Syllabus: Introduction to Program Design & Concepts

Course Description
This class is all about getting you ready to handle the basics of writing code to solve the interesting problems in computer science. While getting a program to work can be a challenge at first, as you gain experience you'll start knocking out code sooner than you would think.

We'll focus a lot on design and principles and use C++ to implement those principles. Of course we'll also learn a lot about C++ in the process.

Catalog Description
Computation to enhance problem solving abilities; computational thinking; understanding how people communicate with computers, how computing affects society; design and implementation of algorithms; data types, program control, iteration, functions, classes, and exceptions; understanding abstraction, modularity, code reuse, debugging, maintenance, and other aspects of software development; development and execution of programs.

Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

This course uses Blackboard Learn as its online platform. To know more about its accessibility standards please to their website. http://www.blackboard.com/Platforms/Learn/Resources/Accessibility.aspx.

If you find that course content or software are not accessible, please contact your course instructor or disability services so that appropriate accommodations to the learning environment can be made.
Prerequisites
A programming course in high school or college.

Getting Started
1. Review the entire syllabus.
2. Log into eCampus using your TAMU NetID and password.
3. The course menu is on the left. Introductory materials can be found in “Getting Started.”

Important Dates
Course runs from May 31, 2016 – August 9, 2016.

- Midterm Exam: July 11, 2016, 1 PM
- Final Exam: August 9, 2016, 1 PM
- zyBook activities and lab works due: Wednesdays & Saturdays
- Homeworks due: Sundays
- First Extra Credit due: July 15, 2016
- Second Extra Credit due: August 5, 2016

Required Resources

ONLINE TEXTBOOK

*Programming in C++*

*Texas A&M University CSCE 121 Summer 2016: Programming in C++*

Publisher: Zyante Inc.
zyBooks Link: [http://zybooks.com](http://zybooks.com)
ISBN: 9780989590204
Class zyBooks Code: TAMUCSCE121MooreSummer2016

This is an online textbook. You will required to have access to your own copy linked to this class with the code above. Otherwise you will not receive credit for completion of exercises that count toward your grade.

PRINTED TEXTBOOK


There are significant changes from the first edition, so the current edition is recommended.

COMPUTER

You must have a computing device that you have permission to install software. It must also be capable of running an IDE such as Visual Studio Community or xCode.

Bring Your Own Device (BYOD) is an initiative in the college of engineering where students are required bring their own computing device to class. The following link explains the program and provides information about approved devices.

[https://engineering.tamu.edu/easa/areas/academics/byod](https://engineering.tamu.edu/easa/areas/academics/byod)

Approved BYOD devices are a good guideline for requirements for this class.
WEB

You must have reliable and relatively fast internet access.

**COURSE WEBSITE:** [http://courses.cse.tamu.edu/jmichael/su16/121](http://courses.cse.tamu.edu/jmichael/su16/121)

The course website will be a repository of lab work descriptions, homework descriptions, slides, etc.

**ECAMPUS:** [https://ecampus.tamu.edu/](https://ecampus.tamu.edu/)

Will be used for recommended sequencing of content and lab work and for hosting virtual office hours.

The recommended browsers for eCampus access are Mozilla Firefox or Google Chrome (Internet Explorer is not recommended). For additional information on support browsers for eCampus, please visit [http://tx.ag/eCampusBrowserSupport](http://tx.ag/eCampusBrowserSupport).

**PIAZZA:** [piazza.com/tamu/summer2016/csce121700/home](http://piazza.com/tamu/summer2016/csce121700/home)

All questions will be fielded through Piazza. Email should only be used in rare instances.

The primary benefit is that for many questions everyone can see the answer and other students can answer as well. We will endorse good student responses.

You can also post private messages that can only be seen by instructors. This allows any instructor or TA to answer which generally leads to quicker response times. Only use email when you do not want all instructors and TAs to see the message.


**VOCAREUM:** [https://www.vocareum.com/](https://www.vocareum.com/)

Online code submission system. Vocareum supports autograding. The system is new, so we will only use the autograding in limited situations. We will create accounts for you, and you will receive email instructions from Vocareum on connecting.

**GRADESCOPE:** [https://gradescope.com/](https://gradescope.com/)

Used to turn in some assignments. This system provides a better grading system for instructors and TAs than what is available in eCampus.

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**Course Copyright**

The materials used within this course are copyrighted. These materials include, but are not limited to, the syllabi, quizzes, exams, lab problems, online handouts, course videos, etc. Because these materials are copyrighted, you do not have the right to copy or distribute these materials, unless permission is expressly granted.

**Course Plagiarism**

All materials generated by the instructor for this class (which may include but are not limited to syllabi and in-class materials) are copyrighted. You do not have the right to copy such materials unless the instructor expressly grants permission. As commonly defined, plagiarism consists of passing off as one’s own the ideas, words, writing, etc. which belong to another. Plagiarism is one of the worst academic violations, for the plagiarist destroys trust among others. If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section “Scholastic Dishonesty.”
People

Instructors

Dr. J. Michael Moore, PhD
Instructional Assistant Professor
- Email: jmichael@cse.tamu.edu
- Office: HRBB 325
- Phone: 979-845-5475
- Office Hours: Posted on course website and by appointment
- Web: http://faculty.cse.tamu.edu/jmichael/

Dr. Dilma Da Silva
Professor
- Email: dilma@cse.tamu.edu
- Office: HRBB 305B
- Phone: 979-845-5820
- Office Hours: Posted on course website and by appointment
- Web: http://faculty.cse.tamu.edu/dilma/

Teaching Assistants

Sampath Jayaratna
- Email: sampath@tamu.edu
- Office Hours: Posted on course website and by appointment

Michael Nowak
- Email: m.n@tamu.edu
- Office Hours: Posted on course website and by appointment

Peer Teachers
Peer teachers hold office hours and can assist with programming, etc. Office hours are posted on the Peer Teachers website.
- Location: Peer Teacher Central (HRBB 129)
- Web: http://engineering.tamu.edu/cse/academics/peer-teachers/
Virtual Office Hours

To attend virtual office hours, students will need to make sure they have set up Bb Collaborate to run on their computer(s) and mobile devices. Please visit http://blackboard.force.com/publickarticleview?id=kA7700000000CblW to check your system requirements and test your connection.

It is required to have a microphone and webcam when using Bb Collaborate. While many students use a built-in webcam, it is recommended to have a headset with a microphone, such as a smartphone headset, for the virtual office hours and group collaboration.

Learning Outcomes

At the end of the course, under ABET outcomes (a), (e), and (k), students should be able to:

1. Understand computer program structure, design and development.
2. Use primitive data types and control structures in computer programs.
3. Understand and apply vectors, strings, and structs.
4. Declare and use functions in computer programs.
5. Understand object-oriented programming concepts: objects, classes, inheritance, polymorphism, and encapsulation.
6. Design and create simple graphic user interfaces.
7. Understand and apply file I/O in computer programs.
8. Understand and use basic algorithms for searching, sorting, lists, trees and maps.
9. Navigate and make use of class libraries.
10. Write simple computer programs in a high-level programming language, C++.
11. Complete a team design project using knowledge and principles from the course.

Netiquette

Netiquette is network etiquette. Netiquette covers both common courtesy online and the informal when communicating with other online. TAMU Instructional Technology Services provides some general netiquette rules that students and faculty are expected to follow in this course. For more information on netiquette, please visit http://its.tamu.edu/Distance-Education/Aggie-Honor-Code-Netiquette

Tentative* Schedule

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC(S)</th>
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<tbody>
<tr>
<td>5/31</td>
<td>Computer Organization, Data Representation, Assignment &amp; Variables, First Program, Software Development Process</td>
</tr>
<tr>
<td>6/6</td>
<td>Control Structures (Sequence, Selection, Iteration), Exceptions, Compound Data</td>
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<tr>
<td>6/13</td>
<td>Compound Data, Streams / Files</td>
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<tr>
<td>6/20</td>
<td>Function basics, Command Line Parameters</td>
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<tr>
<td>6/27</td>
<td>Functions, Recursion</td>
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<tr>
<td>7/4</td>
<td>Objects &amp; Classes</td>
</tr>
<tr>
<td>7/11</td>
<td>Dynamic Memory (including pointers)</td>
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<tr>
<td>7/18</td>
<td>Dynamic Memory, Inheritance / Polymorphism</td>
</tr>
<tr>
<td>7/25</td>
<td>Inheritance / Polymorphism, Graphics, Graphical User Interfaces with Event Driven Programming</td>
</tr>
<tr>
<td>8/1</td>
<td>Generic Programming (Templates, STL)</td>
</tr>
<tr>
<td>8/8</td>
<td>Wrap Up (one day only)</td>
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* tentative means it can change...
## Grading

<table>
<thead>
<tr>
<th>% total</th>
<th>&gt;=90</th>
<th>80-89</th>
<th>70-79</th>
<th>60-69</th>
<th>&lt;60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter Grade</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
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### EXAMS
- Midterm Exam (20%)
- Final Exam (30%)

Exams will be short answer, hand execution and analysis of code, and hand writing code. You must take the exam at the allotted time. You may take the exam here in College Station. Alternatively, you may pay a proctoring service and take it at their site. Information, on scheduling a proctored exam is on the course website.

### ZYBOOK
- Participation Activities (5%): For full credit, you must successfully complete 85% by the due date.
- Challenge Activities (5%): For full credit, you must successfully complete 85% by the due date. The due date is one week after the due date for the participation activities in the corresponding sections.

These are hard due dates and you cannot receive credit for late submission. Only requiring 85% for full credit allows some omissions during extenuating circumstances.

### HOMEWORK
Homework will be a combination of programming assignments, reports, drills, and questions. You must complete homework individually. Grades for programming assignments will be based on analysis, design, correctness of the code, code structure, and program readability. See the course website for more details and submission instructions. Can be submitted late for a penalty.

### LAB WORK
Lab work will be activities to help you get a better understanding of concepts. For full credit, you must complete 85% of activities. While you will submit your results individually, it is acceptable to work with others to successfully complete these.

Sometimes we will require that you do some of these activities as a team.

These are hard due dates and you cannot receive credit for late submission. Only requiring 85% for full credit allows some omissions during extenuating circumstances.

### EXTRA CREDIT
You can get up to one point added to your final grade through a culture reports that broaden your exposure to computer science. You can submit up to two reports, and each is worth one-half point. Details for selecting material, writing, and submitting the extra credit is on the course website.

* At the end of the semester, we will use data from your video watching activity, lab and class attendance, interactions during office hours, piazza activity, completion of extra credit, and completeness of graded work to potentially boost borderline grades to the next level.
Make Up & Late Work

Please review Texas A&M student rule 7: http://student-rules.tamu.edu/rule07

Participation is expected.

It is your responsibility to keep up with the class, even when unexpected events interfere.

Note that watching videos is not graded since some of you might not need every video provided.

Exam Make Up
Missed exams will only be rescheduled for university excused absences. Note that if advanced notice is not feasible, you have 2 business days to provide notification. See student rules. A zero will be assigned for exams due to an unexcused absence. Documentation must be submitted prior to making up a missed exam.

Late Homework
Submission time is determined by the timestamp recorded for your submission on the online system. If submitted late, homework will receive a grading penalty. The number of minutes late the work is turned in (m) will be used to compute the penalty. Your overall grade for the assignment will be multiplied by 0.9998^m. Note: Late work cannot be accepted once solutions are shared or discussed in class.

How turning in late work can affect your grade:

<table>
<thead>
<tr>
<th>Minutes Late</th>
<th>Max Grade</th>
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<tbody>
<tr>
<td>5</td>
<td>99.9%</td>
</tr>
<tr>
<td>60</td>
<td>98.8%</td>
</tr>
<tr>
<td>1440 (1 day)</td>
<td>75%</td>
</tr>
<tr>
<td>2880 (2 days)</td>
<td>56.2%</td>
</tr>
<tr>
<td>4320 (3 days)</td>
<td>42.1%</td>
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zyBook & Lab Work
These cannot be submitted late for credit. However, you should make sure you understand them all. Only requiring 85% completion allows for omitting some when extenuating circumstances arise such as excused absences.

Course Support
In addition to contacting the instructor or graduate assistant for course content related questions, there is a variety of campus resources for course support.

Technology Support:
For technological issues related to eCampus and software, contact the TAMU Help Desk:

- Student eCampus Help Website, http://ecampus.tamu.edu/student-help.php
- TAMU IT Help Desk:
  - Website: http://hdc.tamu.edu/index.php
    (Online Chat is available)
  - Phone: (979) 845-8300
  - Email: helpdesk@tamu.edu
- CSE Help Desk
  - Website: https://wiki.cse.tamu.edu/index.php/Main_Page
  - Phone: (979) 845-5550
  - Email: helpdesk@cse.tamu.edu

The TAMU Help Desk is open 24 hours a day 7 days a week. If your technical problems are unable to be resolved within 48 hours, please contact instructors or TAs for additional assistance.

Technology issues are not an excuse for missing a course requirement – make sure your computer is configured correctly and address issues well in advance of deadlines.
Student Rules

Each student has the responsibility to be fully acquainted with and to comply with the Texas A&M University Student Rules. More specific rules, information and procedures may be found in various publications pertaining to each particular service or department. For more information, please visit http://student-rules.tamu.edu/

Academic Integrity

“An Aggie does not lie, cheat or steal, or tolerate those who do.”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

Aggie Honor System Office
You should be familiar with the Aggie Honor System Office. Their website provides more information on academic integrity, plagiarism, etc.
http://aggiehonor.tamu.edu/

- Definitions of academic misconduct, including plagiarism
  http://aggiehonor.tamu.edu/RulesAndProcedures/HonorSystemRules.aspx#definitions
- Potential sanctions

Acknowledgement
Note that most assignments will include reminders of the academic dishonesty policy. By submitting anything for grading, you are essentially saying “On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work. In particular, I certify that I have listed above all the sources that I consulted regarding this assignment, and that I have not received or given any assistance that is contrary to the letter or the spirit of the collaboration guidelines for this assignment.”

Plagiarism
Individual programming MUST be done on your own. You must write assignments in your own words. Plagiarism will not be tolerated.

To help identify possible instances of plagiarism, we may use systems for plagiarism detection. Students found to have engaged in plagiarism will be punished. A typical result is an F in the course and submission of the incident to the Aggie Honor System.

Collaboration
Collaboration and team work are important for facilitating learning, and your peers can be a great resource. So you are encouraged to discuss problems and general approaches with each other (but not actual solutions). Regardless, unless stated otherwise, all assignments must be done on your own. The basic rule is that no student should explicitly share a solution with another student (and thereby circumvent the basic learning process), but it is okay to share general approaches, directions, and so on. If you have an issue that needs clarification, contact an instructor or TA.