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# TENNESSEE TECH UNIVERSITY

## COMPUTER SCIENCE

### CSC 2310-001 OBJECT-ORIENTED PROGRAMMING AND DESIGN

01.16-05.03, 10:10-11:05 MWF, BRUN 207, 4 CREDIT HOURS, SPRING 2018

#### INSTRUCTOR INFORMATION

Instructor's Name: Martha Kosa

Telephone Number: (931) 372-3579

Email: [mjkosa@tntech.edu](mailto:mjkosa@tntech.edu)

Web: <http://www.csc.tntech.edu/~mjkosa/>

Office: Bruner 240

Office Hours: Refer to the schedule on my webpage.

Examples: <http://www.csc.tntech.edu/~mjkosa/2310s18/examples.html>

Programs: <http://www.csc.tntech.edu/~mjkosa/2310s18/programs.html>

#### COURSE INFORMATION

##### PREREQUISITES

C or better in CSC 1310 or both CSC 2110 and CSC 2111. Corequisite: [CSC 2310-10X](#).

##### COURSE DESCRIPTION

Theory and practice of object-oriented programming and design. Encapsulation, inheritance, dynamic binding, and polymorphism; and introduction to UML and design patterns.

##### COURSE OBJECTIVES/STUDENT LEARNING OUTCOMES

To gain technical knowledge of object-oriented programming techniques.

To acquire the ability to critically evaluate when and how to use (and when to avoid) the various object-oriented techniques.

To gain knowledge of current best practices for designing and implementing elegant software using object-oriented programming techniques.

To apply the above objectives in writing and testing complete, multi-class programs.

##### MAJOR TEACHING METHODS

Lectures, Programming Assignments

TOPICS TO BE COVERED:

- Object-oriented vs. non-object-oriented
  - Agile Software Development
  - Test Driven Development
- Object-oriented programming (using Java)
  - Classes
  - Composition and Encapsulation
  - Inheritance
  - Interfaces
  - Polymorphism
- Design patterns
  - State
  - Strategy
  - Command
  - Several Others
- Elegant object-oriented design
  - Refactoring
  - Law of Demeter
  - Designing for Change
- GUIs, Frameworks, MVC

TEXTS AND REFERENCES:

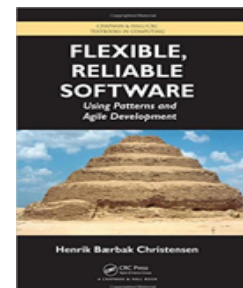
**Required:**

Flexible, Reliable Software: Using Patterns and Agile Development by

Henrik B. Christensen

ISBN-10: 1420093622

ISBN-13: 978-1420093629



## GRADING AND EVALUATION PROCEDURES:

### GRADING SCALE (IF APPLICABLE)

Letter Grade	Grade Range
A	90-100
B	80-89.99
C	70-79.99
D	60-69.99
F	59.99 and below

## COURSE POLICIES

### STUDENT ACADEMIC MISCONDUCT POLICY

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates. The Student Misconduct Policy describes the definitions of academic misconduct and policies and procedures for addressing Academic Misconduct at Tennessee Tech. For details, view the Tennessee Tech's Policy 217 - [Student Academic Misconduct at Policy Central](#).

### HONESTY:

Students are encouraged to seek help from the TAs and tutors in solving the problems presented on the programming assignments. You may discuss the problems with your classmates as long as the discussion is "how" you would solve the problem and does not include any actual code. Copying assignments or allowing your assignments to be copied by others constitutes cheating and as such will not be tolerated. **Any** sharing of code is considered cheating. I consider cheating to be a very serious offense and this conduct will result in a zero on the assignment as well as a **submission for academic misconduct for all parties**.

### ATTENDANCE POLICY:

You are expected to attend every class. You are responsible for all assignments and material covered during all class meetings whether you are present or not.

### ASSIGNMENTS AND RELATED POLICY

Your grade will be based on programs (3 @ 10% each), and exams (3 @ 15%, 20%, and 25%, including the final). Your lowest exam grade will count for 15%, and your highest exam grade will count for 25%. Missed tests can only be made up with documentation of exceptional circumstances. The last 10% of your grade will come from the lab (CSC 2310-10X). Programs are due at **11:59 p.m.** on the date specified on the assignment. Late programs will not be accepted without documentation of exceptional circumstances. Submit your programs by zipping up everything needed to compile and run your program and upload your zip file to the ilearn drop box. You are allowed **one** unexcused exception (missed a program deadline, etc.). You have three weekdays from the date that a program or exam is returned (whether you are present that day or not) to challenge a program or an exam grade. You can only receive help from me up to the day **before** the program is due.

### CLASS PLAN BY WEEKS OR DAYS

Refer to the **calendar** on my webpage (<http://www.csc.tnitech.edu/~mjkosa/2310s18/2310schedule.s18.html>).

## DISABILITY ACCOMMODATION

Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The ODS is located in the Roaden University Center, Room 112; phone 372-6119. For details, view the Tennessee Tech's Policy 340 - [Services for Students with Disabilities at Policy Central](#).