



# SWEN-601

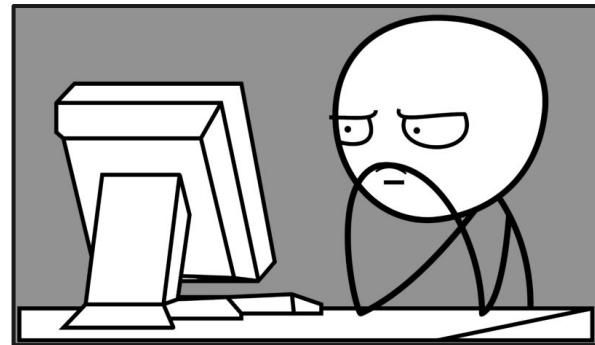
# Software Construction

Course Overview



# Logistics

- During each week of the semester, SWEN-601 will meet 2-3 times for 50-75 minutes.
- Each class will include some combination of the following:
  - A quiz
  - A lecture
  - Hands on coding activities
- During most weeks you will be responsible for:
  - 2 quizzes (in class)
  - 2 homework assignments



The major focus of this class is to give you **hands on** experience designing, writing, compiling, and running computer programs.

You will also learn core computer science concepts including algorithms, data structures, and complexity.

# Grades



- A minimum grade of B is required to pass this course.
- Your instructor *may* consider rounding grades up.
  - For example a 82.6% may qualify a student for a B.
  - This is up to the discretion of the individual instructor.
  - In general, grades will not be rounded up more than half a percentage point.
- Students that regularly attend class, respond to feedback, visit their instructor during office hours, and generally seem to *try* are more likely to benefit.

Grade	Percentage Range
A	at least a 93
A-	at least a 90
B+	at least an 87
B	at least an 83
B-	at least an 80
C+	at least a 77
C	at least a 73
C-	at least a 70
D	at least a 60
F	less than 60

# Grading

- Quizzes - 10%
  - ~5 minutes, start of class
- Homework - 20%
  - ~2 assignments per week
  - Assigned during lecture
  - Due Friday and Sunday
- Practica - 45%
  - 15% each
- Final Exam - 25%
  - Comprehensive



All work in this course should be the result of each **individual** student's effort.

Students that collaborate on quizzes, homework, practica, or exams are cheating.

# Quizzes

- At the beginning of each class, you will spend about 5 minutes taking a quiz.
  - The quizzes will be administered through MyCourses.
  - Each quiz will usually cover material from the previous class.
- As much as possible, quizzes will be graded automatically.

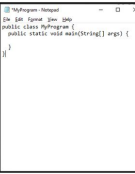
The screenshot shows a web browser window displaying a quiz preview. The browser's address bar shows the URL <https://mycourses.rit.edu/d2l/ims/quizzing/user/attempt/>. The page title is "Quiz #7 - Preview". Below the title, it says "Est. Length: 2:00:00" and "Robert St Jacques: Attempt 1". There is an "Exit Preview" button in the top right corner. The main content area shows "Question 1 (1 point)". The question text is: "A java.lang.ArithmeticException is thrown when attempting to divide by 0. What is the output of the following code (do not include spaces or newlines in your answer):". Below the text is a code block containing Java code. The code is as follows:

```
1 public class TraceMe {
2     public static void main ( String [ ] args ) {
3         System.out.print( "A" );
4         try {
5             System.out.print( "B" );
6             int a = 10 / 0;
7             System.out.print( "C" );
8         } catch ( IndexOutOfBoundsException ioobe ) {
9             System.out.print( "D" );
10        } catch ( ArithmeticException ae ) {
11            System.out.print( "E" );
12        } catch ( Exception e ) {
13            System.out.print( "F" );
14        } finally {
15            System.out.print( "G" );
16        }
17        System.out.print( "H" );
18    }
19 }
```

Below the code block is a text input field. The question is worth 1 point. Below the question is "Question 2 (1 point)". The question text is: "Which class is the parent class of all *checked* exceptions?". There are four radio button options: "Throwable", "Error", "Exception", and "RuntimeException".

# Class Activities

- Your instructor will frequently pause during the lecture to give you an opportunity to practice small problems on one of the lab computers.
  - You may also use your personal computer.
- These activities are not graded and are simply provided to give you a chance to practice.
  - However, you are expected to participate to the best of your ability.
  - Questions are encouraged!
- The instructor will go over the solution to each activity before moving on to the next segment of the lecture.



```
public class MyProgram {  
    public static void main(String[] args) {  
    }  
}
```

## Your First Java Program

You may use one of the lab computers or your personal computer for this activity. Write, compile, and run your first Java program by following these instructions:

1. If you have not already, log into the computer.
2. Use **Notepad** (Windows) or **vi** (Mac/Linux) to create a new text file named "MyProgram.java". **Do not** use TextEdit on OSX.
3. Type the code in exactly as it is shown below and save the file.

```
public class MyProgram {  
    public static void main(String[] args) {  
    }  
}
```
4. Open a command line.
  - a. Windows: use the Start Menu to search for "command".
  - b. OSX: Use Spotlight Search (Command-Space) to search for "terminal".
5. Navigate to the directory to which you saved your program.
6. Compile the program using javac: **javac MyProgram.java**
7. List the files in the directory. What do you see?
8. Run the program using java: **java MyProgram**

It is important to understand the steps involved in writing a Java program.

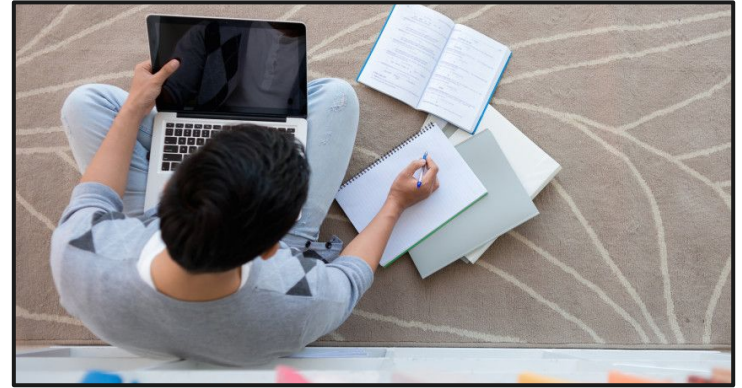
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You will be given a limited time to complete each activity, during which you are encouraged to ask for help.

Practicing activities outside of class is an excellent way to study for quizzes and practice.

# Homework

- A homework assignment will be assigned after each lecture.
  - The homework will provide you with an opportunity to demonstrate your understanding of the accompanying lecture material.
- You will have at least 3 days to complete each assignment.
  - Though the two assignments will overlap.
- In general, homework assignments will be due each Friday and Sunday.
  - Solutions will be submitted to MyCourses.



Assuming that the student has a firm grasp of the corresponding material, each homework assignment will be designed to be completed within 2-4 hours.

While the homework assignments will be due after the quiz on the corresponding material, they will perhaps be the most effective way to study for the quizzes.

# Practica

- There will be a practical exam approximately every 3-4 weeks during the semester.
  - A practical exam is meant to test a student's ability to apply what they have learned to solve a real problem.
- Each practical will require the student to implement the solution to a provided problem within the class period.
- This will include:
  - Creating a project
  - Designing, implementing, and testing a solution
  - Committing the final solution to GitHub
  - Submitting a ZIP archive to MyCourses



The MyCourses assignment will close at the end of the class period. You should begin the submission process at least 5 minutes early.



# Final Exam

- The Final Exam will be comprehensive.
- You will have 2.5 hours to complete the exam.
  - There will be a 75 minute practical component.
  - There will be a 75 minute written component.
- We will spend the last day of class reviewing for the exam.
- Your instructor will notify you of the exact time, date, and location as soon as the exam has been scheduled.
  - This is usually in the 3<sup>rd</sup> or 4<sup>th</sup> week of the semester.



You should **avoid** making any travel plans until you know when your final exams have been scheduled.

If you must make your plans before the exam has been scheduled, **do not** plan to travel before the last day of finals.

# Academic Honesty

- Academic Dishonesty refers to:
  - Copying significant amount of code (even if you retype it).
  - Over-collaborating with another student.
  - Submitting another person's work as your own.
- The penalties for academic dishonesty may include:
  - A 0 grade for an assignment.
  - A 0 grade for the course for a 2nd offense (even in a different course).
  - Expulsion from the program or university.
  - etc.



The instructor is **required** to investigate any instance of suspected cheating and to determine the appropriate penalty.



# QUESTIONS?!