Programming Fundamentals
CS 1336.502 – Fall, 2015

Syllabus

Course Information

Course number: CS 1336.502
Course Title: Programming Fundamentals
Credit Hours: 3

Professor Contact Information

Instructor: Karen Doore
Office: ATC 3.105 *(room is still under construction)*
Office phone:
Office hours: Tuesday and Thursday 5:15 - 6:30 pm
Email: kdoore@utdallas.edu

Course Pre-requisites and Co-Requisite

There are no pre-requisites for this course. It is assumed for all students that this is a first course in computer programming.

There is, however, a co-requisite, which is a lab section that runs concurrently with our section, but is independent of it. That course is CS1136. Every student in CS1336 must be registered for CS1136 as well.

Catalog Description

Programming Fundamentals. Introduction to computers. Primitive data types, variable declarations, variable scope, and primitive operations. Control statements. Methods/functions. Arrays, and strings using primitive data arrays. Output formatting. Debugging techniques. Designed for students with no prior computer programming experience. This class cannot be used to fulfill degree requirements for majors in the School of Engineering and Computer Science. Corequisite: CS 1136. Note that a grade of C or better is required in order to register for CS 1335 or CE/CS/TE 1337.

Required Textbook

Starting Out With C++, From Control Structures through Objects, Eighth Edition, by Tony Gaddis, Addison Wesley, 2015. Gaddis, Tony; Pearson Publishing ISBN 0-13-376939-9

As you read the text, watch the corresponding VideoNotes. The VideoNotes are available at http://www.pearsonhighered.com/gaddis/   NOTE: VideoNotes are only available if your book comes 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.

Students may use a different edition of the book. In doing so, students accept the responsibility of verifying page numbers for assignments as well as learning the C++ topics not present in other editions.

Additional course materials, such as assignments, sample programs, and other materials will be available as well on the UT Dallas eLearning site at http://elearning.utdallas.edu.

Student Learning Objectives

Our goal this semester is to cover specifically Chapters 1 through 7 in the Gaddis text. This will take us through the basic control structures and arrays

After successful completion of this course, the student should have an:

1. Ability to develop algorithmic solutions for use on computers - Chapter 1-7
2. Ability to perform console input and output, utilize basic operators, and perform sequential processing—Chapters 2 & 3.
3. Ability to utilize the basic control structures for selection logic – Chapter 4
4. Ability to utilize the basic control structures for repetition logic – Chapter 5
5. Ability to perform sequential file input and output – Chapter 5
6. Ability to develop programs in a functional form – Chapter 6
7. Ability to process data in arrays – Chapter 7

Support Notes

Emails to Instructor:

If time permits, I will do my best to answer emails in a timely fashion. However, since I have several classes this semester, it is important that you include your class information as the first element in the subject line of your email. For this class, the subject lines of your emails should start with "CS1336.502." After that, you can say whatever you want.

As an example, let us say that you wanted to ask a question about the final exam. Then the subject line should be something like: "CS1336.502 – Final Exam." Having an indicator like this of your class and section numbers will help tremendously in processing the various emails this semester. This is a requirement, not a request.

Questions about homeworks and other issues

All homework assignments will be graded by the TA's. Therefore, if you have any questions at all concerning the homework assignments, please speak with the TA about it first. If for any reason you are dissatisfied with the result after meeting with the TA, please come see me about the issue and we will get it straightened out.

Scantron Forms

All exams and quizzes this semester will be taken by using a scantron form. The particular scantron form we will be using is Form 19641, which can be obtained from the UTD bookstore. We will probably use around 8 or 9 of them this semester, and the first use will occur within the first weeks of the semester. Therefore, it is important to get a set of these early on.

You are responsible for providing both the scantron forms and the No. 2 pencils necessary to use them for all exams and quizzes. They will not be provided by the department.

Suggested Study Elements

Most chapters in the textbook are divided into sections, and most of the sections have study points associated with them, what the authors call "Check Points." These are a series of study questions and suggestions the authors have provided at the end of most sections to help solidify what was learned in those sections.

You do not have to turn in your answers to the Check Points in the book. But you do need to realize that I consider them fair game for both the quizzes and the exams. The purpose of this strategy is to encourage you to be proactive with the material, to study from class-to-class and not from test-to-test, and to take responsibility for what you know and what you don't know.

Course Tools

C++ Compiler

All of the programs we write this semester will be in C++, and we will be using C++ compilers to generate them. It is not essential that you use a particular C++ compiler. It is, however, essential that the TA's are able to compile and run your programs on their machines. It is your responsibility to make sure your programs follow the standards that are outlined in class so they can be compiled by the compilers the TA's will be using, even if you are using a different compiler.

If you intend to use your own computers to write the class assignments, it is important that you get a

compiler downloaded, installed, and running on your computer as soon as possible. If you don't have a computer, or if you're having problems getting a compiler installed, you should write your programs in the labs until the problems are resolved. In any case, please note that you are responsible for getting the programming assignments written and turned in on time. Since there are many computers available on campus, problems with your local machines will not be accepted as an excuse for not doing the assignments or late submissions.

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For those who are using a Windows operating system, the best compiler for us is Visual Studio C++ 2013 Express edition (VS2013). It is free to all students. Although this is not the latest release of this compiler (VS2015 has just been released), it is the version that is loaded on all the lab and classroom computers. Therefore, we will stick with it for now.

There are two main methods for obtaining this compiler. First, and most easily, it can be obtained directly from Microsoft here:

http://www.visualstudio.com/en-us/downloads#d-2013-express

In the window that pops up, choose "Visual Studio 2013" on the left hand side followed by "Express 2013 for Desktop." (Do not choose either of the "for Windows" or "for Web" options.) Note that this version must be registered with a Microsoft account within 30 days or it quits working. We strongly recommend registering it immediately, as it is more difficult to register once the timer expires.

If you don't have a Microsoft account, you can create one for free here:

https://login.live.com/login.srf?wa=wsignin1.0&rpsnv=12&ct=1420922768&rver=6.5.6510.0&wp=SAPI&wreply=https:%2F%2Faccount.live.com%2F&lc=1033&id=38936&mkt=en-US&uaid=3b033bfa8a294d318bb6ef9a773713c9

For Mac users, if you plan to use Visual Studio Express, then you will need to install a Windows emulator and run VC++ in the emulator. ("Parallels" is a good option of an emulator)

If you intend to use your own computers to write the class assignments, it is important that you get a compiler downloaded, installed, and running on your computer as soon as possible. If you don't have a computer, or if you're having problems getting a compiler installed, you should write your programs in the labs until the problems are resolved. In either case, please be aware that you are responsible for getting the programming assignments written and turned in on time. **Since there are many computers available on campus, problems with your local machines will not be accepted as an excuse for not doing the assignments.**

Another compiler option is Code::Blocks. This is a free download for either Windows or Mac. http://www.codeblocks.org/downloads/26 - download codeblocks-13.12mingw-setup.exe

Be advised that Code::Blocks may not work with newer versions of the OS X operating system. If you have a Mac, it is highly recommended that you have a Windows partition on your computer for code development.

Help Desk

For help with issues regarding your computer, UTD maintains a walk-in help desk. Visit their Web site for details:

http://www.utdallas.edu/ir/helpdesk/

Tutoring

For programming assistance in CS1336, a tutoring lab will be maintained. The schedule usually comes out a couple of weeks after the semester begins. Once the tutoring schedule for this semester has been released, I will make it available to you.

In addition, it is part of the TA's job to help you, so please feel free to engage with him/her at any time. And, of course, I'll be happy to help as well.

Grading Elements

Clickers

This course will require the use of a clicker. A clicker is an audience response device that resembles a small calculator. This allows you to provide real-time feedback to your instructor during class. Class summary results are displayed graphically, providing students and the instructor a gauge as to how well the class is grasping the material. You can purchase (and sell back) your clicker at the UTD Bookstore. We will use the clicker for attendance and participation quizzes. Participation quizzes will be worth 5% of your grade and are used to encourage discussion and feedback during the class; you will receive participation points for answering each question.

Attendance Policy

Attendance will be taken this semester and is worth 5% of the total grade. You can have three unexcused absences at any time during the semester without an effect on your grade. After that, however, further absences will affect your grade on a prorated basis.

Of course, some absences are automatically excused by the school and won't count against you. These include absences for sporting events (if you're a member of a UTD sports team) and other situations. If any of these apply to you, just contact me beforehand and we'll make arrangements for it. In addition, absences for medical reasons will be excused with documentation.

Attendance and Participation via clickers will count for 10% of your grade.

Quizzes

There will be several quizzes this semester. All of them will be announced (I am not planning any pop quizzes) and they will generally occur on the first class day of a given week. For example, in a Tuesday, Thursday section, I may announce on a Thursday, the last class of a given week, that we are having a quiz the following Tuesday. The quizzes will all be True/False and Multiple Choice, and will be taken using the scantron form discussed earlier. (To re-emphasize: It is important, therefore, that you get a set of these scantron forms as soon as possible after the semester begins.) Generally, the quizzes will be very short; probably no more than 5-10 questions, and we will allocate no more than 5 or 10 minutes to each one. Since they will occur right at the beginning of a given class, it is very important to get to class early on those days and be ready to go. Time is very short this semester, and generally we will take the quizzes quickly and move on.

The quizzes will give students an idea of what the exams are going to be like, both in format and content. The exams will also be True/False and Multiple Choice and will be taken using a scantron form, just like the quizzes. Having an exposure to the format and the content is a huge asset, and will help everyone do well.

The quizzes should encourage you to engage continuously on the content. To do well in this class, it is vitally important to study on a regular basis. Experience has shown that if you study from test to test, rather than class to class, you will not do well. Therefore, you should study regularly and plan on spending a minimum of two hours outside of class for each hour spent in class. These quizzes will encourage you to do that.

The quizzes will consist of exam-type questions, variations of which could very easily show up on the exams. Doing well on the quizzes, therefore, is not only excellent exam preparation, but is also an indicator for how ready you are for the exams themselves. The exams will be challenging, and will require a deeper knowledge of the material than you might expect.

It is very important to take these quizzes seriously. Together they are worth 10% of your final grade, which represents a full letter grade.

Homework Assignments and Programming Projects

Programming projects will be assigned throughout the semester. They will be designed to supplement our class discussions and the textbook, and, generally, you will have a week to do each one.

Homework assignments will usually be made on the first class of a given week, and then due at 11:59 pm the following week. This means that you will always have at least one weekend to work on your assignments.

All homework assignments will be submitted to eLearning. The TAs will download them, grade them, and upload the resulting grade with comments.

Remember that if you have any problems at all with the way a particular assignment was graded, see the TA about it first. If you are dissatisfied for any reason after that, come talk to me and we'll get the issue resolved.

We encourage you to be very proactive on this point. Any issue that concerns you also concerns us by definition, and we will do whatever we can to help you. But you must take responsibility for addressing the issues in the first place. In general, it is very important to understand why you missed *any* points, whether on homework assignments or on an exam.

Mid-term Exam

This exam is currently scheduled for **October 8th.** It will be in-class, during our regular class hours, in our regular classroom, and closed book and closed-notes with no calculators.

As a reminder, all exams will be taken on the scantron form 19641, and will consist of True/False and Multiple Choice questions.

Final Exam

The final exam schedule is usually released within the first couple of weeks of the semester. As a result, we don't yet know the official final exam date for our class. After it comes out, I will let you know what our official final exam date is and update the syllabus accordingly.

Note that although we don't the exact date of our final exam, the range of dates for the final exam period can be found in the academic calendar, which has already been released. For example, if you look in the academic calendar for our semester (http://www.utdallas.edu/academiccalendar/files/AcademicCalendarFall2015.pdf), you'll see that the final exam period extends from Dec 11 – Dec 21 this semester.

In general, **it is your responsibility to check the academic calendar before making any personal plans at the end of the semester**. For example, please don't schedule any airline flights on or before your final exam, or make other travel arrangements during this period.

The final exam will be closed book and closed notes, just like the mid-term. The final exam will not be comprehensive. It will cover only the material that we covered since the mid-term exam.

Grading Policy

The percentage contribution of the different course elements to your final grade will be as follows:

Course Element	Due Date	% Contribution to Final Grade
Attendance & Clicker Quizzes	Throughout the semester	10%
Quizzes (Scantron)	Throughout the semester	10%
Homework assignments, Programming projects	Throughout the semester	30%
Mid Term Exam	**Thursday October 8th**	25%
Final Exam	TBA	25%

Each of those grades will be averaged together according to their percentage contribution and a final number calculated. That number is what will be applied to the grade demarcations listed below.

Grade Demarcations

This is the current list of grade cut-offs for this semester. If the class distribution doesn't fit well within these limits, however, these cutoffs may have to be changed. If they are, they will only be changed in your favor (i.e., reducing the levels, not raising them). Thus, these numbers can be viewed as guarantees. For example, anyone who makes a 90 or above is guaranteed to get a grade that is somewhere within the "A" range.

Except for the first row, any number that appears on the right hand side in the "Percentage" column in the following chart is non-inclusive. For example, an "A" is listed as "Percentage: 93-97." That means that anyone who makes equal to 93 or above but strictly less than 97 will get an "A". (Anyone who makes 97 or above will get an "A+".)

Percentage	Grade
97-100	A+
93-97	A
90-93	A-
87-90	B+
83-87	B
80-83	B-
77-80	C+
73-77	C
70-73	C-
67-70	D+
63-67	D
60-63	D-
0-60	F

Please note that the final grade calculation will be done strictly by the numbers and in a very objective manner.   There will be no attempt to round a grade to the next highest level, or to fudge the grades in any way. It will be a purely mathematical calculation.

This can have profound implications that you need to be aware of. For example, as the table above shows, you need a numeric grade that is greater than or equal 90% to get a letter grade in the "A" range. But since the final letter grades are going to be calculated purely mathematically, <u>any numeric grade less than that will not be an "A."</u> This means that an 89.95% will get a "B+" in this class.

The same thing obtains at the other grade boundaries as well, including the very important "C-" / "C" grade boundary. To move on the next class, it is necessary to get a "C" or better in this one, and for that you need a final average of at least 73.0%. But this policy dictates that any student with a numeric grade that is less than 73.0% in any way, including something as close as 72.99% , will not get a "C" and will be forced to take the entire semester again.

If you find yourself gravitating toward some borderline condition like we've described above, the best solution is to ask yourself what you can do to increase your work effort. Your effort and your focus make a huge difference in your final grade. Take responsibility for that. Come see me more, the TA's more, the tutors more, work extra problems, answer the questions at the back of each chapter, whatever it takes. You'll find that if you take personal responsibility for your final grade, and not blame bad results on any external circumstances, your grades will improve radically both in this course and in the ones to follow.

According to the university catalog a grade of C or better in CS 1336 is a prerequisite for CS 1337.

Homework Submission and Late Policies

All assignments will be announced in class and submitted using eLearning. If you are not familiar with this process, it is very important to master it early in the semester.

In times past, some students have reported difficulties uploading files into eLearning from a laptop or home system. We can all understand that these systems are sometimes not very reliable. Nevertheless, in the final analysis, it must remain your responsibility to get the files in on time, no matter what it takes. The lab computers, for example, can always be used to upload these files and they are extremely reliable. Please leave yourself enough of a time buffer to use those lab systems if, for some reason, your home systems don't work.

Late programming projects and homework assignments will be accepted. However, there will be a late policy applied to the assignment. An assignment that is turned in late, but is still within the first 24 hours after the due date, will receive a 10% penalty on the grade. An assignment that is turned in late, but is between 24 and 48 hours late, will receive a 50% penalty on the grade. And an assignment that is turned in more than 48 hours late will receive no credit: 0% on the final grade. However, I encourage everyone to turn in their projects no matter how late they are. The practice you get from writing them, and the feedback you get from turning them in is invaluable.

Other Course Policies

Make-up examinations will be administered **only for well-documented emergencies**. A student must make every attempt possible, via telephone and email, to notify the instructor that he/she will miss a scheduled quiz or exam **prior** to the scheduled date and time. See the information below for the instructor's policy regarding religious holy days.

All quizzes and exams are closed book.

Extra credit work will not be given to individual students.

There is a strong, direct correlation between class attendance and class performance. Students who regularly attend class tend to make significantly higher final grades than those who do not.

Students are expected to be respectful to each other and to the course instructor. Disruptive behavior in the classroom will not be tolerated.

Grade Dispute: All grade disputes must be discussed/resolved by the student with instructor within a week of posting.

Field Trip Policies
Off-campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.

No off-campus activities or field trips are scheduled for this course.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules.

Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the deal will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.