SUBJECT DESCRIPTION FORM

Subject Title: Extreme Programming and Agile Software Development

Subject Code: COMP5252

Credit Value: 3

Pre-requisite: Nil

Recommended background knowledge:

CMM and Basic Java Programming
Students who are not familiar with programming require completing at least two core subjects

Mutual Exclusions: Nil

Learning Approach:

42 hours of class activities including - lecture, tutorial, lab, workshop seminar where applicable

Assessment:

Continuous Assessment	45%
Test, and Examination	55%

Objectives:

This subject introduces Agile Software Development, Extreme Programming and Software Development Rhythms and describes their unique features relative to traditional software practices. It also presents their applications in the real world and addresses their impacts on developing software.

Learning Outcomes:

After completing this subject, students should be able to:

1. understand the agile methodologies: extreme programming, scrum, feature driven programming, crystal method;
2. apply refactoring techniques;
3. understand pair programming and its characteristics;
4. start a XP project;
5. apply XP to a small project; and
6. relate CMMI and XP.

The Department reserves the right to update the syllabus contents. Please note that the learning approach for the same subject could vary slightly due to different delivery modes.

Keyword Syllabus:

- Overview of Agile Methodologies
  - Extreme Programming,
  - Scrum,
  - Feature Driven Programming
  - Crystal Method
  - Dynamic Systems Development Method
- eXtreme Programming
  - 12 practices
- Test-Driven Development
  - xUnit,
  - Different Patterns
- Refactoring
  - Bad Smells in Code
  - Building Test
  - Toward a Catalog of Refactoring
  - Composing Methods
- Pair Programming
  - Economics,
  - Productivity and Quality
  - Pair Learning
  - Characteristics of different people pair
- How to start up an XP project
  - The first Iteration
  - The others iteration
  - Deployment
- CMM and XP
- Software Development Rhythms

Text Book:

Lui, K.M. and Chan, KCC, Software Development Rhythms, John Wiley, 2008

References:

Beck, K., 2003, *Extreme Programming Explained: Embrace Change*, Addison-Wesley.
Cockburn, A., 2003, *Agile Software Development*, Addison-Wesley.
Marchesi, M., Succi, G., Wells, D. and Williams, L., 2002, *Extreme Programming Perspectives*, Addison Wesley
Williams, L. and Kessler, R., 2003, *Pair Programming Illuminated*, Addison-Wesley
Ambler, S. W., 2002, Agile modeling **:** effective practices for eXtreme programming and the unified process, New York, NY : Wiley
Martin, Robert C., 2003, Agile software development : principles, patterns, and practices**,** Upper Saddle River, N.J. : Prentice Hall

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