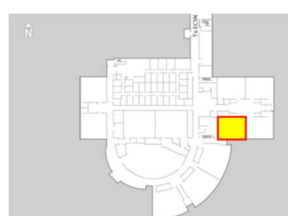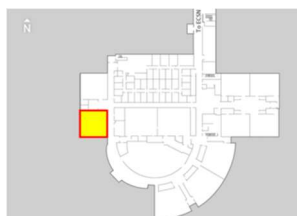# Course Syllabus – CS 1337
Computer Science 1
Spring 2022

(This syllabus is a work in progress. Please let me know about any problems or errors you see herein.)

	Section 010	Section 012
Days & Times	M&W 11:30 – 12:45 p.m. ECSS 2.201	M&W: 1:00 – 2:45 pm ECSS 2.312

Contact Information

Instructor	Dr. Doug DeGroot
Office Location	ECSS 4.409 (down the hall from the Mentoring Center)
Office Phone	(972) 883-4200 (or you can call me or text me via MS Teams)
Email Address	doug.degroot@utdallas.edu
Office Hours	M&W 3:00pm – 4:00 pm and by appointment (just ask)

Course Pre-requisites, Co-requisites, and/or Other Restrictions

CS 1336 (with a grade of C or better) or equivalent.

Course Description

CS/SE/TE 1337 - Computer Science I (3 semester credit hours) Review of control structures and data types with emphasis on structured data types. Applying the object-oriented programming paradigm and focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering. The programming language of choice is C/C++. Students will also be registered for an exam section.

Student Learning Objectives/Outcomes

After successful completion of this course, the student should have an:
- Ability to use single and multi-dimension arrays
- Ability to implement simple searching and sorting algorithms
- Ability to implement pointers and perform simple memory management
- Ability to implement structured data types
- Ability to define and implement a class
- Ability to use fundamentals of object-oriented design
- Recursion, advanced file I/O, programming methodologies, debugging techniques

Textbooks and Materials

Required Text

==*Starting Out With C++, From Control Structures through Objects*, 9th Edition,==
by Tony Gaddis, Pearson Education, 2018.
  ISBN-13: 978-0-13-449837-9
  ISBN-10: 0-13-449837-2

Option 1: Revel System
Revel for Gaddis C++ - Access Code (Digital Book)
Gaddis, Tony; Pearson Publishing
ISBN 0-13-449837-9

> The access code is for a digital version of the book using the REVEL platform. The REVEL platform provides interactive elements to the digital textbook such as animations, videos and coding samples that readers can modify and execute.

> In past semesters, students have stated that the interactive textbook helped them learn the material better.

> Students using this option do not need to buy the physical version of the book

Option 2: The Physical book
Starting Out with C++, From Control Structures through Objects
(9th edition – grapefruit slice on the front cover); Tony Gaddis, Pearson Publishing
ISBN 0-13-449837-2

- As you read the text, watch the corresponding VideoNotes. The VideoNotes are available at http://www.pearsonhighered.com/gaddis/.

  NOTE: VideoNotes are only available with an access code. If your book does not have an access code, you can buy one online at the above address. The access code is not required for class, but some of you may find the material accessible with this code to be a good resource.

C++ Compiler

Students will be required to write programs in C++. There are a number of development environments that students may use (Code::Blocks, CodeLite, Dev C++, Eclipse, Microsoft Visual Studio Express, NetBeans, etc.). However, all homeworks submitted must compile

within Code::Blocks.

For instructional purposes, this class will use only Code::Blocks and/or Microsoft Visual Studio 2015.

> **Code::Blocks** can be downloaded here:
> http://www.codeblocks.org/
> **MS Visual Studio 2015** can be downloaded here:
> https://www.microsoft.com/en-us/download/details.aspx?id=53587

Students may use any environment that will allow them to meet the submissions requirements of the course. However, if a student uses an environment other than Windows and Code::Blocks or MS Visual Studio 2015, it is up to the student to make sure that their code can be compiled and run by the TA/grader in one of those two environments.

Mac users will likely have to learn to use ncurses for some of the homeworks, esp HW1. This is your responsibility.

Useful Resources:

> C++ language tutorial http://www.cplusplus.com/files/tutorial.pdf
> C++ reference: http://www.cppreference.com
> C++ tutorial http://www.learncpp.com/

Assignments & Academic Calendar

This calendar may change as we progress through the class depending on how well we are all doing. Plus, I've almost certainly made some errors in this thing. Let me know if you spot any.

CS 1337 Calendar

This calendar is subject to change at the Professor's discretion.
Things that may impact this calendar include the acquisition of graders for the course on a timely basis!

1/19	Introduction to CS 1337 Programming Methodologies, Intro	Fix the Snake Game Code
1/24	Review of CS1336 Topics More Snake Game Improvements	Diagnostic Test 1/24 thru 1/26 (?)
1/26	Intro to Multidimensional Arrays, Vectors, Searching, and Sorting	Read Ch.s 7 & 8
1/31	More on Multidimensional Arrays, Vectors, Searching, and Sorting	Read Chapter 10
2/2	Characters, Strings & the String Class	

2/7	More on Characters, Strings & String Class	Read Ch. 9
2/9	Pointers	
2/14	Pointers	Read Ch. 12 (omit 12.7, 12.8)
2/16	Advanced File I/O	Read Ch. 11
2/21	Advanced File I/O	
2/23	Structured Data	
2/28	Structured Data with Pointers	
3/2	Searching and Sorting	Read Ch. 8
3/7	Review	
3/9	Test #1	Read Ch 13
3/14	SPRING BREAK – NO CLASSES	Read Chs. 13 & 14
3/16	SPRING BREAK – NO CLASSES	
3/21	Introduction to Classes & Objects	
3/23	More about Classes Objects	
3/28	More about Classes & Objects	Read Ch 15
3/30	Inheritance, polymorphism, virtual functions	
4/4	Inheritance, polymorphism, virtual functions	Read Ch. 20
4/6	Inheritance, polymorphism, virtual functions	
4/11	Recursion	
4/13	Recursion	
4/18	Quicksort	
4/20	Quicksort	
4/25	Misc Topics	
4/27	Mic Topics	
5/2	Review	
5/4	Exam	

Grading Policy

Projects, exams, and attendance will determine grades. The final grade will be composed as follows:

Programs   60% (6 programming projects)
Exams   40% (2, taken remotely (like at home))

Grading Scale (the University's standard grading scale):

98-100 A+	88-89 B+	78-79 C+	68-69 D+	Below 60 F
92-97 A	82-87 B	72-77 C	62-67 D	
90-91 A-	80-81 B-	70-71 C-	60-61 D	

There will be regularly assigned reading and homework problems. The homework problems will require the student to spend time programming a computer. All programming assignments must be turned in by means of eLearning.

Submitted homework files must contain:

1. a text copy of all source code
2. a text copy of any required supporting documentation or files
3. an executable version of the homework that executes under Windows
4. NOTE: These must all be placed in a folder, zipped, and named as follows:

HWn-CS1337-<your first and last names>.zip if a multiple file Homework
Or HWn-CS1337-<your first and last names>.cpp if source code only Homework

Specific details of deliverables will be provided in each assignment write-up.

NOTE: When an assignment says the homework is due by midnight on a particular day, don't worry if you are, say, up to 10 or 15 minutes late. More than that and you will lost 10 points (see below) I understand how things can go sour at the last minute. But that just points out the fact that you should not procrastinate. Get your homeworks turned in the night before or around early afternoon on the due date.

For each day or partial day your homworks are late, 10 points will be deducted.
No homeworks will be accepted past midnight of the second day following the due date.
This is am absolute hard and fast rule.

There will be no excuses for missing the exams.

All homework assignments will be graded by the TA/Graders. **Therefore, if you have any question at all concerning the homework assignments, please speak with the TA about it first.** Even if you were to approach Prof. DeGroot first, you will still have to go back to the TA. It will save time to start with the TA first.

If you are dissatisfied with the result of your meetings with a TA, then please see the Instructor about that issue. Together, you can work to get it straightened out. You have every right to pursue any issue that concerns your grade in the course.

Course & Instructor Policies

Late Work

When an assignment says the homework is due by midnight on a particular day, don't worry if you are, say, up to 10 or 15 minutes late. More than that and you will lose 10 points on your score (see below) I understand how things can go sour at the last minute. But that just points out the fact that you should not procrastinate. Get your homeworks turned in the night before or around early afternoon on the due date.

For each day or partial day your homworks are late, 10 points will be deducted.
No homeworks will be accepted past midnight of the second day following the due date.
This is am absolute hard and fast rule.

There will be no excuses for missing the exams.

Grade Disputes

All grade disputes must be discussed & resolved by the student with the Instructor within two week of posting the grades. But start with the class grader first!

Classroom Citizenship

Students are expected to be respectful to each other and to the course instructor. Disruptive behavior during the lecture and any discussions is not tolerated.

Study Groups

Each student in the class is encouraged to join/form a study group. Members of each study group should support one another in learning and understanding the course material. But by no means does this imply that sharing code or algorithms is accepted. And in particular, this does not imply that cheating on homeworks or exams is tolerated.

Ethical Behavior

Plagiarism is the unacknowledged incorporation of another's work into work which a student offers for credit. Using source code of another person's program, even temporarily or from the web, is considered plagiarism. Example: Someone putting their name on someone else's homework assignment and turning it in is cheating.

Collusion is the unauthorized collaboration of another person in preparing work that a student offers for credit. Allowing another person to use your source code, even temporarily, is considered collusion.

Example: Giving someone your homework, and then that person turns it in as their own work, then the giver is also guilty of cheating.

Dr. DeGroot's penalty for any form of dishonesty is a score of 0 on the entire assignment.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. It is included here by reference.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Instructor.