CS 3331 Advanced Object-Oriented Programming
Fall 2020 Syllabus

Course Description

Advanced Object-Oriented Programming (3-0) An in-depth exposure to the object-oriented programming paradigm, which builds upon programming experience gained in lower-level computer science classes. Emphasis on programming in an object-oriented language with which students are already familiar, and on requirements, testing, code reading, and comprehension.
Prerequisites: CS 2302 with a C or better

Contact Information	
Instructor name	Dr. Oscar A. Mondragon
Location	CCSB 3.1020
Phone	(915) 747 – 8015
e-mail	oamondragon@utep.edu
Remote class	*Mondays and* Wednesdays *1:30 to 2:50 pm* On Blackboard Collaborate
Remote office hours	Tuesdays and Wednesdays 9:00 am to 09:45 am; *On Blackboard Collaborate*

Personal enquiries should be done through e-mail messages. Course enquiries should be done through the Class forum (discussion board) by creating a new thread.

Required Readings Material

1. [Object-oriented analysis, design and implementation:](#) an integrated approach. Brahma Datha and Sarnath Ramnath. Springer 2015. eBook.
This electronic book is available at the UTEP library and you must use your UTEP email to login. This textbook is required.

Recommended Books (Not required):

2. *Head First Design Patterns*. Eric Freeman and Elizabeth Freeman. O'Reilly 2004.

3. *Head First Object-Oriented Analysis and Design*. Brett D. McLaughlin, Gary Pollice, and Dave West. O'Reilly 2006.

4. *The Elements of Java Style*. Allan Vermeulen, et al. Cambridge University Press, 2000.

5. Martina Seidl, et al., *UML@Classroom: An Introduction to Object-Oriented Modeling,* Springer, 2015 ([e-book] through UTEP library)

6. Cay S. Horstmann, *Core Java Volume I - Fundamentals,* 11th edition, Prentice Hall, 2018 ([e-book] through UTEP library)

Learning outcomes

Level 1 outcomes are those in which the student has been exposed to the terms and concepts at a basic level and can supply basic definitions. Upon successful completion of this course, students will able to:

a) Explain the differences between an object-oriented approach and a procedural approach.

Level 2 outcomes are those in which the student can apply the material in familiar situations, e.g., can work a problem of familiar structure with minor changes in the details. Upon successful completion of this course, students will be able to:

 b) Formulate use-case diagrams and scenarios to support understanding of user requirements.
 c) Use object-oriented design notations, including UML class diagrams and state machine diagrams (optionally sequence diagrams) to model problem solutions.
 d) Use basic object-oriented design patterns to structure solutions to software design problems.
 e) Translate design features, such as classes and relationships, to implementations.
 f) Use frameworks and library classes and methods, such as collections, GUI, multithreading, and networking, in problem solutions.

Level 3 outcomes are those in which the student can apply the material in new situations. This is the highest level of mastery. Upon successful completion of this course, students will be able to:

 g) Design and implement software employing the principles of modularity, encapsulation, information hiding, abstraction, and polymorphism.
 h) Design, implement, and use classes and methods that follow conventions and styles, and make appropriate use of advanced features such as inheritance, exception handling, and generics.
 i) Evaluate existing classes and software for the purposes of extension through inheritance.
 j) Create API documents for classes, fields and methods.
 k) Design and implement test suites for automated unit testing.
 l) Re-factor existing source code to improve its design or efficiency.

Summary of Course Structure

Content is provided in modules. Each module will have a menu to guide students through the content, assignments, quizzes and exams to be completed on Blackboard's course shell. The modules for this course are as follow:

Programming philosophy, Objects and classes	Programming philosophy, Functional decomposition, data, OO
	Objects and Classes
OO principles	Abstraction, modularization, encapsulation, and information hiding
	UML overview and class diagrams
OO principles - Inheritance	Inheritance - Class diagrams
	Abstract, Extend and Interface
OO principles - polymorphism	polymorphism
	Review session
Exam 1 and Use case diagrams	Exam 1
	Use case diagrams and scenarios
Inputs and Outputs	IO classes and streams
	Database connections and JSON and XML parsing
Java programming concepts and Identifying domain objects	Exceptions and Packages
	CRC
UML diagrams and Sequence diagrams	Sequence diagrams
	UML diagram, static and dynamic
Modeling behavior	Understanding behavior and State

	State transition diagrams
Exam 2	overview
	Exam 2
Design Pattern 1	Types of design patterns
	Type 1:
Unit Test	Unit Testing,
	JUnit
Multithreading and networking	Concurrency - threads
	Networking and Sockets
GUI	SWING, AWT
	Review
Design pattern 2	Type 2
	Type 3

Being Successful Remotely

This section has some tips and trick about how to be successful in your remote class. Online learning is not a spectator sport. It is everyone's responsibility to participate as much as they can so everyone can get the most from the experience. Here are some simple rules to follow to ensure your participation and engagement in the learning process:

- Ask questions: If you don't know the answer, someone else will. The discussion board is the area for asking questions related to content OR any problems (related to the class) you are having. Make sure that you have clearly indicated the subject of your message.
- Reach out to others: Offer a fact, article, link, or other item that can help others learn.
- Be appropriate: The remote classroom is not the place for insulting or insensitive comments, attacks, or venting. Inappropriate behavior can be subject to disciplinary action.
- Be diplomatic: When sending messages on emotionally charged topics, I recommend that you write the message and then walk away for at least an hour before re-reading the message and then sending it. Re-reading emotionally charged messages ensures that they are constructive instead of destructive. Think of the person on the other end.
- Stay focused: Stay on topic to increase the efficiency of your learning.

Grading Criteria

The following scale is used for assigning letter grades.

A	[90 % and above]
B	[80 % - 89 %]
C	[70 % - 79%]
D	[60 % - 69 %]
F	[0 % - 59%]

Note that there will be no "rounding up" automatically but the instructor does reserve the right to lower the grade scale if it is deemed appropriate.

Additionally, any one of the following will result on a final grade of F, even if the overall average is greater than 60%.
• Obtaining an average of less than 60% on the programming lab assignments
• Obtaining a grade of less than 60% on the final exam
• Not submitting ALL lab projects by the end of the semester, even if they are too late to receive credit (lab projects should still be functional and will be tested to ensure functionality).

Point Distribution

Quizzes/Homework/In class exercises	10%
Exam 1	10%
Exam 2	15%
Final Exam	20%
Programming Labs	35%
Reports and presentations	10%

Assignments.

Late programming lab assignments. There is a 10% penalty for each day after the due date/time. Accompanying lab reports must be turned in with the source code and should be typed. All programming assignments must have a demo session within a week of the due date. Programming assignments that do not have a demo will receive a grade of zero. All programming lab assignments must be submitted prior to the end of the semester to receive a passing grade for the course, even if it is too late to receive credit. Some project labs will be done in pairs and both members are responsible of all the code. If you cannot explain the project, you shall not receive credit. You should expect to spend at least 10-15 hours/week outside of class on reading and homework.

Homework must be done individually. While you may discuss the problem in general terms with other people, your answers and your code should be written and tested by you alone. If you need help, consult a TA, IA, or the instructor.
Exams. No make-up exams.

Participation: You must have an active participation in the class forum, assignments, and synchronous blackboard sessions.

Collaboration:
Collaboration among students is strongly encouraged.
It is acceptable to:
- Talk with other students about approaches and ideas.
- Get ideas and extra information from the internet, books, etc.

However, it is not acceptable to:
- Share code with another student (if a piece of code is submitted by two or more students, both students are guilty of cheating, regardless of who wrote the original code).
- Use code acquired from an outside source (the internet, a friend, etc.)
- Look at another student's code
- Debug another student's code

Software to detect plagiarized programs are used; appropriate disciplinary actions will be taken as necessary.

Exams:
There will be two (2) exams and one (1) final exam.
The purpose of the exams is to allow you to demonstrate mastery of course concepts. Make-up exams will be given only in extremely unusual circumstances, and at the discretion of the instructor.

Quizzes:
The purpose of a quiz is to ensure that you have read the weekly reading assignment and to verify that you have mastered the major concepts of recent lectures. Quizzes typically will be about 5-10 minutes in length and will cover the material assigned to be read for the upcoming

lecture plus selected concepts from previous lectures. There will be no make-up on missed quizzes.

Attendance:
Students are expected to be prepared and attend every remote class meeting on time. The nature of the course requires the students to attend the class meeting to be successful.

TECHNOLOGY REQUIREMENTS
Course content is delivered via the Internet through the Blackboard learning management system. Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Google Chrome and Mozilla Firefox are the best browsers for Blackboard; other browsers may cause complications. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

You will need to have access to a computer/laptop, scanner, a webcam, and a microphone. You will need to download or update the following software: Microsoft Office, Adobe Acrobat Reader, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course.

If you do not have a word-processing software, you can download Word and other Microsoft Office programs (including Excel, PowerPoint, Outlook and more) for free via UTEP's Microsoft Office Portal. Click the following link for more information about Microsoft Office 365 and follow the instructions.

IMPORTANT: If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk as they are trained specifically in assisting with technological needs of students. **Please do not contact me for this type of assistance**. The Help Desk is much better equipped than I am to assist you!

Course Communication:
How we will stay in contact with each other

Because this is a remote class, we won't see each other in the ways you may be accustomed to: during class time, small group meetings, and office hours. However, there are a number of ways we can keep the communication channels open:

- **Office Hours**: We will not be able to meet on campus, but I will still have office hours for your questions and comments about the course. My office hours will be held on Blackboard Collaborate (see the link in left menu of your BB course) during the following times:
  Tuesdays and Wednesdays: 9:00 to 09:45 am
- **Email**: UTEP e-mail is the best way to contact me. I will make every attempt to respond to your e-mail within 24-48 hours of receipt. When e-mailing me, be sure to email from your UTEP student account and please put the course number in the subject line. In the body of your e-mail, clearly state your question. At the end of your e-mail, be sure to put your first and last name, and your university identification number.
- **Discussion Board**: If you have a question that you believe other students may also have, please post it in the Help Board of the discussion boards inside of Blackboard. Please respond to other students' questions if you have a helpful response.
- **Announcements**: Check the Blackboard announcements and the class forum frequently for any updates, deadlines, or other important messages.

NETIQUETTE

As we know, sometimes communication online can be challenging. It's possible to miscommunicate what we mean or to misunderstand what our classmates mean given the lack of body language and immediate feedback. Therefore, please keep these netiquette (network etiquette) guidelines in mind. Failure to observe them may result in disciplinary action.

- **Always consider audience.** This is a graduate-level course; therefore, all communication should reflect polite consideration of other's ideas.

- **Respect and courtesy** must be provided to classmates and to the instructor at all times. No harassment or inappropriate postings will be tolerated.

- **When reacting to someone else's message,** address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation.

- **Blackboard is not a public internet venue;** all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space.

Course Policies:
What do you need to do to be successful in the course?

ATTENDANCE AND PARTICIPATION
Attendance in the course is determined by participation in the learning activities of the course. Your participation in the course is important not only for your learning and success but also to create a community of learners. Participation is determined by completion of the following activities:

- Reading/Viewing all course materials to ensure understanding of assignment requirements
- Participating in engaging discussion with your peers on the discussion boards (grading rubric provided in the "grading information" area of each forum)
- Active Participation in scheduled Blackboard Collaborate sessions (synchronous remote sessions)
- Other activities as indicated in the weekly modules

Because these activities are designed to contribute to your learning each week, they cannot be made up after their due date has passed.

EXCUSED ABSENCES AND/OR COURSE DROP POLICY
According to UTEP Curriculum and Classroom Policies, "When, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of "W" before the course drop deadline and with a grade of "F" after the course drop deadline." See academic regulations in the UTEP Undergraduate Catalog for a list of excuse absences. Therefore, if I find that, due to non-performance in the course, you are at risk of failing, I will drop you from the course. I will provide 24 hours advance notice via email.

BLACKBOARD SYNCHRNOUS COLLABORATE SESSIONS
This class requires that you participate in scheduled Synchronous Blackboard Collaborate sessions. The purpose of these sessions is for you to view live

demonstrations of the course material and/or to participate in small discussion groups with your classmates. These sessions will be held Mondays from 6:00 to 8:45 pm.

Students are expected to have an **active participation** in these sessions with a webcam and microphone. The sessions will be recorded and provided so that they can be reviewed by classmates at a later time. Students should not record the sessions and post them to any sites outside of Blackboard.

If you are unable to attend a Collaborate session, please let me know as soon as possible so that accommodations can be made when appropriate.

DEADLINES, LATE WORK, AND ABSENCE POLICY
Major Project Assignments

- Major project assignments will be due on Sundays at midnight (11:59 PM). No late work will be accepted if the reason is not considered excusable.

Discussion Board Assignments & Module Exams

- Discussion Board Assignments require a initial post due on Tuesdays at 11:59 pm MST and two peer review technical feedbacks on Thursday. You must provide reference name and pg # in both initial post and peer reviews.

- Module exams will be due on Sundays at midnight (11:59 PM). No late work will be accepted if the reason is not considered excusable.

MAKE-UP WORK
Make-up work will be given *only* in the case of a *documented* emergency. Note that make-up work may be in a different format than the original work, may require more intensive preparation, and may be graded with penalty points. If you miss an assignment and the reason is not considered excusable, you will receive a zero. It is therefore important to reach out to me—in advance if at all possible—and explain with proper documentation why you missed a given course requirement. Once a deadline has been established for make-up work, no further extensions or exceptions will be granted.

ALTERNATIVE MEANS OF SUBMITTING WORK IN CASE OF TECHNICAL ISSUES
I strongly suggest that you submit your work with plenty of time to spare in the event that you have a technical issue with the course website, network, and/or your computer. I also suggest you save all your work (answers to discussion points, quizzes, exams, and essays) in a separate Word document as a back-up. This way, you will have evidence that you completed the work and will not lose credit. If you are experiencing difficulties submitting your work through the course website, please contact the UTEP Help Desk. You can email me your back-up document as a last resort.

INCOMPLETE GRADE POLICY
Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

ACCOMMODATIONS POLICY
The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would

cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at cass@utep.edu, or apply for accommodations online via the CASS portal.

COVID-19 Accommodations

Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.

(*classes with on-campus meetings*) Students who are considered high risk according to CDC guidelines and/or those who live with individuals who are considered high risk may contact Center for Accommodations and Support Services (CASS) to discuss temporary accommodations for on-campus courses and activities.

SCHOLASTIC INTEGRITY
Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline.

CLASS RECORDINGS
The use of recordings will enable you to have access to class lectures, group discussions, and so on in the event you miss a synchronous or in-person class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP's acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. **You may not share recordings outside of this course.** Doing so may result in disciplinary action.

TEST PROCTORING SOFTWARE
Two course assessments (module exams) will make use of Respondus Lock Down Browser and Respondus Monitor inside of Blackboard to promote academic integrity. You are encouraged to learn more about how to use these programs prior to the first test.

Please review the following guidelines:

- The assessments will only be available at the times identified on the course calendar.
- You may take the test during the 24-hour window.
- A reliable Internet connection is essential to completing the exam. If you must go to a location to take the exam (such as the library), be sure to follow their health and safety requirements.

- You only have ONE attempt to take the test. You shall not take it multiple times. Only the first attempt is recorded.
  Note: if there is technical problem and you are kickout from the exam, then you should retake the exam again from the start. A log of the technical issue is recorded by BB.
- Respondus Lockdown Browser will require that all internet tabs are closed prior to the start of the test.
- Respondus Monitor requires a webcam and microphone.
- You will be required to show the webcam your student ID prior to the start of the test.
- Your face should be completely visible during the test. Blocking the camera will disable the test.
- No notes or textbook materials are permitted during the test. Respondus Monitor requires you to take a video of your surrounding area (desk, chair, walls, etc.)
- You should not have conversations with other people and/or leave and return to the area during the test.

PLAGIARISM DETECTING SOFTWARE
Some of your course work and assessments may submitted to SafeAssign, a plagiarism detecting software. SafeAssign is used review assignment submissions for originality and will help you learn how to properly attribute sources rather than paraphrase.

COPYRIGHT STATEMENT FOR COURSE MATERIALS
All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

COVID-19 PRECAUTIONS
You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu.

For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 *Health and Safety* and Section 1.2.2.5 *Disruptions* in the UTEP Handbook of Operating Procedures.

(***classes with on-campus meetings***) Please note that if COVID-19 conditions deteriorate in the City of El Paso, all course and lab activities may be transitioned to remote delivery.

Course Resources:
Where you can go for assistance
UTEP provides a variety of student services and support:
Technology Resources

- Help Desk: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

Academic Resources

- **UTEP Library: Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.**
- **University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.**
- **Math Tutoring Center (MaRCS): Ask a tutor for help and explore other available math resources.**
- **History Tutoring Center (HTC): Receive assistance with writing history papers, get help from a tutor and explore other history resources.**
- **RefWorks: A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.**

Individual Resources

- Military Student Success Center: Assists personnel in any branch of service to reach their educational goals.
- Center for Accommodations and Support Services: Assists students with ADA-related accommodations for coursework, housing, and internships.
- Counseling and Psychological Services: Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.

Important Dates.

Aug 24th	Fall classes begin
Aug 24-28th	Late Registration Period
Sept 7th	Labor Day Holiday- University Closed
Sept 9th	Fall Census Day
Oct 2nd	Graduation application deadline for degree conferral
OCT 22nd	Midterm Fall 2020 Grades Due
Oct 30th	Fall Drop/Withdrawal Deadline
Nov 13th	Deadline to submit candidates' names for commencement program
Nov 26-27th	Thanksgiving Holiday - University Closed
Dec 3rd	Fall - last day of classes
Dec 4th	Dead Day
Dec 7-11th	Fall Final Exams
Dec 12-13th	Fall Commencement
Dec 16th	Grades are Due