

THE AMERICAN UNIVERSITY OF PARIS – Undergraduate syllabus

<u>COURSE TITLE:</u>	Introduction to Computer Programming II	<u>COURSE NO:</u>	CS 1050
<u>PREREQUISITES:</u>	CS 1040	<u>SEMESTER:</u>	Spring 2012
<u>PROFESSOR:</u>	Claudia Roda - http://ac.aup.fr/roda/	<u>CREDITS:</u>	5
<u>CLASS SCHEDULE:</u>	Monday 12h10 – 13h30, Thursday 12h10 to 13h30 and 13h45 to 15h05	<u>ROOM NO:</u>	4
<u>OFFICE HOURS:</u>	By appointment: croda@aup.fr or mailbox at Grenelle.	<u>PERIOD (S):</u>	M3, R3,4
<u>OFFICE NUMBER:</u>	Office:G45		
<u>OFFICE TEL EXT:</u>	extension 701		
<u>MAILBOX</u>	Grenelle		
<u>LOCATION:</u>			

COURSE DESCRIPTION: CS 1050 is the second part of foundation course for the Computer Science degree programme. Successful students of both sections will have a thorough knowledge of the computer language Java, the systematic development of programs, problem solving and a knowledge of some of the fundamental algorithms of computer science. Emphasis is on problem solving using sophisticated tools to model the world to achieve an appreciation of similarities (e.g. the concept of inheritance), of different aspects of the same object (e.g. polymorphism, interfaces), and of uncertainty (e.g. managing exceptions). Working in teams, achieve reusability, and scalability of systems are central learning goals for this course. There will be a considerable amount of practical work; and all students will be expected to produce a final project. Students should allow at least eight hours per week for this. All classes will take place in the Computer Laboratory so that it will be possible to experiment and build-on all the theories and algorithms introduced. For a more detailed description of the course please refer to the course Web site: <http://www.ac.aup.fr/roda/cs150>. Note that content schedule, assignments, readings, etc. are updated online during the semester therefore you should make sure you check the course site regularly.

STUDENT LEARNING GOALS: Continuing the learning path established in the previous programming course, Introduction to Programming, this course aims at supplying students with more sophisticated tools so that they can design and implement solutions to a wider range of problems. Larger problems are addressed with the aim to give students an appreciation of how OOP is suitable for team development, and for the creation of reusable and scalable systems. In addition to the concepts of encapsulation, data hiding, data abstraction, and message passing, introduced in the previous course, students will learn about polymorphism.

Measurable Outcomes: Upon completing this course students should be able to:

- Understand and use essential, but more advanced, concepts of OOP and their implementation in Java, such as inheritance, polymorphism, error handling.
- Describe, in English, the properties of systems they design or analyse.
- Design and implement appropriate class structures for a given problem using inheritance.
- Design and implement robust programs using the Java exceptions mechanism (exception in the API, functioning of the call stack, exception syntax and semantics)
- Store and retrieve data to and from files, including streams abstractions and Java serialization mechanisms. If time allows XML serialization mechanisms will also be introduced.
- Design and implement simple graphical user interfaces.

Work in a team to design and develop a medium size program. Appreciate the importance of appropriate definition of APIs.

TEXTBOOKS:

REQUIRED: Java Software Solutions, Lewis & Loftus (6th edition) Pearson – Addison Wesley

All material covered in class is available in the course web site: <http://ac.aup.fr/roda/cs150>

ATTENDANCE: Because the course is based on hands-on experience, students are expected to attend all lectures and participate in class.

HOMEWORK ASSIGNMENTS: The homework assignments will each be designed to develop and test skills and knowledge related to the immediately preceding classes. Whilst they do not constitute a portion of the final grade, their main purpose is to help students to develop problem solving skills and assess their own weaknesses. Solutions to homework assignments will be discussed in class immediately after the due date.

FINAL PROJECT: The project will involve developing a program to solve a significant problem. The project solution must be accompanied by a written report.

GRADING: The grading scheme is as follows:

In class tests	45%
Class participation	5%
Final Examination and/or project	50%

ATTENDANCE POLICY:

Students studying at The American University of Paris are expected to attend ALL scheduled classes, and in case of absence, should contact their professors to explain the situation. It is the student's responsibility to be aware of any specific attendance policy that a faculty member might have set in the course syllabus. The French Department, for example, has its own attendance policy, and students are responsible for compliance. Academic Affairs will excuse an absence for students' participation in study trips related to their courses.

Attendance at all exams is mandatory.

IN ALL CASES OF MISSED COURSE MEETINGS, THE RESPONSIBILITY FOR COMMUNICATION WITH THE PROFESSOR, AND FOR ARRANGING TO MAKE UP MISSED WORK, RESTS SOLELY WITH THE STUDENT.

Whether an absence is excused or not is ALWAYS up to the discretion of the professor or the department. Unexcused absences can result in a low or failing participation grade. In the case of excessive absences, it is up to the professor or the department to decide if the student will receive an "F" for the course. An instructor may recommend that a student withdraw, if absences have made it impossible to continue in the course at a satisfactory level.

Students must be mindful of this policy when making their travel arrangements, and *especially during the Drop/Add and Exam Periods.*

ENGLISH LANGUAGE PROFICIENCY STATEMENT: As an Anglophone university, The American University of Paris is strongly committed to effective English language mastery at the undergraduate level. Most courses require scholarly research and formal written and oral presentations in English, and AUP students are expected to strive to achieve excellence in these domains as part of their course work. To that end, professors include English proficiency among the criteria in student evaluation, often referring students to the university Writing Lab where they may obtain help on specific academic assignments. Proficiency in English is monitored at various points throughout the student's academic career, most notably during the admissions and advising processes, while the student is completing general education requirements, and during the accomplishment of degree program courses and senior theses.

OUTLINE: see course web site: <http://ac.aup.fr/roda/cs150>