

CSC5021: Overview

The primary objective is to provide additional (**advanced/smart**) software engineering skills that may be of use to you in your projects.

The secondary objective is to reinforce your mastery of software engineering fundamentals.

The teaching approach is primarily PBL.

You will be given a project that asks you to demonstrate understanding of the advanced concepts, and ability to use them in solving a real-world problem.

You will have an exam that asks you to demonstrate a critical analysis of the interaction between these concepts.

CSC5021: Overview

<http://www-public.int-evry.fr/~gibson/Teaching/CSC5021/>



Teaching-CSC5021 for Dr J. Paul Gibson, LOGiciels-Réseaux (LOR), T&MSP SudParis, France.

Advanced Software Engineering for Smart Devices

This module is a core part of the 2nd year of the MSc programme *Software Engineering and Ambient Intelligence* ([Internal Moodle Link](#), [External TSP Link](#)).

The material will be uploaded dynamically: the teaching approach is based on PBL and much of the learning will be through interaction/group work during the assigned lecturing time. (Please check the website for updates before every lecture.)

Assessment

Practical Project Work (50%) - to be decided

The project code and documentation should be submitted (electronically) by Friday 19th December.

Please also note that you are required to use tools for documentation and unit testing. We recommend [CUnit](#) and [Doxygen](#), but you are free to use others if you think they are more suitable.

You are encouraged to re-use code that you believe will help you to implement your solution. All re-used code must be documented as such, and you are advised to comprehensively test such code against your specific requirements. Please explicitly specify whether code has been fork-reused or reference-reused (see <http://sharednow.blogspot.com/2011/05/its-not-just-reuse.html>). Please note that plagiarism will be penalised (see [Software Reuse and Plagiarism: A code of practice](#)).

Exam (50%)

I plan to organise your exam for the 2nd week of January. This will be an essay question (with access to books/web/notes)

Sessions

Sessions are a mix of problem-based learning, group project work, directed practicals, interactive lectures and traditional lectures. There is no preset format - the lecturer organises the style and content of each session depending on the needs of the class.


Session 1: Tuesday 1st October (13h45, C106) - Introducing Aspects


Lecture Slides

Introduction To CSC502  pdf,  ppt

A problem with aspects  pdf,  ppt

Additional reading material

 pdf *Aspect-oriented programming*, Gregor Kiczales, John Lamping, Anurag Mendhekar, Chris Maeda, Cristina Lopes, Jean-Marc Loingtier and John Irwin, published at ECOOP'97.

 pdf *The paradoxical success of aspect-oriented programming*, Friedrich Steimann, published at OOPSLA'06.

Useful Links

 html AOSD.net

Session 2: Wednesday 8th October (9h00, C106) - AspectJ

This session will have to be rescheduled

Session 3: Tue 15 October (13h45, C106) - Concurrency, Parallelism and Real-Time

Session 4: Tuesday 22 October (13h45, C106) - Parallel Development Problems

Session 5: Wednesday 29 October (13h45, C106) - Service Oriented Development and/or Open Source Issues