CSCI 1302 – Computer Science II

Department of Computer Science and Information and Technology
College of Information and Mathematical Sciences Clayton State University

Instructor: Ken Nguyen

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Spring, 2014 – Office Hours
Monday: 12:30PM - 2:30PM
Tuesday/Thursday: 11:10AM-12:10PM and 3:30PM - 4:30PM

General Information

Course Name: CSCI 1302 – Computer Science II
Course Number: 20606
Meeting Date and Time: TR 8:25AM – 9:40AM
Location: U331

Important dates:
Holidays: Jan 20 – MLK Day
Last day to withdraw: Mar. 7
Spring break: Mar. 8 - Mar. 16
Last day of classes: May 5 (May 1st for our class)
More on CSU’s Calendar: http://www.clayton.edu/calendar

<table>
<thead>
<tr>
<th>Course Assessment</th>
<th>Portion of Grade</th>
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<tr>
<td>3 Exams (tentative dates: Feb. 18, Apr. 1, and Thursday May 8@ 8:00 AM)</td>
<td>210 points (70 points each)</td>
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<td>5 Assignments (Due dates TBA)</td>
<td>150 points (30 points each)</td>
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<tr>
<td>3 Quizzes (Tentative dates: Jan. 30, Mar. 6, and Apr. 17)</td>
<td>90 points (30 points each)</td>
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<td>5 activities/exercises (Due dates TBA)</td>
<td>50 points (10 points each)</td>
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<td>(Extra 10 points will be given to students with no more than 3 absents)</td>
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<tr>
<td>Total</td>
<td>500 points</td>
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Final grade will be based upon your assessment scores using the following scale:
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<tr>
<th>Grade</th>
<th>Range</th>
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<tr>
<td>A</td>
<td>&gt;= 90% (450 points or more)</td>
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<tr>
<td>B</td>
<td>80% - 89% (400-449 points)</td>
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<tr>
<td>C</td>
<td>70% - 79% (350-399 points)</td>
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<tr>
<td>D</td>
<td>60% - 69% (300-349 points)</td>
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<tr>
<td>F</td>
<td>&lt; 60% (less than 300 points)</td>
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**Catalog description:** The course includes an overview of abstract data types (ADTs); arrays (multi-dimensional) and records; sets and strings; binary files; searching and sorting; introductory algorithm analysis (including Big-O); recursion; pointers and linked lists; software engineering concepts; dynamic data structures (stacks, queues, trees). A high level programming language will be used. (3 lecture – 0 lab – 3 semester credit hours)

**Prerequisites**
CSCI 1301 with a minimum grade of C OR  
CSCI 1371 with a minimum grade of C

**Course Outline:** CSCI 1302 expands the knowledge and skills obtained in CSCI1301. Topics covered in CSCI1302 include data abstraction, data structures and algorithms, with an emphasis on programming. Tentatively, the topics to be included from the required textbook(s) are:
- Week 1: Review of Classes and Arrays (Chapters 6-7)
- Week 2-4: Data Abstraction: Object Oriented Design (OOD) and Object Oriented Programming (OOP) (Chapters 8)
- Week 5-6: Polymorphism (Chapter 10)
- Week 7-8: Strings, Text I/O and Wrapper classes (Chapter 9)
- Week 9-10: Exceptions and Advance file I/O (Chapter 11)
- Week 11-12: Introduction to Algorithms (Chapter 15)
- Week 13-15: GUI Applications (Chapter 12, 13, 14)
- Week 16: Databases (Chapter 16)

**Course Materials:** The course syllabus, important information, and electronic files for download are available on the instructor’s course website. Students should refer to this course website for information pertaining to this class.


**IDE and Compiler:** Eclipse Classic IDE (Free at [http://www.eclipse.org/downloads/](http://www.eclipse.org/downloads/)) or any compatible Java IDE/Compiler

**CS Program Outcomes**
The CS curriculum is built on six core program outcomes. Successful completion of this course will contribute to the following subset of these six outcomes.

Graduates will demonstrate a **Developing** level of mastery for the following outcomes:
- Demonstrate mastery of the theoretical underpinnings of computer science (outcome #5).

Graduates will demonstrate a **Mature** level of mastery for the following outcomes:
- Solve complex and significant problems with professional skill by formulating efficient and effective algorithmic solutions (outcome #1).
- Express algorithms clearly and correctly in a variety of programming languages (outcome #2).

**Course Learning Objectives:** Students are expected to obtain a developing level of mastery in fundamental concepts in computer science. They will show a mature level of understanding in formulating efficient algorithms in a variety of languages. Students will demonstrate understanding through assessments that cover a broad range of concepts and topics. Students should show potential to perform independently and should exhibit a high level of reasoning, critical thinking and problem solving skills. Course objectives are listed for these CS program outcomes:

- **Demonstrate sufficient foundational knowledge of computer science:** Operating Systems, Databases, Networking, Graphics, Software Engineering, Gaming and Web.
  - Demonstrate understanding of the underlying principles of operating systems, including processes, deadlock, and memory management.
  - Demonstrate knowledge of relational databases, including tables, rows, and keys.
  - Demonstrate understanding of Graphical User Interfaces.
  - Develop computer gaming applications.

- **Demonstrate mastery of the theoretical underpinnings of computer science.**
  - Understand basic data structures concepts and analysis.
  - Differentiate between Deterministic Finite Automata (DFAs) and Non-deterministic Finite Automata (NFAs).
  - Explain the importance and underlying principles of Turing Machines.
  - Demonstrate a basic understanding of some aspects of Artificial Intelligence.
  - Be able to explain the difference between NP-Complete and NP-Hard classes of problems.

- **Solve complex and significant problems with professional skill by formulating efficient and effective algorithmic solutions.**
  - Convert real-world problems into computer programs.
  - Work with current Integrated Development Environments and Application Programming Interfaces.
  - Understand how data abstraction (e.g. classes/objects) and procedural abstraction are used in developing solutions.
Understand how concepts of inheritance and polymorphism can be used to generate effective and reusable solutions.

- Express algorithms clearly and correctly in a variety of programming languages.
- Work with Object-Oriented Programming languages.
- Develop an understanding of the role of purely functional and declarative languages.
- Declare classes and instantiate objects.

Operation Study:
At Clayton State University, we expect and support high motivation and academic achievement. Look for Operation Study activities and programs this semester that are designed to enhance your academic success such as study sessions, study breaks, workshops, and opportunities to earn Study Bucks (for use in the University Bookstore) and other items.

Assessment: You will have numerous opportunities to practice and demonstrate mastery of the materials covered in this course. It is up to you to keep current on all readings and assignments (including in-class announcements). Your instructor will provide you with the course assessment details.

Collaboration: Collaboration is prohibited on assignments, exams, tests, and quizzes in this course, unless explicitly specified by the course instructor.

Makeup Policy: If you are forced to miss one of the quizzes, exams, or tests because of illness or other catastrophic incidents, you must notify the instructor in advance. Before a makeup is given, you must supply written evidence (e.g., a note from a physician or hospital) that you were unable to take the quiz/exam/test at the original time. Without such evidence, you may receive a score of zero for the quiz/exam/test. Seating charts may be used for the quizzes/exams/tests, and may change from one event to the next. No makeup is allowed for labs, assignments, projects, and bonuses.

Attendance Policy Daily attendance is strongly encouraged. Any student missing a lesson is responsible for any material assigned or covered in class during his/her absence

Late Work Policy Each assignment/homework/project is due at the beginning of the class on the assigned date. Assignments turned in after the beginning of the class will be considered late. Late submission penalty is 20% and the assignment must be turned in by the start of the first class after the due date. No assignments will be accepted after that class. It takes about 7-10 days before your work is returned. If more time is needed, you will be notified.

Classroom Etiquette: Cellular phones must be turned off during class. Please do not arrive late, leave early, or go in and out of class, since this behavior is very distracting

Words of Wisdom (TAKE THIS PART SERIOUSLY!)
- You should bring your computer and your textbooks to each class meeting.
If a class is to be canceled or delayed, you will be notified either by e-mail, posted message on the class web-site, or in-class announcement, as soon as possible. Any missed class topics will be covered during the following class.

Start assignments early. This way, you can ask questions and clarify things that are confusing. Be sure to take a look at the homework when you receive it and not an hour before it is to be turned in!

**Your grade in this course is determined completely on performance, not on effort.** If you cannot keep up with the pace of this class, please talk with your professor as soon as possible.

**Academic Misconduct**
If a student is found obtaining or granting inappropriate help in this course on any assignment (test, quiz, exam, homework, etc.) he/she will receive an F in the course. The offense will go on permanent record with the university. If this is not the student’s first academic misconduct offense at CCSU, he will be recommended for expulsion from the university. This is in full accord with CCSU’s policy, and we encourage you to read and review the university’s policy in your student handbook (can be accessed via [http://admissions.clayton.edu/studentaffairs/](http://admissions.clayton.edu/studentaffairs/)). Information about your rights can be found at the office of Community Standards’ site [http://www.clayton.edu/community-standards/home](http://www.clayton.edu/community-standards/home). Here are the forms will be used for handling academic misconducts:

1. [http://www.clayton.edu/Portals/47/docs/specification-charges-form.pdf](http://www.clayton.edu/Portals/47/docs/specification-charges-form.pdf)
2. [http://www.clayton.edu/Portals/47/docs/academic-misconduct-instructor-adjudicate-form.pdf](http://www.clayton.edu/Portals/47/docs/academic-misconduct-instructor-adjudicate-form.pdf)
3. [http://www.clayton.edu/Portals/47/docs/student-conduct-flow-chart.PDF](http://www.clayton.edu/Portals/47/docs/student-conduct-flow-chart.PDF)

**ITP Choice Information**
Beginning Fall Semester 2001, all students at CCSU are required to state that they have on-demand access to a notebook computer that meets the recommended hardware/software specifications that have been established by Clayton State faculty. Academic penalties may be incurred for not meeting this requirement. See [http://itpchoice.clayton.edu](http://itpchoice.clayton.edu) for more information.

**Disability Services**
Students with disabilities who require reasonable accommodations need to register with Disability Services (DS) in order to obtain their accommodations. You can contact them at 678-466-5445 or E-mail at disabilityservices@clayton.edu. If you are already registered with DS and are seeking accommodations for this course, please make an appointment with me to discuss your specific accommodation needs for this course and give me your accommodations letter.

**Available Resources:**
1. Most of your technology and software issues/concerns can be resolved by the HUB, [http://www.clayton.edu/hub](http://www.clayton.edu/hub)
2. Your instructor holds regular office hours and is willing to assist you with any questions you may have during the semester.
3. The Center for Academic Success (CAS) is located on the lower level of the Library. Go to [http://www.clayton.edu/cas](http://www.clayton.edu/cas) for information on tutoring programs and other assistance.
Note: *The syllabus and the schedule are subject to change.*