CS 1428 - Foundations of Computer Science I  
Fall 2017

Catalog Description:
Introductory course for computer science majors, minors and others desiring technical introduction to computer science. Contains overview of history and structure of the digital computer, including binary data representation. Problem solving, algorithm development, structured programming, good coding style, and control structures of C++ are emphasized. Prerequisite or corequisite: MATH 1315

Course Objectives:
- Understand the history and structure of the digital computer.
- Explain the organization of the classical von Neumann machine and its major functional units.
- Understand binary data representation in the modern computer, including the representation of non-numeric data.
- Understand that fixed-length number representations affect accuracy and precision.
- Identify the necessary properties of good algorithms.
- Discuss the importance of algorithms in the problem-solving process.
- Understand the software development process, good coding style, and algorithm development.
- Use pseudo-code or a programming language to implement, test, and debug algorithms for solving simple problems.
- Introduce the syntax of the C++ programming language.
- Understand how to use an if or if-else construct to implement a branch in an algorithm.
- Understand how to use a for loop for definite iteration.
- Understand how to use a while or do-while loop for indefinite iteration.
- Apply the techniques of structured (functional) decomposition to break a program into smaller pieces.
- Describe the mechanics of parameter passing with emphasis on the difference between pass by value and pass by reference.
- Manipulate data in arrays.
- Create a new data type by using a structure.
- Analyze and explain the behavior of simple programs involving the fundamental programming constructs covered by this unit.
- Modify and expand short programs that use standard conditional and iterative control structures and functions.
- Describe strategies that are useful in debugging.
- Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, and the definition of functions.
- Students will be able to use a Windows-based editor and compiler environment.

Upon completion of the course, the student will be familiar with the basic structure of a digital computer model, data representation, the software process, good coding style, algorithm development and will be able to program using the elementary control structures of C++.

“Do you know the difference between education and experience?

Education is when you read the fine print. Experience is what you get when you don't.”

— Pete Seeger
TIME:  
Section .001 09:00 a.m. - 09:50 a.m.  MWF  HINE 206  
Section .002 10:00 a.m. - 10:50 a.m.  MWF  HINE 206

INSTRUCTOR: Becky Reichenau  
OFFICE: Comal 210A

CS DEPT: Comal 211  
E-MAIL: br02@txstate.edu (You can expect a reply to your e-mail if you provide the correct reply e-mail address; however, do not depend on responses at night or over the weekend.)

WEB PAGE: http://www.cs.txstate.edu/~br02/ (We will only be using TRACS to submit programming assignments.)

OFFICE HRS: (tentative)  
M/W 11:30 a.m.-01:30 p.m.  
F 11:30 a.m.-12:30 p.m

Others by appointment.  
(Appointments need not be made during regularly scheduled office hours.)

NOTE: There are many additional places to obtain assistance. For example, tutors are available in MCS 593, CS Department lab assistants are available in MCS 590, and your lab instructors will hold office hours in their respective offices.

TEXTBOOK: Gaddis, Tony  Starting Out with C++: From Control Structures through Objects, 8th Edition (as needed)  
Addison-Wesley, ISBN - 0133769399

SUPPORT MATERIALS:  
• Instructor’s Web Site: http://www.cs.txstate.edu/~br02/  
  (Access to detailed support files and assignments will be provided the first day of class.)

GRADING POLICY*: Quizzes/Daily Assignments 10% **  
Lab 15%  
Programs 20% ***  
2 Major Exams:  
Exam I 10%  
Exam II 20%  
Final Exam (comprehensive over programming concepts) 25%

Note: You are required to show your Texas State student (photo) ID to your instructor on exam days. A driver’s license is not adequate. Exam scores will be recorded as zeros until your Texas State student ID is presented.

**Quizzes over recently covered material are not typically announced in advance. Expect one every day, and you will never be caught unprepared. Quizzes will be given at the beginning of class. Students who arrive late will not be given additional time to complete a quiz that was administered that day. Quizzes cannot be made up without official documentation.

Major exams will be announced at least one week in advance. They are typically scheduled during the equivalent of the sixth and eleventh weeks of a long semester; however, the actual dates may be adjusted to benefit the students.

No cell phones, recording/storage retrieval devices, or calculators are allowed during quizzes or exams. A grade of zero will be recorded when any such device is determined to be in a student’s possession during a quiz or major exam. Students are required to remove all head coverings during quizzes or exams.

FINAL EXAM SCHEDULE:  
C.S.1428.001 (MWF 9:00 a.m.) 08:00 a.m. - 10:30 a.m.  Monday, December 11  
C.S.1428.002 (MWF 10:00 a.m.) 11:00 a.m. - 01:30 p.m.  Monday, December 11

Final exams will be administered only on the day and at the time indicated in the university exam schedule.
GRADING SCALE:

Determination of letter grade in the course *:
- semester average >= 89.5  A
- 79.5 <= semester average < 89.5  B
- 69.5 <= semester average < 79.5  C
- 59.5 <= semester average < 69.5  D
- semester average < 59.5  F

*The final grade for the course cannot be higher than the student’s highest test score.

***Programs are very important to this course. Therefore, ALL programs MUST be turned in to pass the course. A ‘good faith’ effort must be demonstrated for each program turned in or a grade of ‘F’ will be assigned in the course. Programs that contain compilation errors or produce incorrect output will automatically receive a 30% penalty. To receive any credit for a programming assignment, the source code (along with appropriate support files) must be submitted electronically as well as in paper form. If both the paper and the electronic copy are not available to the grader on the date the programming assignment is due, a grade of zero will be assigned. The electronic copies must match the paper copies, or a grade of zero will be assigned.

Alert: Time permitting programs will be run through an Internet service designed for detecting plagiarism in software code.

LATE POLICY: Assignments should be placed on the central desk AT THE BEGINNING of class on the day they are due. This does not mean fifteen minutes or ten minutes or even five minutes into the lecture. This means at the beginning. Regardless of the deadline set, there will always be people who want it extended.

Now that the deadline for full credit has been established. Please respect this deadline, and plan accordingly.

ANY assignments submitted after the time class is scheduled to begin are considered late. Such assignments may be turned in any time BEFORE class is dismissed on the due date but will receive a 20% penalty unless accompanied by official (an original, not a copy) documentation. Only assignments turned in while class is in session in HINE 206 will be accepted unless the assignment is accompanied by official (an original, not a copy) documentation.

Turning in work early is discouraged; however, if it is necessary to do so, bring the assignment, with a note of explanation attached, to the secretary of the Computer Science Department in Comal #211. Each time you turn in an assignment to Comal #211, whether it is early or excused late, remember to have the secretary initial each assignment plus note the date and time that each assignment was turned in, or NO credit will be assigned. (This policy is NOT designed for students who fail to attend the lecture and the work of repeat ‘offenders’ will no longer be accepted early.) Three strikes (early and/or excused late), and you’re out!

Each time you turn in an assignment to Comal #211 whether it is early or excused late, it is highly recommended that you send an e-mail to your instructor as well.

NO CREDIT WILL BE GIVEN TO ASSIGNMENTS PLACED UNDER MY OFFICE DOOR OR TO THOSE ATTACHED OUTSIDE MY OFFICE DOOR VIA TAPE, TACKS, ETC.

NO OTHER "LATE" ASSIGNMENTS WILL BE ACCEPTED!!! NO EXCEPTIONS! ALLOW FOR NATURAL DISASTERS! The computer system used may ‘go down’, the printer queues may be ‘backed up’ on the day an assignment is due, the bus was late, flash drives may have been left ‘somewhere’, etc. These types of events do NOT excuse late work.

GRADE DISPUTES must be handled in my office and must be discussed within one week of the return of the graded homework during regularly scheduled class time. (This means within one week from the date the assignment is returned. It does NOT mean one week from the date you decide to pick up the returned assignment.) You may show me a problem related to your grade at the front desk in the classroom after a lecture; however, for complete discussion and possible resolution, you must come by the office where all records are readily available. Come prepared with the graded assignment in hand, and be able to access the electronic version of your work from my office.
KEEP all graded lecture assignments (especially the electronic copies) until you have received a grade in the course you are willing to live with. This will help argue your case in the event of a grade discrepancy. You will need proof of your work in both an electronic and a graded paper form. (Without the ability to access the electronic copy of your work from my office at the time of your grade dispute, the grade on record stands as is.)

ACADEMIC OFFENSES:
All assignments submitted for a grade should reflect the work of the individual student unless otherwise established in writing by your instructor. Violations will be dealt with according to Academic Procedures and Policies as outlined in the Texas State Student Handbook. Go to http://www.dos.txstate.edu/handbook.html, and click on Academic Honor Code to review Academic Offenses and the Penalties for Academic Dishonesty that those procedures listed below may have been updated without my express knowledge.

Note: Recall that if time permits, programs will be run through an Internet service designed for detecting plagiarism in software code.

ATTENDANCE POLICY: Class attendance is highly recommended. You will be held responsible for material covered in the lectures. Some of the material covered in lectures may not be readily available elsewhere. You are responsible for obtaining assignments and notes from fellow classmates for any days missed. I recommend that you obtain the names and phone numbers of several classmates in the event that you are forced to miss a day of class.

If you choose to attend class, plan on staying the entire time unless you inform the instructor in advance that you will be leaving early.

Except where permission is specifically granted, all electronic devices, including computers, cell phones, pagers, etc. should be kept out of sight and turned off; or, in the case of cell phones, on vibrate during lecture. Watching someone constantly reading/sending e-mail, checking a Facebook account, tweeting, snapchatting, texting or checking their phone for messages, etc. is distracting at best, so don’t do it! If you are expecting a ‘contact’ that falls under the ‘emergency’ category, set your phone, pager, etc. to vibrate, and let your instructor know in advance that you might have to leave the classroom in order to deal with a possible ‘situation.’

E-MAIL notifications related to this class will be regularly sent to your Texas State e-mail account. If you do not check it on a regular basis, forward your Texas State e-mail to an e-mail account that you do check on a regular basis.

ABSENCE POLICY: If you are absent at the time of a content quiz, a grade of zero will be recorded unless official documentation (an original, not a copy) is provided for the absence and is approved by your instructor. Then a make-up quiz can be scheduled as long as the graded quizzes have not already been returned. Attendance quizzes cannot be made up. There will be NO make-up exams.

DROP POLICY: (Refer to the Academic Calendar).
- Automatic “W” deadline and last day to drop a class ends 11:59 p.m. Monday, October 30.
- Last opportunity to withdraw from the University ends 5:00 p.m. Tuesday, November 28.
- Students who withdraw from the University after the automatic “W” date will be assigned a "W" or an "F" based on class performance up to that point in the semester. A "W" will be assigned only if the class average is passing on the day the withdrawal procedure is officially completed.

Note: Contact the Registrar’s Office as to the proper procedure to follow in order to successfully complete the drop/withdrawal process. If you decide to withdraw from the University after the automatic “W” date previously mentioned, be sure to check with your instructor prior to completing the withdrawal procedure in order to verify whether you will be assigned a “W”, “F” or “U”. Contact the Registrar if you have any further questions.

It is your responsibility to make sure the drop/withdrawal process is complete. Do not come to me later and say that you "thought" you had dropped but the process did not "go through" expecting me to change a grade of ‘F’ to a ‘W’. Be sure to check your revised schedule to make sure the course dropped is no longer listed.

ADA Compliance: Students with special needs as documented by the Office of Disability Services who require accommodations should identify themselves to the instructor as soon as possible but no later than the 12th class meeting in a long session and no later than the 4th class meeting during a regular summer session. Students with special needs who have not
already done so will be required to contact the Office of Disability Services in order to establish accommodations. Every effort will be made to secure the necessary accommodations to facilitate students with special needs/disabilities in order to enhance their performance in the classroom.

**UNCLAIMED WORK:** With the exception of final exams, any graded in-class work, programs, quizzes, and regular exams that are not picked up *on or before* the last day of class will be shredded before the next academic session begins. Therefore, if you want to claim any of the above, you will need to do so during semester office hours *on or before* the last day of class.