CSCI 1302 - 007
Computer Science Principles
Fall 2023

Instructor Name: Eddie Ironsmith M.S.
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Phone: (936) 468-1619
Department: Computer Science
Office: 312C STEM

Office Hours: M 9:00 AM – 10:00 AM
T, Th 8:30 AM – 9:30 AM
T, Th 3:15 PM – 4:15 PM
(Other times by appointment)

GTA Office Hours: MWF 12pm-1pm, M-F 11am - 12pm, and M-F 5-7pm (in STEM 320)

Class meeting: Time: 12:30 PM – 1:45 PM T, Th
Place: STEM 318

Credit hours 3
Pre-requisites: Eligibility for enrollment in college algebra.
Grade Reminder: Must have a grade of C or better in each prerequisite course.

Course Description: Fundamental concepts of computer systems, systems software, and an overview of computer science issues. Problem solving and program development using a high-level programming language.

Official Course Syllabus:
For additional detail including course description, purpose of course, student learning objectives, credit hour statement, and content, see the official course syllabus here: http://sfasu.edu/docs/computer-science/undergraduate-course-CSCI1302.pdf

Student Learning Outcomes:
Upon successful completion of the course, students should be able to:
1. Demonstrate a fundamental knowledge of computer organization, computer operation, and the information hierarchy.
2. Apply the software life cycle to specific problems in such disciplines as business, mathematics, science, and engineering.
3. Perform problem analysis and program design using tools such as pseudocode, structure charts, and flowcharts.
4. Apply the features of a modern widely-used programming language in implementing solutions to well described problems. These features include declaration of data types and fundamental data structures, application of control structures (sequence, selection, repetition), utilization of I/O and file handling, development of structured program organization (subprograms with parameters), and inclusion of documentation.
5. Use operating systems tools (command system, editor, compiler, linker and loader) in single-
user and/or multi-user environments.
6. Create appropriate test data and apply debugging and testing strategies.
7. Demonstrate a knowledge of fundamental computing terminology.
8. Demonstrate an understanding of the role of computing in society.


Reference Books: Please refer to the syllabus link in the Purpose of Course section above.

Course Requirements: Students are expected to attend classes and ensure they understand the material being taught. Students are encouraged to ask questions and get their difficulties resolved while in class. Regular quizzes, homework assignments and examinations will test the student understanding of the material. The weightage to these components is specified in the Grading Policy below.

Course Calendar: This course meets for a minimum of 37.5 lecture contact hours during the semester, including the final exam. Students have significant weekly reading assignments. Students are expected to complete homework/programming assignments, quizzes and 2-3 periodic exams in addition to the final exam. Students are expected to prepare for any class assignments or quizzes over the material covered in class or in the reading material. Successful completion of these activities requires at a minimum 6 additional hours of outside of classroom work each week. In addition, the course will require 150 asynchronous minutes to be completed. This component will be addressed through attending a seminar/researching a relevant topic followed by a discussion board summary or a Quiz. Please see the schedule on the last page of the syllabus that details the topics to be covered during the semester. The schedule lists the reading assignments that the students are expected to follow.

Grading Policy: Overall grade will be based on the performance on the following components
1) Bonus 5 % (Bonus for attendance, participation, and completion of course evaluation)
2) Quizzes 10 %
3) HW Assignments 30 %
4) Midterm Exams 30% (3 x 10% each)
5) Final Examination 30 %

Grade bands are usually 90+ A/80+ B/70+ C/60+ D/ 59 and lower F

Exam Note: Examinations are weighted at 60% of the overall course grade. Valid student ID cards must be presented on each examination day. (No ID... No exam...Grade of zero) There are no exemptions from the final examination and no changes in taking the final examination. If the final exam time is a problem, you need to drop this course.

Assignments: Class assignments (HW and Lab assignments) will total 30% of the course grade

Attendance policy: Attendance and constructive class participation is expected. There is no specific grade for attendance, but students who participate and have full attendance (except for excused absence) will qualify for up to a 5% bonus grade provided 75% of the class also completes the end of the semester course evaluation. The Dean of Students Office will help to notify faculty of a student’s
absence for certain parameters. You can go HERE to learn more about this new process and also submit the form. It is still at the faculty member’s discretion on any missed assignments, tests, etc.

**Educational Objectives** Upon successful completion of the course, students should be able to:

1. Demonstrate a fundamental knowledge of computer organization, computer operation, and the information hierarchy (binary numbers and character representations).
2. Apply the software life cycle to specific problems in such disciplines as business, mathematics, science, and engineering.
3. Perform problem analysis and program design using tools such as pseudocode, structure charts, and flowcharts.
4. Apply the features of a modern widely used programming language in implementing solutions to well described problems. These features include declaration of data types and fundamental data structures, application of control structures (sequence, selection, repetition), utilization of I/O and file handling, development of structured program organization (subprograms with parameters), and inclusion of documentation.
5. Use operating systems tools (command system, editor, compiler, linker, and loader) in single-user and/or multi-user environments.
6. Create appropriate test data and apply debugging and testing strategies.
7. Demonstrate a knowledge of fundamental computing terminology.
8. Demonstrate an understanding of the role of computing in society.

**Course Content Hours**

Introduction to computer science ..........................................................................................................................................................................................1

Basic Concepts of Computer Systems .................................................................................................................................................................2
  Architectural overview
  Data storage and representation
  Computing environments
  Computer languages

Systems Software .........................................................................................................................................................................................................5
  Operating systems, editors, compilers
  Program linking, loading, and execution

Problem Solving Concepts ................................................................................................................................................................................................9
  Strategies for problem solving
  Algorithm representation

Program Development .................................................................................................................................................................................................20
  Use of a high-level programming language to solve simple problems on a computer
  programming language concepts and features: primitive data types, expressions and operations, functions and parameters, fundamental control structures, one-dimensional arrays, text files

Software Engineering Principles ........................................................................................................................................................................3
  Life Cycle and Development Process
  Modular design and communication
Academic Integrity (4.1)

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

AI use: Work submitted for grading must be your own. Use of AI-generated material for homework, quizzes, or exams is a violation of SFA’s academic integrity policy (see Plagiarism above).

Withheld Grades Semester Grades Policy (5.5)

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically
becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.
**Students with Disabilities**

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

**Student Wellness and Well-Being**

SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**

**The Dean of Students Office** (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

**SFA Human Services Counseling Clinic** Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

**The Health and Wellness Hub** “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education

www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

**Crisis Resources:**

- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- johCrisis Text Line: Text HELLO to 741-741

**Schedule** -
<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Quiz/Assignment</th>
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<tbody>
<tr>
<td>1</td>
<td>Tuesday, August 29, 2023</td>
<td>Introduction, Review Syllabus, policies, schedule, D2L, etc</td>
<td>Scavenger Hunt D2L</td>
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<td></td>
<td>Thursday, August 31, 2023</td>
<td>Chapter 1 Introduction to Computers, Programs and Java</td>
<td>Read Chapter 1 &amp; Slides</td>
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<td>2</td>
<td>Tuesday, September 5, 2023</td>
<td>Chapter 1 Introduction to Computers, Programs and Java</td>
<td>Read 1, Quiz1: Chapter 1</td>
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<td>Thursday, September 7, 2023</td>
<td>Chapter 1 - In Class Programming Activity</td>
<td>Read 1, HW1: Chapter 1</td>
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<td>3</td>
<td>Tuesday, September 12, 2023</td>
<td>Chapter 2 Elementary Programming</td>
<td>Read 2/Slides, Quiz2: Ch. 1</td>
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<td>Thursday, September 14, 2023</td>
<td>Chapter 2 Elementary Programming</td>
<td>Read 2, HW2: Chapter 2</td>
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<td>4</td>
<td>Tuesday, September 19, 2023</td>
<td>Chapter 2 - In Class Programming Activity</td>
<td>Read 2, HW3: Chapter 2</td>
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<td>Thursday, September 21, 2023</td>
<td>Exam 1 – Chapters 1 &amp; 2</td>
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<td>5</td>
<td>Tuesday, September 26, 2023</td>
<td>Chapter 3 Selections</td>
<td>Read 3/Slides, Quiz3: Chpt 2</td>
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<td>Thursday, September 28, 2023</td>
<td>Chapter 3 Selections</td>
<td>Read 3, HW4: Chapter 3</td>
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<td>6</td>
<td>Tuesday, October 3, 2023</td>
<td>Chapter 3 Selections</td>
<td>Read 3</td>
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<td>Thursday, October 5, 2023</td>
<td>Chapter 3 - In Class Programming Activity</td>
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<td>7</td>
<td>Tuesday, October 10, 2023</td>
<td>Chapter 4 Mathematical Functions, Characters and Strings</td>
<td>Read 3, Quiz4: Chapter 3</td>
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<td></td>
<td>Thursday, October 12, 2023</td>
<td>Chapter 4 Mathematical Functions, Characters and Strings</td>
<td>Read 4, Slides, HW5: Chpt 4</td>
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<td>8</td>
<td>Tuesday, October 17, 2023</td>
<td>Chapter 4 Mathematical Functions, Characters and Strings</td>
<td>Read 4</td>
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<td>Thursday, October 19, 2023</td>
<td>Chapter 4 - In Class Programming Activity</td>
<td>Read 4, HW6: Chapter 4</td>
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<td>Tuesday, October 24, 2023</td>
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<td>Read 4, Quiz5: Chapter 4</td>
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<td>Thursday, October 26, 2023</td>
<td>Exam 2 – Chapters 3 &amp; 4</td>
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<td>10</td>
<td>Tuesday, October 31, 2023</td>
<td>Chapter 5 Loops</td>
<td>Read 5, HW 7: Chpt 5</td>
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<td>Thursday, November 2, 2023</td>
<td>Chapter 5 Loops</td>
<td>Read 5</td>
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<td>11</td>
<td>Tuesday, November 7, 2023</td>
<td>Chapter 5 Loops, Files</td>
<td>Read 5, Quiz6: Chapter 5</td>
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<td>Thursday, November 9, 2023</td>
<td>Chapter 6 Methods</td>
<td>Read 6, HW8: Chpt 5</td>
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<td>Tuesday, November 14, 2023</td>
<td>Chapter 6 Methods</td>
<td>Quiz 7 Chapter 6</td>
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<td>Thursday, November 16, 2023</td>
<td>Exam 3 – Chapters 5, 6, &amp; Files</td>
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<td>13</td>
<td>Tuesday, November 21, 2023</td>
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<td>Thanksgiving Break</td>
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<td>Thursday, November 23, 2023</td>
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<td>14</td>
<td>Tuesday, November 28, 2023</td>
<td>Chapter 7 Single-Dimensional Arrays</td>
<td>Read 7/Slides, HW9:Chpt 7</td>
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<td>Thursday, November 30, 2023</td>
<td>Chapter 7 Single-Dimensional Arrays</td>
<td>Read 7</td>
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<td>15</td>
<td>Tuesday, December 5, 2023</td>
<td>Chapter 7 – Search/Sort Algorithms</td>
<td>Quiz8 : Chapter 7</td>
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<td>Thursday, December 7, 2023</td>
<td>Chapter 7 - Cont’d, Review</td>
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<td>16</td>
<td>Tuesday, December 12, 2023</td>
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<td>Thursday, December 14, 2023</td>
<td>Final Exam Comprehensive 10:30 a.m. – 12:30 p.m.</td>
<td>STEM 318</td>
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