New Jersey Institute of Technology
Digital Commons @ NJIT

Informatics Syllabi

NJIT Syllabi

Fall 2019

IT 114-453: Advanced Programming for Information Technology

Maura Ann Deek

Follow this and additional works at: https://digitalcommons.njit.edu/info-syllabi

IT 114 – Advanced Programming for Information Technology

1. Opening Note:

This section of IT 114 is offered via "Canvas". The material covered will be the same as in the regular sections of IT 114. A substantial time investment into the course, on the order of 5-7 hours a week or more, must be expected (viewing the slides, participating in the electronic conference weekly discussions and projects).

Weekly discussion assignments and projects will take place continuously in "Canvas", NJIT's learning management system. You will be expected to sign online at least two times a week to review current and new content.

It is my goal to give you as much information via this syllabus, which I expect will remain unchanged. Should there be any need to make any modifications we will discuss so as a group and resolve.

2. Personnel Instructor:

Maura Ann Deek
Office: 3803 Guttenberg Information Technologies Center (GITC)
Phone: 973-596-5764
Office Hours: online
E-mail: maura.deek@njit.edu

Advanced Programming for Information Technology
Credits: 3
Prerequisite: CS 113 – Introduction to Computer Science I

Description: This course develops a broader and deeper understanding of the concepts and tools of IT providing a foundation for later work. It focuses on problem solving using object-oriented, event-driven, and networked programming. Topics include classes, objects, GUI's, events, sockets, client/server programming, multithreading, multimedia, exception handling and IO. A modern development environment and programming language are used to realize the concepts introduced.

Goals: To build further depth on the foundational breadth developed in CS113.

To develop problem solving techniques, software development concepts, and IT skills as requisite knowledge to build on throughout the remaining IT core courses.

To understand the facilities and constructs of the programming language Java as a tool for developing IT related applications.

4. Topics

Objects (Review) and Records

Exception Handling

JavaFX Basics

Event Driven Programming

JavaFX UI Controls and Multimedia

Recursion

Sorting, Searching and Passing Arrays via Methods

Stacks, Queues and Priority Queues

Binary Trees

Networking

Multithreading and Parallel Programming

5. Textbook

Liang, Y. Daniel, Introduction to JAVA Programming Eleventh Edition Comprehensive Version, Prentice Hall, 2011 ISBN: 0-13-467094-9

6. Assignments

Reading:

It is required that you read the textbook chapters in the above book. Reading assignments will be posted on a weekly basis.

Homework:

Homework is of two kinds:

a) Weekly participation: Discussion postings about what you learned from each week's lesson.

b) Programming projects: There will be 5 programming projects posted on the system to be submitted electronically.

7. Examinations

There will be a midterm and final exam given on the Newark campus. Exact date and time will be posted in "Canvas" on the course calendar and will be communicated electronically under the Week 0: General Course Information module.

8. Grading

Midterm: **25 %**
Final: **30 %**

Interaction homework and class participation: **20%**
Programming projects: **25 %**

9. Late policies

Due to the nature of this course, late submission of Interaction Homework and Projects will have penalties applied.

An assignment/project will be considered **LATE** if it is not submitted by the given deadline (**DATE and TIME**).

The **penalties** are as follows:

1 point per day will be deducted for a late submission of an **Interaction Homework** (unless you have a good reason, such as documented illness).

2 points per day will be deducted for a late submission of a Project (unless you have a good reason, such as documented illness).

There will be **NO EXCEPTION** to this policy. Please manage your time appropriately.

10. Academic Integrity

The work you do and submit is expected to be the result of **your effort ONLY**. You may discuss the high level (general) solution of a problem with a colleague or a tutor. However, **cooperation should not result in one or more students having possession of a copy of all or part of a program written by another student or tutor**. Furthermore, the use of publicly available code is allowed in a very limited manner and requires attribution (use appropriate citations). **No assignment/project should contain more than ~15% of code** that is obtained from sources other than your own creation.

The penalty for violating the university's honor code includes immediate referral to the Dean of Students in all cases and may include failure in the course and probation.

11. Computing Needs

You will be using your own Java compiler on your notebook (or any other PC available to you).

12. Lecture Details

The course will cover 1 lecture per week (topics can be found in text described above) in the following order

Schedule

Week	Topics to be Covered
1	Selection and Loops (Review)