Introduction to Programming I

Course Administrative Details

Course Title	Introduction to Programming I		
Instructor(s)	PI: Victor Rivera SI: Manuel Mazzara	Instructor's e-mail	v.rivera@innopolis.ru m.mazzara@innopolis.ru
Course #	100	Course Type	Core
Faculty	Computer Science and Engineering	Major	Computer science
Academic year	2016-2017	Semester Offered	Fall
No. of Credits	6 ECTS	Total workload on average	12 hrs. per week inc. 8 hrs. of self-study
Lecture Hours	2 per week	Lab Hours	2 per week
Language	English	Frequency	Weekly
Target Audience	Bachelors	Anticipated Enrollment	130 students
Studying year	1		
Grading Mode	A, B, C, D	Keywords	Programming, Control Structures, Functions-Methods, Correctness of programs, OOP

Course outline

The Introduction to Programming course teaches the fundamental concepts and skills necessary to perform programming at a professional level. Students will learn how to master the fundamental control structures, data structures, reasoning patterns and programming language mechanisms characterizing modern programming, as well as the fundamental rules of producing high-quality software. They will acquire the necessary programming background for later courses introducing programming skills in specialized application areas.

Course Delivery

The course consists of two weekly hours of lectures and two weekly hours of exercise sessions for fifteen weeks starting from August 15, 2016. There is a mid-term exam, a final examination, 3 assignments and biweekly quizzes (not to be graded)

Prerequisite courses

None.

Required background knowledge

The course is intended to be self-contained. Basic knowledge of logic and discrete mathematics is a plus.

Course structure

IA – Individual Assignment, Q – Quiz

Week# / Date	Topic	Assignments and Quizzes
Week 1	Introduction and overview	
Week 2	Objects	IA-1 out
Week 3	Interface and Contracts	Q-1
Week 4	Control Structures I	
Week 5	Object Creation	Q-2
Week 6	Reference Assignments	IA-1 due and IA-2 out
Week 7	Abstraction	Q-3
Week 8	Midterm	
Week 9	Control Structures II	
Week 10	Dynamic Model	Q4
Week 11	Recursion	
Week 12	Inheritance	Q-5 and IA-2 due and IA-3 out
Week 13	Polymorphism and Dynamic Binding	
Week 14	Guest Lecture	
Week 15	Wrap-up	IA-3 due

Textbook(s)

Bertrand Meyer: Touch of Class, Learning to Program Well with Objects and Contracts, Springer 2009, ISBN: 978-3-540-92144-8

Reference Materials

Lecturing and lab slides and material will be provided

Computer Resources

Students should have laptops with basic software for reading and editing document. The programing language for this course is Eiffel Studio. Instructions on how to install it will be provided in the first week of the course.

Laboratory Exercises

Week# / Date	Lab Topic
Week 1	Programming Language Installation: Getting familiar with the environment
Week 2	Basics of Programming
Week 3	Objects
Week 4	Interface and Contracts
Week 5	Control Structures I
Week 6	Object Creation
Week 7	Reference Assignments
Week 8	Midterm will be solved during the Lab Session
Week 9	Abstraction
Week 10	Control Structures II
Week 11	Dynamic Model
Week 12	Recursion
Week 13	Inheritance
Week 14	Polymorphism and Dynamic Binding
Week 15	Exercises for preparation for final exam

Laboratory Resources
No laboratory resources other than laptops are required for this course.

Grading criteria
Mid-term Exam (40%), Final Exam (40%), Assignments (20%).
Grading criteria for Assignments
>   IA-1 (6%)
>   IA-2 (6%)
>   IA-3 (8%)

Late Submission Policy
This policy will be strictly applied in this course. If a personal emergency should arise that affects your ability to turn in an assignment in a timely fashion, you must contact the course instructor BEFORE the deadline to get a "Special Late Submission Approval" from the course instructor. Without the "Special Late Submission Approval" submissions will be still accepted up to 48 hours late, but with a 50% penalty. No "Special Late Submission Approval" will be granted after the deadline. All late submissions should be submitted by email directly to the instructors.

Exam Policy
If two or more students are caught communicating for any reason during exams (including mid-terms) they will be asked to leave the room and their exam will be failed. Same will happen for unauthorized use of devices.

Cooperation Policy and Quotations
If a submitted report contains work other than student's one it is necessary to explicitly acknowledge the source. It is encouraged to refer and quote other works, but it has to made clear which words and ideas are property and creation of the student, and which ones have come from others (which must not correspond to more than 30% of the work). If two or more reports show evidence of being produced by unauthorized cooperative work, i.e. copied from fellow students, they will be all failed without further investigation on who produced the results and who actually copied.