td>$6,213</td>
</tr>
<tr>
<td>#6</td>
<td>Microsoft</td>
<td>$6,138</td>
</tr>
<tr>
<td>#7</td>
<td>eBay Inc</td>
<td>$6,126</td>
</tr>
<tr>
<td>#8</td>
<td>ExxonMobil</td>
<td>$5,972</td>
</tr>
<tr>
<td>#9</td>
<td>Google</td>
<td>$5,969</td>
</tr>
<tr>
<td>#10</td>
<td>Apple</td>
<td>$5,723</td>
</tr>
<tr>
<td>#11</td>
<td>Amazon.com</td>
<td>$5,631</td>
</tr>
<tr>
<td>#12</td>
<td>NVIDIA</td>
<td>$5,446</td>
</tr>
<tr>
<td>#13</td>
<td>Chevron</td>
<td>$5,424</td>
</tr>
<tr>
<td>#14</td>
<td>Adobe</td>
<td>$5,409</td>
</tr>
<tr>
<td>#15</td>
<td>ConocoPhillips</td>
<td>$5,357</td>
</tr>
<tr>
<td>#16</td>
<td>Salesforce</td>
<td>$5,158</td>
</tr>
<tr>
<td>#17</td>
<td>BLACKROCK</td>
<td>$5,049</td>
</tr>
<tr>
<td>#18</td>
<td>Yahoo!</td>
<td>$5,039</td>
</tr>
<tr>
<td>#19</td>
<td>Capital One</td>
<td>$4,850</td>
</tr>
<tr>
<td>#20</td>
<td>Qualcomm</td>
<td>$4,823</td>
</tr>
<tr>
<td>#21</td>
<td>NetApp</td>
<td>$4,691</td>
</tr>
<tr>
<td>#22</td>
<td>Autodesk</td>
<td>$4,684</td>
</tr>
<tr>
<td>#23</td>
<td>Intel</td>
<td>$4,648</td>
</tr>
<tr>
<td>#24</td>
<td>Juniper</td>
<td>$4,648</td>
</tr>
<tr>
<td>#25</td>
<td>Schlumberger</td>
<td>$4,634</td>
</tr>
</tbody>
</table>

Based on companies with at least 20 intern salary reports shared on Glassdoor between 1/24/12-10/31/14.

- **CP3201 Industry Seminar**
- **Student Internship Programme (SIP)**
- **Industry Internship Programme (IIP)**
- **Advanced Technology Attachment Programme (ATAP)**
- **NUS Overseas College (NOC)**
• Take part in **competitions & hackathons**
• Communicate with **professors & mentors**
• Acquire and learn **soft skills**
  • How to be an eloquent presenter?
  • How to be an effective communicator?
• Participate in **NUS Overseas College**
Information Systems: Typical careers

Business Analytics: Typical careers
Data Scientists, Business Intelligence Analysts, Quantitative Data Modelers, Marketing Analysts, Supply Chain Optimization Analysts, Decision Science Analysts, Revenue Optimization Analysts, IT Business Analysts, Web Analytics Consultants
<table>
<thead>
<tr>
<th>Degree Programme</th>
<th>Overall Employment</th>
<th>Full-time Employment</th>
<th>Mean Salary</th>
<th>Median Salary</th>
<th>25th Percentile</th>
<th>75th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Commerce</td>
<td>85.7%</td>
<td>85.7%</td>
<td>$3,386</td>
<td>$3,200</td>
<td>$3,000</td>
<td>$3,500</td>
</tr>
<tr>
<td>Information Systems</td>
<td>95.5%</td>
<td>92.0%</td>
<td>$3,789</td>
<td>$3,500</td>
<td>$3,100</td>
<td>$4,039</td>
</tr>
</tbody>
</table>
Enquiries:

bcomp@comp.nus.edu.sg

Please visit us at:

http://www.comp.nus.edu.sg/is
http://www.facebook.com/is.nus
https://www.linkedin.com/company/nuscomputing
INFORMATION SYSTEMS:
CREATING TOMORROW’S BUSINESS INNOVATIONS

Assoc Prof Goh Khim Yong
Assoc Prof Hahn Jungpil
Department of Information Systems
School of Computing
National University of Singapore