



# THE UNIVERSITY OF WINNIPEG

## APPLIED COMPUTER SCIENCE

**Course Number - ACS-1904-001**

**Course Name – Programming Fundamentals II**

### **Instructor Information**

**Instructor:** Prof. Sergio G. Camorlinga

**Office:** 3D29

**E-mail:** s.camorlinga@uwinnipeg.ca

**Office Hours:** Th: 16:00 - 17:00 p.m.  
or by email appointment

**Class Meeting Time:** Tu, Th: 11:30 am – 12:45 pm **Room No:** 3D04

**Lab Meeting Time (with teaching assistant):** Fridays 9:45 am – 11:00 am or 12:15 pm -1:30 pm

**Course Web Page:** <https://courses.acs.uwinnipeg.ca/1904-001>

**Instructor's Home Page:** <https://www.acs.uwinnipeg.ca/scamorlinga>

### **Important Dates**

First Class:

Tu Sep 5<sup>th</sup>, 2017

Reading Week (no classes)

Su Oct 8<sup>th</sup> – Sat Oct 14<sup>th</sup>, 2017

Midterm Exam:

Tu Oct 24<sup>th</sup>, 2017

Final Withdrawal Date w/o academic penalty: Tu Nov 10<sup>th</sup>, 2017

(A minimum of 20% of the work on which the final grade is based will be evaluated and available to the student before the voluntary withdrawal date)

Last Class:

Th Nov 30<sup>th</sup>, 2017

Final Exam:

Tu Dec 12<sup>th</sup>, 2017 @ 9:00 am

### **Course Objectives/Learning Outcomes**

This course examines more advanced programming concepts using the Java object-oriented programming language. Topics to be covered include major concepts of object-oriented design, inheritance, polymorphism, string/text processing, wrapper classes, searching and sorting algorithms, recursive programming, exceptions and advanced file I/O among others.

## **Evaluation Criteria**

- Labs: 10%
  - There are 12 labs
  - The best 10 of 12 labs are taken into account
  - Each selected lab is worth 1%
  - Labs are completed during the Friday lab period.
  - Lab work is submitted via email to the lab assistant email at 1904-001@acs.uwinnipeg.ca
  - Lab report + code due date is the same date of the lab @ 11:59:59 pm. No late labs will be accepted after this time.
  - Lab reports are only submitted as pdf files and code as \*.java files
  
- Assignments: 10%
  - All assignments are to be completed individually
  - There will be 4 assignments worth 2.5% each
    - May include theory, programming and/or analysis exercises
  - Due at the beginning of class on due dates
  - No late assignment will be accepted, or under special circumstances accepted with 20% off for each late day
  - Assignments should be hand in on paper (no handwritten) unless email submission is requested. Handwritten assignments will not be accepted
  - Multiple submissions are not permitted. Students may submit a partially completed assignment, and will receive credit for those attempted problems
  - Combination of functionality, quality of design, programming style and documentations are considered for programming assignments
  - Problem solving and programming assignments are time consuming. Start early. Students are responsible for maintaining backups of their work
  - Students are responsible to review their assignments before submission to make sure the correct files are attached to the email
  - Assignments reports are only submitted as pdf (Portable Document Format) files and code as \*.java files. The details of submission procedure will be stated in each assignment
  
- Midterm Exam: 25%
  - The midterm test is during class time
  
- Final Exam: 50%
  - The final exam covers all material discussed in the course

- Class participation and attendance: 5%
  - Make sure you write your student number in a small piece of paper at the end of each class when you participate
  - Deposit the paper in the class box, otherwise your participation will not be counted!
  - Criteria for points per class:
    - class attendance + participation = 1 point
    - only class attendance = 0.5 point
    - no attendance = 0 point
  - 20 points or more gives the 5% maximum for this item. Less points are prorated e.g. 12 points achieved = 3% ( $12 / 20 * 5\%$ )

### **Exam Requirements**

- Photo ID at exam is required.
- You are expected to write the test/exam on its given day.
- No electronic devices (e.g. cell/smart phone, laptop, scientific calculators, translators, etc.) are permitted.
- Midterm and final exams are closed-book.
- Unless a medical certificate is provided, no accommodation is made for missed exams.

### **Final Letter Grade Assignment**

Historically, numerical percentages have been converted to letter grades using the following scale. However, instructors can deviate from these values based on pedagogical nuances of a particular class, and final grades are subject to approval by the Department Review Committee.

A+	90+ - 100%	B+	75 - 79%	C	60 - 64%
A	85 - 90%	B	70 - 74%	D	50 - 59%
A-	80 - 84%	C+	65 - 69%	F	below 50%

### **Prerequisite and Restriction Information\***

(This information can be found in the UW Undergraduate Academic Calendar)

- Requisite courses: ACS-1903 with a minimum grade of C  
ACS-1904L (lab) must be taken concurrently

### **Email Communication**

Emails from accounts at uwinnipeg.ca are usually not filtered by the UofW email filter. Thereby it is recommended electronic communication used for the course utilize a UofW email account to minimize the risk of filtering.

## **Services for Students**

Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams (e.g., private space) or during lectures/laboratories (e.g., note-takers) are encouraged to contact Accessibility Services (AS) at 786-9771 or [accessibilityservices@uwinnipeg.ca](mailto:accessibilityservices@uwinnipeg.ca) to discuss appropriate options. All information about a student's disability or medical condition remains confidential <http://www.uwinnipeg.ca/accessibility> .

Students may choose not to attend classes or write examinations on holy days of their religion, but they must notify their instructors at least two weeks in advance. Instructors will then provide opportunity for students to make up work examinations without penalty. A list of religious holidays can be found in the 2017-18 Undergraduate Academic Calendar.

All students, faculty and staff have the right to participate, learn, and work in an environment that is free of harassment and discrimination. The UW Respectful Working and Learning Environment Policy may be found online at [www.uwinnipeg.ca/respect](http://www.uwinnipeg.ca/respect) .

## **Misuse of Computer Facilities, Plagiarism, and Cheating**

Academic dishonesty is a very serious offense and will be dealt with in accordance with the University's policies. Be sure that you have read and understood Regulations & Policies #8, in the 2017-2018 UW Undergraduate Academic Calendar available at <http://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf>.

Additional information is available at University of Winnipeg library video tutorial "Avoiding Plagiarism" <https://www.youtube.com/watch?v=UvFdxRU9a8g>

## **Text Book(s) / Reading List / Tools**

We will use the following books as guide, supplemented with readings throughout the course:

- Java with BlueJ Part 2  
Ron McFadyen  
University of Winnipeg, March 2016  
Available at [www.acs.uwinnipeg.ca/rmcfadyen/CreativeCommons](http://www.acs.uwinnipeg.ca/rmcfadyen/CreativeCommons)
- Building Java Programs  
Reges & Stepp  
Pearson, 4<sup>th</sup> Edition 2017  
ISBN 978-0-13-432276-6
- Starting out with Java – From Control Structures through Objects  
Tony Gaddis  
Pearson, 6<sup>th</sup> Edition 2016  
ISBN 978-0-13-395705-1

Class notes and notices will be available on the course web page. Students are responsible for material covered in class and announcements made in class.

There are different IDEs you can use to program and test Java. We are going to use the following Java IDE software for our class:

- Eclipse IDE for Java Developers, Neon 3 Package  
Available at <https://eclipse.org/downloads/packages/release/Neon/3>

Java Standard Edition Development Kit 8 or later (current version is JDK v8u144) will be used for our programming tasks. It is available at <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

### **Topics to be covered (Tentative)**

1. Arrays (1 and 2 Dimensions)
2. Objects and classes (more advanced topics)
3. Text processor and Wrapper classes
4. Inheritance
5. Exception and advanced file I/O
6. Recursion
7. Sorting, searching and algorithm analysis
8. Advanced topics (databases, GUI apps)

Note that all topics listed may not be covered and may be offered in a slightly different time order.

Book chapters per topic table

	Gaddis' book	Ron's book	Reges' book
1.Arrays (1 & 2 Dimensions)	Ch 7	Ch 1,2	Ch 7
2.Objects and classes (more advanced topics)	Ch 8	Ch 4	Ch 8
3.Text processor and Wrapper classes	Ch 9	Ch 3	Ch 10,11
4. Inheritance	Ch 10	Ch 5,6	Ch 9
5. Exception and advanced file I/O	Ch 11	Ch 7,8	Ch 6
6. Recursion	Ch 16	Ch 9	Ch 12
7.Sorting, searching and algorithm analysis		Ch 10	Ch 13
8. GUI apps with JavaFX and Scene builder	Ch 15		
9. Databases	Ch 17		

## **Additional Course Related Information**

1. When it is necessary to cancel a class due to exceptional circumstances, instructors will make every effort to inform you via uwinnipeg email, as well as the departmental assistant and Chair/Dean so that class cancellation forms can be posted outside classrooms.
2. Your uwinnipeg email address will normally be used for course related correspondence.
3. Please note that withdrawing before the VW date does not necessarily result in a fee refund.
4. April 5, 2018 is the class make-up date for courses that conflict with Good Friday, March 30.
5. No classes: Oct. 8 – 14 Mid-term reading week; Feb. 18-24 Winter Mid-term reading week; Friday, March 30 (Good Friday).