# Description: CSU_Logo_maroon

**Course Syllabus**

**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

**COLLEGE OF SCIENCE AND ENGINEERING**

***“Central State University Marauders act out of service, protocol, and civility. Service is our commitment to our institution and the greater community; protocol is our adherence to and value of best practices for accomplishing goals; and civility is our active respect for one another, and for our past, our present, and our future. These tenets define the Central State Man and the Central State Woman.” –* President Cynthia Jackson-Hammond**

### Course Information

Document Date: Fall 2016

Course Description:

**CPS1191 Computer Science I (I;4):** Number systems, computer history, time sharing, system commands, file editing, algorithms, flow-charting, pseudo-code, top-down design, branching, looping, arrays, strings, basic input and output (I/O) operations, report writing, scientific applications, business applications and graphics . Co-requisite: MTH1750

Classroom Location: J. I. Smith Center 126

Class Time and Day: MW 11:00am-12:40pm

### Instructor information:

Name: Dr. Jean-Jacques Medastin

Office: Top of Ward Center Room# 205

Office Telephone: 937-376-6302

E-mail: jmedastin@centralstate.edu

Office hours: MW 5:00pm-7:00pm, or by appointment

**Required Texts And Materials:**

For reference and study of programming, you will use the textbook: **Starting out with C++ From Control Structures through Objects. 8th Ed.** by Tony Gaddis

**Instructional Methods:**

The method of instruction for this course will be lecture. The instructor will present materials on the board and/or through PowerPoint slides. Questions will be asked occasionally during class and problems will be solved interactively in class to improve students’ critical thinking. Students will explore most topics through assignments, quizzes, examinations and recitation reviews. Students will also have opportunities to discuss certain topics in class.

**Course Objectives, Topics, and other content:**

The objectives of the course are to teach the fundamentals of scientific computer programming techniques using the language constructs available in the C++ and C programming languages. Students will be required to use effective program design techniques, such as:

* pseudo code
* flow charting and/or
* structure charts

from reference texts and lecture notes. They shall be required to implement the design using the top down analysis method, and the incremental programming approach. The course will also teach the fundamentals of Software Engineering principles which emphasizes a modular program structure. Students shall be required to use a clear and concise programming style. All programs must be sufficiently documented. Approximately two-thirds of the course will consist of classroom lectures and on-line sample programs (developed in class and from the text). The other third will consist of hands-on programming exercises for students in closed computer laboratory sessions.

### Student Learning Outcomes and Assessment:

**Central State University’s Institutional Learning Outcomes:**

While this course has specific learning outcomes which are described elsewhere below, the following CSU institutional learning outcomes will also be reinforced by the activities and assignments:

* Effective Communication Skills, Written and Verbal.
* Critical Thinking Skills
* Application of the Scientific Process
* Awareness of Social and Cultural Factors Affecting Learning
* Competency in the Field of Study

**Specific Learning Outcomes for this Course**:

|  |  |
| --- | --- |
| **Student learning outcomes** | **Assessment** |
| 1. Design algorithms for C++ programs using pseudo code or flowcharts. | Class problem, Homework, Quizzes and Exams |
| 1. Apply C++ programs using proper syntax for statements such as:    * arithmetic assignment    * input and output for standard devices    * input and output for disk files    * decisions    * Looping | Class problem, Homework, Quizzes and Exams |
| 1. Develop C++ programs using built-in data types and user defined data types. | Class problem, Homework, Quizzes and Exams |
| 1. Develop programs using C++ functions that pass parameters by value or by reference. | Class problem, Homework, Quizzes and Exams |
| 1. Develop C++ programs using 1-dimensional arrays and multi-dimensional arrays. | Class problem, Homework, Quizzes and Exams |
| 1. Develop C++ programs using structures and arrays of structured data. | Class problem, Homework, Quizzes and Exams |
| 1. Describe C++ programs with clear and concise language that explains the algorithm used to design the program. | Class problem, Homework, Quizzes and Exams |
| 1. Perform professional presentations on the algorithm, code, input and output for a term project program. | Project |

### Course Schedule/Calendar:

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Chapter** | **Topic** | **Assignments** |
|  | **1** | Introduction to Computers |  |
| **1** | **2** | Introduction to C++   * The **cout** statement * Built-in Data Types | Class Program 1  Computer Lab. 1 |
| **2** | **3** | Expressions and Interactivity |  |
|  |  | * The **cin** statement * Math Expressions | Class Program 2  Computer Lab. 2 |
| **3** | **Sep 7** | **Labor Day (No Classes, Offices Closed)** | |
|  | **4** | Making Decisions   * The **if/else** Statement * Logical Operations | Class Program 3  Computer Lab. 3 |
| **4** | **5** | Loops and Files   * **while** loop * **do-while** loop * **for** loop | Class Program 4  Computer Lab. 4 |
| **5** | **6** | Functions   * Calling Functions * Passing Data by Value * Returning Values | Class Program 5  Computer Lab. 5 |
| **6** |  | Review Section  **Examination I** |  |
| **7** | **6** | Functions   * Reference Variables as Parameters | Class Program 6  Computer Lab. 6 |
| **8** | **7** | Arrays   * One dimensional Arrays * Numeric/ String Arrays * Two dimensional Arrays | Class Program 7  Computer Lab. 7 |
| **9** | **7** | Arrays (continued)   * Numeric/ String Arrays * Two dimensional Arrays | Class Program 8  Computer Lab. 8 |
|  | **Oct 9-12** | **Fall Break (No Classes)** |  |
| **10** |  | Review Section |  |
|  |  | **Examination II** |  |
| **11** | **8** | Searching and Sorting   * Linear Search * Bubble Sort | Class Program 9  Computer Lab. 9 |
| **12** | **9** | Pointers   * Pointers and Arrays * Pointer Arithmetic | Class Program 10  Computer Lab. 10 |
| **Week** | **Chapter** | **Topic** | **Assignments** |
| **13** | **Nov 11** | **Veterans Day (No Classes, Offices Closed)** | |
|  | **10** | **Characters and Strings**   * Character Testing * Storage of Strings | Class Program 11  Computer Lab. 11 |
| **14** | **11** | Structured Data   * Accessing Structured Members * Initializing Structures * Arrays of Structures | Class Program 12  Computer Lab. 12 |
|  |  | Review Section |  |
|  |  | **Examination III** |  |
| **15** | **12** | Advanced File Operations   * Sequential File Input * Sequential File Output * End-of-File Detection | Class Program 13  Computer Lab. 13 |
|  | **Nov 26-29** | **Thanksgiving Holiday (No Classes, Offices Closed)** | |
| **16** |  | Review Section |  |
|  | **Dec 7** | **Last Day of Classes** |  |
| **17** | **Dec 9** | **FINAL EXAMINATION** | **Wednesday**  **10:00 am – 11:45 a.m.** |

**Performance Evaluation in this Course:**

The following activities/methods of evaluation will be used to assess the performance of every student enrolled in the course:

1. Exams: There will be three interim exams and one final exam during the semester. All the exams are in-class and open-notes. These exams will be administered under the supervision of the instructor. The dates for your chapter exams are listed in the course calendar. There will be no make-up exams without a university approval and a documented excuse.
2. Quizzes: 0-3 pop quizzes will be given in class on random dates. All the quizzes are open-notes. There will be no make-up quizzes.
3. Homework and class problems: There will be homework and/or class problems assigned for most chapters. All class problems should be completed during the class time. All homework should be submitted through the student’s Blackboard account. Homework will generally be due within one week, and will be labeled “Late” if the student fails to submit it before the beginning of class on the due day. Late assignments will not be accepted without medical emergencies or similar exceptional circumstances that must be discussed in advance with the instructor.
4. Class Demeanor: Students are expected to behave and perform in a professional manner during class. Any behavior that could cause disturbance and/or violate the rights of other participants is not permitted in class. No music, cell phones or loud talking are allowed in class. Negative behavior, such as unexcused absences, tardiness, class disruptions, vulgarity, internet surfing, phone calling, music playing, video watching, loud talking, eating, drinking, smoking, and sleeping, could result in a reduction of up to 5% of a student's final grade.

**Grading Policy:**

Assessment elements of the final grade for the course:

|  |  |  |
| --- | --- | --- |
| **Evaluation Methods.**  **Activities, attendance** | **Type** | **Percentages**  **(or Points)** |
| Interim Exams (3) | Individual | 30 % |
| Class Problem/Homework | Individual | 50 % |
| Final Exam (1) | Individual | 15 % |
| Attendance and Quizzes | Individual | 5 % |
| **Total** |  | 100% |

The final letter grade will be based on the following scales:

|  |  |  |
| --- | --- | --- |
| **Percentages**  **(or Points)** | **Letter**  **Grade** | Interpretation |
| 90% – 100% | A | Superior (Very High) |
| 80% – 89% | **B** | Above Average (High) |
| 70% – 79% | **C** | Average (Satisfactory) |
| 60% – 69% | **D** | Below Average (Low/Poor Work) |
| Below 60% | **F** | Failure |

**Incomplete Grade Policy:** “*A grade of incomplete “I” is a temporary grade assigned to students who lack final assignments or projects, or who, for some other extenuating circumstance, were unable to complete the requirements of the course within the semester. The grade is assigned by the instructor with consent of the student, and the mutual understanding of the conditions under which this grade may be changed. The incomplete grade requires the signature of the instructor and the student with a brief description of the requirements necessary to receive a grade.” --------*-*CSU Course Catalog2012-2014, pg. 39*

### other Course Policies:

**Attendance Policy:**

Regular class attendance is required and necessary in this course. When the number of unexcused absences exceeds **6%** of semester hours designated for this course, the student will automatically receive an **F** in the course. This is a university policy and there are no exceptions (see University Catalog). Unexcused absences are for emergencies only. All Excused absences require documentation from the proper authorities (e.g. Health Center, medical personnel, law enforcement personnel, Career Services office, funeral director, choir director, band director, Dean of Students, athletic coach) within ten days from the day of absence.

**Tardiness/Lateness Policy:**

Students are expected to be in their seats at the beginning time of the class. An attendance sheet will be given in each class. Without instructor’s approval, any student who arrives more than 30 minutes late, or leave 30 minute prior to the end of class, will be recorded as absent. Students arriving late in class or leaving early from class will be responsible for any missed work.

**Academic Integrity/Honesty Policy:**

Written or other work submitted by a student must be the product of his or her own efforts. Academic dishonesty is unacceptable. This includes cheating on exams and plagiarism, which is a deliberate attempt to deceive by presenting someone else's work or ideas as one's own, or through creating the impression of being one's own by not giving proper credit for the work or ideas. Taking credit for a research paper written by another person, or using electronic communications devices for help on in-class exams will not be tolerated. Students engaging in any form of academic dishonesty could receive a failing grade on assigned work, an exam, or even for the course itself. Academic dishonesty may be reported to the Dean of Students for adjudication and disciplinary action.

**Americans with Disabilities Act (ADA) Policy:**

Central State University is committed to including students with disabilities as full participants in its programs, services, and activities through compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. Students with disabilities requiring accommodations to participate in class activities or meet course requirements should contact the Office of Student Disability Services at If you are a student with a documented disability please contact the Central State Office of Disability Services at 937-376-6479 to discuss course accommodations. It is the student’s responsibility to obtain and present the accommodation letter to the instructor at the beginning of the semester.

**Amendments to Syllabus:**

The instructor reserves the right to amend the syllabus. Changes will be announced in class and distributed in writing to each student. The students are responsible for receiving such changes.

**Course and Faculty Evaluation:**

Every student will be given the opportunity to evaluate the course and instructor at the end of the semester. The evaluation form will assist the instructor, the academic program, and the university in improving the effectiveness of teaching and the enhancement of learning. Students are strongly urged to participate.

**Other Information or Policies Related to the Course:**

N/A