This course introduces software life-cycles: system modelling, requirements analysis and specifications, design techniques, implementation methodology, testings, maintenance and engineering laboratory. Analytical tools: software metrics, system performance measurement and evaluation. Management techniques: estimations, planning, project management, communication skills and documentations. Introductions to CASE tools and security.

本科介紹軟件生命週期：系統模型化、要求分析及規格、設計技術、實踐方案、測試、維護及工程實驗。分析工具：軟件指標、系統性能之測量及評估。管理技術：估計、計劃之管理、通信技巧及文件編制。計算機輔助系統工程（CASE）導論及保密性。

<table>
<thead>
<tr>
<th>Grade Descriptor</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>EXCELLENT – exceptionally good performance and far exceeding expectation in all or most of the course learning outcomes; demonstration of superior understanding of the subject matter, the ability to analyze problems and apply extensive knowledge, and skillful use of concepts and materials to derive proper solutions.</td>
</tr>
<tr>
<td>B</td>
<td>GOOD – good performance in all course learning outcomes and exceeding expectation in some of them; demonstration of good understanding of the subject matter and the ability to use proper concepts and materials to solve most of the problems encountered.</td>
</tr>
<tr>
<td>C</td>
<td>FAIR – adequate performance and meeting expectation in all course learning outcomes; demonstration of adequate understanding of the subject matter and the ability to solve simple problems.</td>
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<tr>
<td>D</td>
<td>Poor performance and not meeting expectation in one or more of the course learning outcomes; demonstration of basic understanding of the subject matter and the ability to solve simple problems.</td>
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</tbody>
</table>
MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration of partial understanding of the subject matter and the ability to solve simple problems.

F

FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration of serious deficiencies and the need to retake the course.

Equivalent Offering:
Units: 3 (Min) / 3 (Max) / 3 (Acad Progress)
Grading Basis: Graded
Repeat for Credit: N
Multiple Enroll: N
Course Attributes:

Topics:

Learning Outcomes:
1. Students will know how to apply state of the art methodology in software design, development, measurement and evaluation for large-scale software systems;
2. Students will know what are the following software engineering techniques:
   - software management;
   - software requirement engineering;
   - specification techniques;
   - structured design;
   - Unified Modeling Language (UML);
   - Design Patterns;
   - structured programming;
   - top-down design and development;
   - segmentation and modularization techniques;
   - information hiding;
- iterative enhancement;
- design and code inspection techniques;
- correctness;
- software validation and verification techniques;
- software metrics;
- software reliability measurement;
- data collection and analysis;
3. Students will learn how to apply software engineering techniques for the development of large software projects.

Course Syllabus:

This course introduces software life-cycles: system modelling, requirements analysis and specifications, design techniques, implementation methodology, testings, maintenance and engineering laboratory. Analytical tools: software metrics, system performance measurement and evaluation. Management techniques: estimations, planning, project management, communication skills and documentations. Introductions to CASE tools and security.

Assessment Type:

- Essay test or exam : 40%
- Lab reports : 30%
- Others : 10%
- Short answer test or exam : 20%

Feedback for Evaluation:

1. Results of assignments and examination;
2. Course evaluation and questionnaire;
3. Reflection of teachers;
4. Question-and-answer sessions during class;
5. Student consultation during office hours or online;

Required Readings:

- 

Recommended Readings:


OFFERINGS
1. CSCI3100 Acad Organization=CSD; Acad Career=UG

COMPONENTS
LEC : Size=30; Final Exam=Y; Contact=3
TUT : Size=30; Final Exam=N; Contact=1

ENROLMENT REQUIREMENTS
1. CSCI3100

Enrollment Requirement Group:
Not for students who have taken ENGG3820 or ESTR3308 or IERG3080;
Pre-requisite: CSCI1110 or 1120 or 1130 or 1510 or 1520 or 1530 or 1540 or ESTR1100 or 1102.
For 2nd-year entrants, the prerequisite will be waived.

New Enrollment Requirement(s):
Pre-requisite = no change
Exclusion = no change

CAF

eLearning hrs for blended cls 0
No. of micro-modules 0
Research components (UG) 0%
University theme/ priority Innovation and Design

<END OF REPORT>