

# SE 5348 Modeling & Simulation

Course Syllabus (v05)

Fall 2022 Semester

**University of Texas at El Paso**  
**Master of Science in Systems Engineering**

## Course Description

The use of models, simulations, and Model Based Systems Engineering (MBSE) to support lifecycle activities is covered. The course reviews essential characteristics for models, simulations, and MBSE as well as the relation among them. Some models for real-time systems such as Petri Nets and State Transitions Diagrams are discussed in detail as well as tools that support modeling and simulation. The course covers in detail the diagrams included in the Systems Modeling Language (SysML) such as Use Case Diagram, Requirements Diagram, Sequence Diagram, Block Definition Diagram, Internal Block Diagram, and the Parametric Diagram. Students make use of tools to create models and execute simulations. Students also use a tool that supports both SysML models and the MBSE approach.

**By the end of this course, participants will be able to:**

- Apply the concepts behind models, simulation, and MBSE
- Apply different types of models and simulations to understand, define, verify and validate systems
- Discuss the support that MBSE brings to Systems Engineering
- Analyze complex dynamic behavior of systems like concurrency, synchronization, and orthogonality
- Compare and contrast the models of the System Modeling Language
- Examine and apply SysML Requirements Diagrams
- Create formal specifications of dynamic behavior using Petri Net notation, State Charts, and State transition diagrams
- Create formal specifications of dynamic behavior using State charts and event and mode tables
- Create a system specification making use of the models in the System Modeling Language (SysML)
- Apply tools to create models and simulations
- Define the structure of the system using IBD, IBD, Package, Constraint blocks and Parametric diagrams

## Course Content Summary (use hyperlink to jump to selected week)

<b>SE 5348 Modeling &amp; Simulation</b>	
<b>Refer to the calendar posted on Blackboard for specific assignment and test due dates</b>	
	<a href="#"><u>Week 1</u></a>

<b>SE 5348 Modeling &amp; Simulation</b>	
<b>Module 1</b> Modeling, Simulation, and Model-Based Systems Engineering	<a href="#"><u>Week 2</u></a>
<b>Module 2</b> Petri Nets	<a href="#"><u>Week 3</u></a>
	<a href="#"><u>Week 4</u></a>
<b>Module 3</b> State Transitions Diagrams - Tools	<a href="#"><u>Week 5</u></a>
	<a href="#"><u>Week 6</u></a>
<b>Module 4</b> SysML Intro & Requirements Diagrams	<a href="#"><u>Week 7</u></a>
	<a href="#"><u>Week 8</u></a>
<b>Module 5</b> SysML Structure Diagrams	<a href="#"><u>Week 9</u></a>
	<a href="#"><u>Week 10</u></a>
<b>Module 6</b> SysML Behavior Diagrams	<a href="#"><u>Week 11</u></a>
	<a href="#"><u>Week 12</u></a>
<b>Module 7</b> SysML Models & Execution with No Magic's Systems of Systems Architect 2021X	<a href="#"><u>Week 13</u></a>
	<a href="#"><u>Week 14</u></a>

## Instructor

Mr. John Artus

<b>Contact Information</b>	
<i>e-mail</i>	jgartus@utep.edu
<i>Online office hours</i>	M, W, Th, Fr after 6pm Mountain Time Please email me to coordinate an appointment on Zoom
<i>Video Class Meeting</i>	<b>Tuesdays at 6pm Mountain Time</b> at <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a> Some exceptions may exist due to holidays, etc. Always check the course calendar to see exactly when the video class sessions will be held.

## Required Reading Material

You will need the following reading materials throughout this course:

- Lenny Delligatti. (2014). *SysML Distilled, A Brief Guide to the Systems Modeling Language*. First edition. Addison-Wesley
  - This e-book is available in the UTEP Library for you to access at:
    - <https://lib.utep.edu/record=b4886686>
    - You will have to log in with your UTEP credentials to access this e-book
    - If you need help with setting up Global VPN on your device, you should contact the Help Desk at 915-747-4357
  - This e-book is also available for download for free at

- [https://app.ute.edu.ec/content/4915-114-4-1-6-19/SysML%20Distilled %20A%20Brief%20Guide%20-%20Lenny%20Delligatti.pdf](https://app.ute.edu.ec/content/4915-114-4-1-6-19/SysML%20Distilled%20A%20Brief%20Guide%20-%20Lenny%20Delligatti.pdf)
- International Council on Systems Engineering. (2015). *INCOSE systems engineering handbook: A guide for system life cycle processes and activities*. Fourth edition. Eds. Forsberg, K. Roedler, G., Walden, D. et. al. Hoboken, NJ: Wiley. (Please see the [UTEP Library Guide for MSSE 5341](#) for instructions on creating an INCOSE account to download the handbook)
- CMMI Product Team. (2010). *CMMI for development. Version 1.3*. CMMI Institute. CMMIInstitute.com. (Please see the [UTEP Library Guide for MSSE 5341](#) for instructions on obtaining this resource)
- BKCase. (2015). *Guide to the systems engineering body of knowledge (SEBoK)*. SEBoK Wiki. SeBokWiki.org. Version 2.2 (available from the [SEBoK website](#))

The instructor will provide directions to any additional reading resources required throughout the course.

## Required Computer Software

You will need the following computer software during this course:

- Standard Microsoft Office products are required for assignment submission. An internet browser is required to access online resources.
- Snoopy - See SE 5348 Home Page on Blackboard for download and installation instructions.
- MATLAB/Simulink Version R2021a - See SE 5348 Home Page on Blackboard for download and installation instructions.
- Magic System of Systems Modeler Architect 2021x by No Magic. Distributed by UTEP. See SE 5348 Home Page on Blackboard for download and installation instructions.

## Video Classroom

The instructor will deliver a video class once a week on the Tuesday of each week, except as noted in the class calendar posted on the Blackboard Home Page for this course. The video class will be delivered based on the instructor's availability. Situations may prevent the instructor from delivering a video class during a given week. The instructor will attempt to give as much advance notice as possible when a video class will not be delivered. Student attendance is totally optional. The video class is made available for the student's benefit. It is suggested that you take advantage of the opportunity to bring questions to the class and have them answered by the instructor. For example, this is a good opportunity to ask questions about the reading material, the assignments, and the tests. Occasionally, the video class may be scheduled on a day of the week other than Tuesday. Always check the course schedule posted on Blackboard to determine the current dates for scheduled course activities. The video classes will be recorded and posted on Blackboard for students to review as needed. Technical difficulties may impact the ability to record or upload video recordings of these sessions, so it is recommended not to become dependent on availability on the recordings, but instead make effort to attend the sessions live.

Students who attend the weekly video classroom sessions tend to learn more and perform better in the assignments and tests. Please make every effort to attend. During these sessions, the instructor will be available to answer any questions related to course material that you might have. Participation in these

sessions is for your benefit. Your participation will not be graded, so you can be open and frank with your questions about course material.

### Are you afraid to ask a dumb question?

Do not be afraid to ask a dumb question since, in learning, there is no such thing as a dumb question. The instructor is here to provide you with the opportunity to learn the course material. I encourage you to take advantage of that opportunity by asking ANY question about course subjects you need help understanding. The video class sessions are an "open learning environment." The instructor will NOT call anybody out for asking a "dumb" question. On the contrary, the instructor is actively interested in helping any student clarify any kind of misunderstanding of the course material. Simply ask any question. You will be PLEASED to see how cooperative the instructor is in getting you the information you need. Any information shared by the instructor during a video classroom session will be considered course material and is subject to being included in module tests.

## Student Resources

Student resources include the course textbook, internet resources related to lectures for each Module, instructions for collaborative work, and links to the Library Guide, UTEP Bookstore, and UTEP technology support. Some of the work that must be performed by students is done in a group collaborative setting. The collaborative section in Blackboard identifies the groups and group members for this course. The student resources section is located in the Blackboard Home Page for this course.

## Summary of Course Structure

Course content is provided in seven modules that are posted onto Blackboard on the Saturday before the beginning of each module (every two weeks). Each module will have a menu to guide participants through the content and identify discussion board postings and/or assignments/tests to be submitted to Blackboard. The first module provides course overview and objectives, facilitates attendee's introductions and team building, and discusses SE main concepts addressed in the course. The section titled "Detailed Course Description" lists the detailed activities for each module that you will be responsible for. The seven modules for this course are as follows:

Module Number	Module Name
1	Modeling, Simulation, and Model-based Systems Engineering
2	Petri Nets
3	State Transitions Diagrams - Tools
4	SysML Intro & Requirement Diagrams
5	SysML Structure Diagrams
6	SysML Behavior Diagrams
7	SysML Models & Execution in No Magic's Systems of Systems Architect 2021X

## Student Deliverables

Deliverables are assignments and tests that the student is responsible for delivering on time and with the required quality to earn points towards the desired grade. Full instructions on the requirements and due dates for assignments and for test taking will be included in Blackboard postings. The goal in

delivering assignments is for the student to clearly demonstrate command of the knowledge gained/derived from class readings and assignments. The student should expect to convince the instructor, through the submitted assignments/tests, that the student has command of the knowledge gained during the course. Students are responsible for delivering the following artifacts as part of this course.

### **Discussion Assignment**

A Discussion Assignment is prepared by the student alone and submitted on the Thursday of each week. Occasionally, the Discussion Assignment may be due on a day of the week other than Thursday. Always check the course schedule posted on Blackboard to determine the current dates for assignment due dates. A set of instructions will be provided by the instructor for each assignment as part of the module. The instructions will indicate the dedicated sources of knowledge the student should pull from to develop the assignment response. The student is free to access any additional resources the student feels will support an argument being developed. In this case, the student is required to cite the source of any points made in the argument. The purpose of the discussion assignment is to open up a topic for class discussion. The Discussion Assignment submission will be shared with other students in the class. The idea is that other students can argue in support or against the argument made in the submitted assignment.

### **Discussion Reply Assignment**

A Discussion Reply Assignment is prepared by the student alone and submitted on (normally) the Friday of each week. Occasionally, the Discussion Reply Assignment may be due on a day of the week other than Friday. Always check the course schedule posted on Blackboard to determine the current dates for assignment due dates. The student will choose a minimum of two discussion assignment submittals from other students to respond to. When responding to someone else's submissions, do not simply say "I agree with your point...." Agreeing is easy. If you wish to agree with a point, provide additional evidence to support why the point deserves further consideration. Disagreeing, and saying why you disagree is more difficult, but may allow the student to better demonstrate command of knowledge for the instructor to consider. Do not feel inhibited from disagreeing with a fellow student. Look for a student submission to comment on, pick submissions that you either agree or disagree with and then say why you agree or disagree, with evidence. Always respond to your peers with respect.

### **Individual Assignment**

An Individual Assignment is prepared by the student alone and submitted (normally) on the Friday of each week. Occasionally, the Individual Assignment may be due on a day of the week other than Friday. Always check the course schedule posted on Blackboard to determine the current dates for assignment due dates. A set of instructions will be provided by the instructor for each assignment as part of the module. The instructions will indicate the dedicated sources of knowledge the student should pull from to develop the assignment response. The student is free to access any additional resources the student feels will support an argument being developed. In all cases, the student is required to cite the source of any points made in the argument that are derived from sources other than the student's own knowledge resource (the student's own brain). The individual assignment submission will not be shared with other students in the class.

### Group Assignments

Students will work in groups. The instructor will assign students to groups. Refer to the Blackboard Home Page for this course to locate the particular group that you have been assigned to.

The instructor will provide instructions on what is expected of the group deliverable for each Group Assignment. Some of the weekly group assignments will build up from previous week group assignments. The group will review the assignment for the week and decide on an equitable distribution of tasks to each group member.

The group will segregate the individual tasks to group members such that when the individual contributions are merged into the deliverable to be submitted. In the submission, it will be clearly indicated which member of the group prepared which section(s) of the assignment.

Students should develop soft skills to properly and effectively work as a group member. Group members are expected to be respectful of each other, have a positive attitude, deliver quality work on time, participate in peer reviews, and support other group members. All submitted group assignments shall clearly indicate who did what work. *A student can only receive credit for the group project work, if he/she is an equally contributing member of a group.*

If a group member is not working or is performing poorly or irresponsibly, the group must let the member know about the problem (show a yellow card), offer him/her help, and inform the instructor of the situation. If a group member continues performing poorly or irresponsibly, the group may request the instructor to remove the student from the group (show a red card). The group leader shall send an e-mail to the instructor and all group members including the affected group member indicating that a yellow or red card has been called with a brief explanation of the circumstances. Depending on the severity of the situation, the Department and/or University Title IX Coordinators may be called in to adjudicate the situation (by US Federal Law).

### Group Leader

Each group will designate a Group Leader. The role of the group leader is that of organizer and promoter of good group practices. The role of the group leader is not to take on additional assignment work load. Not all people have leadership skills. Each group should discuss the group leader role and select someone who is capable of being a good leader for the group. For the selected group leader, this is an opportunity for you to practice your leadership skills. Your job is to take the steps necessary to ensure the group is well coordinated, not to bail the group out by taking on other people's assignments for them.

### Late Delivery

**There is no such thing as late assignment delivery in this course.** If an assignment is not submitted by the due date/time, the assignment will receive a zero score. Blackboard automatically indicates which assignments are late. Take care to observe the due date and due time. If an assignment is one second late, Blackboard will flag the assignment as late. Zero points will be rewarded for late assignments. Be sure to start your work sufficiently in advance of the due date/time in order to submit assignments on time.

It is the student's responsibility to notify the instructor by email with as much advance notice as possible when it is known that an assignment due date/time will be missed for legitimate reason. If such advance notice is not possible, still notify the instructor by email so that alternative assignment delivery arrangements can be made. Students WILL NOT be penalized for events beyond their control which prevent them from turning assignments in on time. However, in these cases, the student must notify the instructor for alternate submission arrangements. Notification of events that occurred more than 7 days in the past (one week) will not be considered for relief.

An exception to the late delivery policy is made during Module 1, while students become familiar with the course assignment submission policy and pace. However, ALL MODULE 1 ASSIGNMENTS must be turned in by 11pm Mountain Time on the last day of Module 1. Starting with Module 2, the late delivery policy will be in full force.

### **Minimum Word Count**

Many assignments come with a minimum word count requirement in the instructions. The purpose of the word count is to encourage the student to develop a fully thought-out response. Do not pack your discussions and arguments with fluff, filler, or nonsense just to meet the word count limit. Provide good, well-thought-out discussions, with good explanation of your argument points on technical merits. The instructor is a seasoned Systems Engineering professional. The instructor will not be swayed by nonsense arguments. The instructor will grade assignments based on the quality of the arguments provided by the student.

### **Assignment Grading Rubrics**

Rubrics are an objective way of assessing work. They provide clear criteria that can be shared with students so that they know how they will be graded. The objective criteria used for each assignment will be indicated as part of assignments.

Many assignments that test the student's cognitive understanding are not simply judged on objective criteria that can be codified in rubrics. In these cases, the grade will be assessed by the instructor primarily on a subjective basis, using 40 years of engineering experience to determine whether the student understands the critical points being raised in the assignments and the student's ability to address these issues with critical thinking.

### **Tests**

Tests are administered (normally) on Sundays via Blackboard. Occasionally, a test may be scheduled on a day of the week other than Sunday. Always check the course schedule posted on Blackboard to determine the current dates that tests are administered. Tests will be available to take at 1pm on test day. Tests will be due by 11pm on test day. Be sure to start the test far enough in advance of the test due time of 11pm in order to complete the test by 11pm. If a test falls on a weekday (working day) due to schedule, the instructor will open the test early to give working students a greater window of opportunity to schedule their test taking time.

If you miss taking the test by the due date/time, you will receive zero points with no provision to take the test at a different time. Tests will be open book. However, the questions will require selection of an answer in a short amount of time, so be sure you understand the course material. If you have any

doubts about understanding, ask questions of your fellow students in the discussion board and at the video classroom sessions. Tests will focus on course material covered in the current module up to that point in time, possibly including material from prior modules. Tests are to be taken individually, not collaboratively.

Taking a test requires uninterrupted online connectivity. If you are in an environment with questionable connectivity, you may have issues that prevent you from completing the test. It is advised that if you have such issues, resolve them (preferably by getting to a location that does not have connectivity issues) prior to starting the test. If you are located near campus, the Library has computing assets available to you to login and take tests with near 100% certain connectivity.

### **Syllabus Test**

A test will be issued at the end of the first week of Module 1 to test the student's understanding of the rules of student conduct for this course. The test will be available to take starting on the first day of class. The test is due on Sunday at the end of the first week of the Module 1. The test is open book. The test must be taken by the due date/time or it receives a zero grade. There is no makeup opportunity for this test. The test covers the content of the syllabus related to rules of student conduct for this course. The test does not cover the details of assignments given each week. The test consists of 15 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.

### **Module Tests**

A test will be issued once for each module. Tests are given on the second Sunday of each module. Occasionally, the Module Test may be due on a day of the week other than Sunday. Always check the course schedule posted on Blackboard to determine the current dates for Module Test dates. The test will be available to take at 1 pm Mountain Time on the Sunday of the second week of each module. The test is due on the same Sunday at 11 pm Mountain Time. Always check the course schedule posted on Blackboard to determine the test due dates and times.

Tests are open book. The test must be taken by the due date/time or it receives a zero grade. There is no makeup opportunity for tests. Tests cover reading assignments, discussions, individual assignments, group assignments, and presentations in the module. Tests consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed. Tests are challenging. The better you prepare for the test, the better will be the outcome.

Note: Test grades account for 33% of the course grade. This is a significant percentage of the course grade. Students should note that test dates are given well in advance, and students should be prepared to make themselves available to be in place and ready to take the test. For the Fall 2022 SE 5348 Modeling & Simulation course, the test taking window will open at 1pm (MT) two days before the test is due.

Note: Tests are designed to be CHALLENGING! Tests are meant to separate those that truly know the material from those that do not know the material. Do not expect to get perfect scores on every test. Expect to do the best you can on each test, through preparation, diligence, and persistence.

### **Midterm and Final Exams**



There is no midterm exam or final exam in this course.

### Extra Credit Policy

There is no policy in this course for issuing extra credit to individual students for the purpose of bumping up from one final course grade (such as B) to another (such as A). The best assurance for receiving the grade you desire is to perform the work throughout the semester to the level of quality needed to achieve a certain final grade in the course. The instructor is a seasoned Systems Engineering professional, and the grades issued throughout the semester that result in a final grade letter issued to a student can be counted on confidently to reflect the quality of work delivered by any individual student.

However, there is an **extra credit** opportunity available to all students throughout the semester. This opportunity was described earlier in this document and is repeated here:

- *If you need help understanding a concept, reach out to your fellow students first via Discussion Board*
- *The first student that provides the definitive solution to an issue raised will earn 10 points each for the student needing the help and the student providing the first completely helpful solution*
- *The student requesting help must notify the instructor by email, indicating which other student provided the help needed*
- *Any student can earn a maximum 40 extra credit points using this mechanism*
- *Only serious problems will be considered by the instructor for earning points this way*
- *Seriousness of the issue is up to the instructor to determine*

*If the student seeking help is unable to find the needed help via this mechanism, then please contact the instructor via email for the help needed*

## Student Integrity and Discipline of Inappropriate Behavior

### Harassment

**In accordance with Texas Education Code § 51 (“SB 212”)**, and as a UTEP employee, the instructor is bound by law to report incidences reasonably believed to constitute sexual harassment, sexual assault, dating violence, or stalking, and which is alleged to have been committed by or against a person who was a UTEP student or employee at the time of the incident. I will interpret any incident of harassment of ANY FORM by one student on any other in this course as an incident to be reported to the UTEP Title IX Coordinator. If you feel you have been harassed by another student in this course, please inform me in confidence so that the situation may be reported to the appropriate authorities.

### Academic Dishonesty

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, collusion, and fabrication.

- Cheating can 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 another person's words or ideas as his or her own.
- Collusion involves unauthorized collaboration with another person or group to commit any academically dishonest act.
- Fabrication occurs when false information is included on a works-cited page.

Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Violations will be taken seriously and will be referred to the Office of Student Conduct and Conflict Resolution for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions. You can find more information in the *UTEP Handbook of Operating Procedures*, under the heading "4.14: Alleged Student Scholastic Dishonesty," and in the Regents' Rules and Regulations.

### Plagiarism

Do not plagiarize. Credit all sources. It's perfectly OK to quote a source, as long as it is credited. But, if your whole argument is based on an extensive quote, you won't receive much credit for originality. Plagiarism will simply NOT be tolerated.

The University policy on Plagiarism is:

Plagiarism is the act or instance of using, or closely imitating the language and/or thoughts of another author; including words, ideas, illustrations, structure, computer code, and other expressions or media; and presenting that material without authorization and/or the representation of that author's work as one's own academic work, being offered for credit or in conjunction with a program, course, or degree requirements.

The instructor is bound by the University's Handbook of Operating Procedures (HOP) to report any such incident of plagiarism to the Office of Student Conduct and Conflict Resolution (OSCCR). The instructor has done this in past situations, and will do so again as the need warrants.

With regard to citing the source of information obtained from sources, formal citation, as in using MLA, ALA, Chicago, etc formats is recommended, but is not required. Students are required to provide sufficient citation information that allows the instructor to track down and review the source.

For further information on formal citation, here is a good source:

<https://www.easybib.com/guides/citation-guides/how-do-i-cite-a/>

### Cheating

With regard to cheating, there are two areas of concern in this course: Assignments and Tests.

With regard to assignments, you are allowed and encouraged to "collaborate" with fellow students - up to a point. Collaboration on understanding of the purpose of an assignment, the requirements, as far as what you are being requested to provide in your assignment submissions, and possible general approaches to solutions is acceptable behavior in this course. In fact, you are encouraged to use the discussion forum to discuss these kinds of topics in collaboration with your fellow classmates. However, this is the point at which collaboration ends. At this point you are obligated to pursue the identification

and definition of a specific solution to an assignment problem on your own. Working with other students beyond this point, except obviously for group assignments, moves into "collusion." You do not have the authority to collude with other students. This qualifies as cheating.

UTEP defines collusion as:

Unauthorized collaboration with another person in preparing academic assignments offered for credit; in other words, seeking aid from another for an assignment without having authority to do so.

And

Collaboration with another person to commit a violation of the rules on scholastic dishonesty.

Collaboration on tests is permitted in this course only to include scholarly study in preparation for taking a test. Once the scholarly preparation is complete, no further collaboration may take place. Any form of collusion by passing answers to tests from one person to another, or by obtaining and using answers obtained from outside sources, or by employing any other types of dishonesty, is strictly prohibited.

In all cases of Plagiarism and Cheating and any other form of Academic Dishonesty, the instructor is required to, and will be reporting such cases to the OSCCR. In cases of collusion on tests, the instructor will recommend to the OSCCR the harshest penalty be applied. In doing so, the instructor is effectively defending the case for those students that worked hard to prepare and submit work that reflects their dedicated efforts against those that would cheat to get the same grade for little to no effort put forth.

### Summary

As a student pursuing a Master's degree in Engineering, you should understand the gravity of these issues and commit to yourselves, and for your own integrity, to comply with these rules of conduct.

## Instructor Integrity

### Discrimination and Bias

As a UTEP Instructor, I, John G. Artus, do not discriminate any student from any other student on the basis of sex, race, religious affiliation, gender, age or sexual orientation, or any other personal characteristic or lifestyle preference. As a UTEP Instructor, I, John G. Artus, only discriminate one student from any other student on the basis of performance on assignments and tests.

As a UTEP student, if you seek to be "discriminated" from your peers on the basis of performance, then the better the quality of your assignment submissions and the better you prepare for tests, the better grade you will receive to discriminate you from those students who do not prepare as well as you, because there will be no other basis for discrimination between one student or another in this course.

## Student Participation

Students bring a wealth of knowledge and experience to this course from their respective fields; however, students' knowledge and technological expertise vary. The course is designed to be an enjoyable learning experience for everyone, with support for every participant. This course will immerse students into a

community of practice so that students can develop skills and knowledge that facilitate their professional development.

Students are expected to complete all weekly content and to participate actively and respectfully on discussion boards, chats, and blogs, as well as synchronous or asynchronous collaboration tools where the main course concepts are discussed and class projects are developed. Furthermore, students should finish tests and deliver complete quality assignments and projects on time.

Regarding participation in the course, the following policies will be enforced:

- This is a graduate-level course; students are expected to manage their own participation level; the instructor will not "supervise" student participation
  - Students should carefully monitor their own participation level
  - It only takes a few missed assignments before students can slip into "F" territory
- The instructor will not automatically advise students when they are falling into "B" or "F" territory
  - This is strictly for students to monitor for themselves
- **Students can request an evaluation of their grade status by the instructor at any time**

## Grading Policy

### Point Distribution

Artifact	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6	Module 7	Total
Readings and Lecture	0	0	0	0	0	0	0	0
Discussion	50	50	50	50	50	50	50	350
Individual Assignment	40	40	40	40	40	40	40	280
Group Assignment	40	40	40	40	40	40	40	280
Test	90	60	60	60	60	60	60	450
<b>Total</b>	<b>220</b>	<b>190</b>	<b>190</b>	<b>190</b>	<b>190</b>	<b>190</b>	<b>190</b>	
<b>Grand Total</b>								<b>1360</b>

### Grading Criteria

The instructor grades assignments according to the following criteria:

- Are your responses to topics to-the-point, clear, crisp, and concise?
- Do you use the correct terminology?
- Do you provide relevant supporting data to back up the main points you make?

The instructor only has so much time to read and digest your responses. If it is confusing to read and break down, or if you ramble, using techno-babble jargon that makes no technical sense, then the instructor will get lost and you will not receive an A-level grade.

Additional grading criteria for logistical concerns are included in the templates provided for submitting each assignment.

The maximum points achievable is 1360. The following scale is used for assigning letter grades.

Grade	Percentage	Score
<b>A</b>	[90 % and above]	1224 -> 1360
<b>B</b>	[80 % - 89 %]	1088 -> 1223
<b>F</b>	[0 % - 79%]	0 -> 1087

Note that there will not be “rounding up” automatically. The instructor reserves the right to lower the grade scale if it is deemed appropriate.

There is no policy in this course for granting additional points simply to "bump" a student to a higher letter grade. If you wish to achieve a certain letter grade at the end of the course, it is incumbent upon **YOU** to ensure that you submit work that qualifies you for receiving the desired letter grade.

### Extra Credit

For course-related inquiries (help understanding lectures, assignments, tests), use the course Discussion Board by creating a new thread

- If you need help understanding a concept, reach out to your fellow students first via the Discussion Board
- The first student that provides the definitive solution to an issue raised will earn 10 points **extra credit** each for the student needing the help and the student providing the first completely helpful solution
- The student requesting help must notify the instructor by email, indicating which other student provided the help needed
- Any student can earn a maximum 40 **extra credit** points using this mechanism
- Only serious problems will be considered by the instructor for earning points this way
- Seriousness of the issue is up to the instructor to determine
- If the student seeking help is unable to find the needed help via this mechanism, then please contact the instructor via email for the help needed

## Class Interaction and Communication

### Being Successful Online

This section has some tips about how to be successful online. Online learning is not a spectator sport. It is everyone's responsibility to participate as fully 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 place 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 something you can share. Use the discussion board for this purpose.
- Both the student posting a question, and the student responding with a satisfactory answer can earn **extra credit** points by using this problem-solving mechanism.
- Be appropriate: The online classroom is not the place for insulting or insensitive comments, attacks, or venting. Inappropriate behavior can be subject to disciplinary action, as well.
- Be diplomatic: When sending messages on emotionally charged topics, try writing 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 respectfully of the person at the other end.
- Stay focused: Stay on topic to increase the efficiency of your learning.

## Detailed Course Description

Refer to the course calendar posted on Blackboard for specific assignment and test due dates

### Module 1, Week 1: Modeling, Simulation, and Model-based Systems Engineering

Activity	Description
Module 1, Week 1 Readings and Lesson Presentations	<ul style="list-style-type: none"> <li>▪ For CMMI for Development, Version 1.3 read: DAR SP 1.4, OPP SP 1.5, PI SP 1.1; VAL SP 1.1, VER SG 1, TS Introduction section</li> <li>• For INCOSE Systems Engineering Handbook V4 read: Section 4.6 “Systems Analysis Process”, Section 9.1 “Modeling and simulation”, Section 9.2 “Model-Base System Engineering”</li> <li>▪ Kumar, Jagat. Modeling and Simulation - Unit one: “System Models and System Simulation” – <a href="http://www.ddegjust.ac.in/studymaterial/mca-5/mca-504.pdf">http://www.ddegjust.ac.in/studymaterial/mca-5/mca-504.pdf</a></li> <li>▪ <a href="#">SE 5348 Modeling &amp; Simulation.ppt</a></li> </ul>
Module 1, Week 1 Video Classroom	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
Module 1, Week 1 Discussion Assignment 1	<p style="text-align: center;"><i>Student Introductions</i></p> <p>Provide some background on yourself for others to get to know you better. Post your initial response to this discussion question. Also respond to at least two of your peers’ submissions.</p>
Module 1, Week 1 Individual Assignment 1	<p style="text-align: center;"><i>Modeling &amp; Simulation Characteristics and Tools</i></p> <p>Evaluate the essential characteristics that comprise a “model” and prioritize them according to what they feel is their level of significance. List four (4) characteristics that comprise a model and a short summary to what those characteristics entail in that model. Prioritize the listing of all characteristics into the order of importance for models.</p> <p>Research tools that perform both modeling and simulation, select one, then provide detailed information on the purpose, content, and application of that tools model and simulations.</p>
Module 1, Week 1 Group Assignment 1	<p style="text-align: center;"><i>Group Communications Infrastructure</i></p> <p>Describe the means by which the group will conduct business, including contact information, meeting times, etc. Be sure to select a group leader. Group leader selection can rotate among team, if desired. Instructor must know who is the leader of each group. Group leaders DO NOT do other members’ work.</p>

Activity	Description
<b>Module 1, Week 2 Assessment: Test</b>	<p><i>Syllabus Test</i></p> <ul style="list-style-type: none"> <li>This test covers the content of the syllabus relating to student conduct in the course. The test does not cover details of particular assignments due for a given module.</li> <li>The test consists of 15 multiple choice question with 5 possible answers at 2 points each for a maximum score of 30 points. The test is open book and will last 60 minutes. Only one test attempt is allowed.</li> </ul>

### Module 1, Week 2: Modeling, Simulation, and Model-based Systems Engineering

Activity	Description
<b>Module 1, Week 2 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>For INCOSE Systems Engineering Handbook V4 read: Section 9.2 “Model-Base System Engineering”, Section 9.3 “Functions- Based Systems Engineering Method”, Section 9.4 “Object-Oriented Systems Engineering Method”</li> <li>Graignic, Pascat., et al, <i>Complex System Simulation: Proposition of a MBSE Framework for Design-Analysis Integration</i>, Procedia Computer Science 16 (2013) 59 – 68, Elsevier. Available at <a href="https://www.sciencedirect.com/science/article/pii/S1877050913000082/pdf?md5=002b904148e79305f539c4fe9ce4fb72&amp;pid=1-s2.0-S1877050913000082-main.pdf&amp;_valck=1">https://www.sciencedirect.com/science/article/pii/S1877050913000082/pdf?md5=002b904148e79305f539c4fe9ce4fb72&amp;pid=1-s2.0-S1877050913000082-main.pdf&amp;_valck=1</a> and through UTEP library</li> <li><a href="#">Model-based Systems Engineering.ppt</a></li> </ul>
<b>Module 1, Week 2 Video Classroom</b>	<ul style="list-style-type: none"> <li>Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 1, Week 2 Discussion Assignment 2</b>	<p><i>MBSE Characteristics</i></p> <p>Analyze &amp; prioritize the various MBSE characteristics covered in this module. Also, research &amp; evaluate other MBSE characteristics based upon the provided reading.</p> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers’ submissions.</p>
<b>Module 1, Week 2 Individual Assignment 2</b>	<p><i>Applying MBSE</i></p> <p>Analyze the use of MBSE by evaluating the application of MBSE characteristics to a project in the provided reading. Provide references to where the article’s author mentions the MBSE characteristics covered in this module. Also, evaluate the reading for additional MBSE characteristics not mentioned in the module.</p>
<b>Module 1, Week 2 Group Assignment 2</b>	<p><i>Selecting MBSE Tools</i></p> <p>Investigate commercial tools for MBSE practices with SysML. Use of the Decision Analysis &amp; Resolution process to evaluate six potential tools and aid in the selection of a single tool.</p>
<b>Module 1 Test</b>	<p><i>Module 1 Test</i></p> <ul style="list-style-type: none"> <li>This test covers reading assignments, discussions, individual assignments, group assignments, and presentations in the module.</li> <li>The test consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.</li> </ul>

### Module 2, Week 3: Petri Nets

Activity	Description
<b>Module 2, Week 3 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>▪ <i>Petri Nets for Dynamic Even-Driven System Modeling</i> by Jiacun Wang</li> <li>▪ <a href="#">SE 5348 M2 Petri Nets v2.pptx</a></li> </ul>
<b>Module 2, Week 3 Video Classroom</b>	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 2, Week 3 Discussion Assignment 1</b>	<p style="text-align: center;"><i>Petri Nets and Activity Diagrams</i></p> <p>This discussion has two parts:</p> <ol style="list-style-type: none"> <li>1. Activity diagrams were created after Petri Nets and incorporated some of the elements from Petri Nets. Examples of Petri net elements are: places and transitions.</li> <li>2. Evaluate which Petri Net elements are included in Activity Diagrams, and then specify whether the semantics of the elements have been preserved. Explain your reasoning.</li> </ol> <p>For this exercise, use the basic description of Activity Diagrams in the summary description of Activity Diagrams before you provide your inputs. The link to this resource is shown in the Reading Resources section above.</p> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<b>Module 2, Week 3 Individual Assignment 1</b>	<p style="text-align: center;"><i>Petri Net Execution in a Modeling Tool</i></p> <p>This discussion has two parts:</p> <p>Part 1</p> <ol style="list-style-type: none"> <li>1. You are given a Petri Net that was developed to model a Traffic Light Control System that exhibits mutually exclusive synchronization.</li> <li>2. Using the provided Petri Net, model the net in SNOOPY, and fire the net to take the system through a complete cycle.</li> <li>3. Indicate the marking of the net for M2 through M5.</li> </ol> <p>Part 2</p> <ol style="list-style-type: none"> <li>1. Consider the formal notation from Slide 9 of SE 5348 M2 Petri Nets.pptx. Write the formal notation for the Traffic Lighting Control System using Formal Notation - 1</li> </ol>
<b>Module 2, Week 3 Group Assignment 1</b>	<p style="text-align: center;"><i>Petri Nets – Modeling a Warehouse</i></p> <p>This discussion has two parts:</p> <p>Part 1: Use the verbal specification of a Warehouse Operation to model a new Petri Net for the warehouse scenario and ensure that it functions correctly in an extension to the scenario.</p> <ol style="list-style-type: none"> <li>1. Create a new Petri Net model in SNOOPY that corrects the error in the original net specification, and is considered to be a safe net.</li> <li>2. Simulate the network and present screenshots of each firing of the net until the scenario completes.</li> </ol> <p>Part 2: Write the formal notation of the updated Petri Net using Formal Notation - 1; i.e., P, T, I, O, M.</p>

### Module 2, Week 4: Petri Nets



Activity	Description
<b>Module 2, Week 4 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>▪ <i>CMMI for Development</i>, V1.3 QPM</li> <li>▪ SE 5348 M2 Petri Nets v2.pptx</li> <li>▪ SE 5348 M2 Advanced Petri Nets.pptx</li> </ul> <p>Supplemental information that will assist in understanding Part 2 of assignment M2W04_D2 is available in:</p> <ul style="list-style-type: none"> <li>• JGArtus Lecture 71 Petri Net Patterns v01 <ul style="list-style-type: none"> <li>○ <a href="https://jgartus.net/wp-content/uploads/2022/08/Lecture-71-Petri-Net-Patterns-v01.pdf">https://jgartus.net/wp-content/uploads/2022/08/Lecture-71-Petri-Net-Patterns-v01.pdf</a></li> </ul> </li> </ul>
<b>Module 2, Week 4 Video Classroom</b>	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 2, Week 4 Discussion Assignment 2</b>	<p style="text-align: center;"><i>Advanced Petri Nets &amp; Property analysis</i></p> <p>This discussion has two parts:</p> <p>Part 1</p> <ol style="list-style-type: none"> <li>1. Which of the advanced Petri Net features discussed has a broader application within the SE domain?</li> <li>2. Which error-discovery property discussed has a broader application within the SE domain?</li> </ol> <p>Part 2</p> <p>A Petri Net for a Computer Memory Protocol Management scheme is provided. Analyze the system as represented by the Petri Net and answer the following questions, based on your analysis. Simulate the system in SNOOPY in order to gain an appreciation of the intent of the designers of the net.</p> <ol style="list-style-type: none"> <li>1. Explain how sharing of the system memory is limited to at most three readers simultaneously</li> <li>2. Explain how no readers are allowed access to memory while a write process is occurring</li> <li>3. Explain how at most only one write process may occur at any one time</li> <li>4. Explain how would you change the system to limit memory sharing by readers to only two processes</li> </ol> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<b>Module 2, Week 4 Individual Assignment 2</b>	<p style="text-align: center;"><i>Petri Net Design &amp; Modeling</i></p> <p>This discussion has two parts:</p>

Activity	Description
	<p>Part 1 - Candy Vending Machine</p> <ol style="list-style-type: none"> <li>1. Create a Petri Net in SNOOPY based on the Candy Vending Machine rules of operation provided</li> <li>2. After you have constructed the Petri net, provide the appropriate initial marking M0</li> <li>3. Provide a screenshot of your completed Petri Net</li> </ol> <p>Part 2 - Send/Receive Protocol</p> <ol style="list-style-type: none"> <li>1. Create a Petri Net in SNOOPY based on the Send/Receive Communication Protocol Management rules of operation provided</li> <li>2. After you have constructed the Petri net, provide the appropriate initial marking M0</li> <li>3. Provide a screenshot of your completed Petri Net</li> </ol>
<p><b>Module 2, Week 4 Group Assignment 2</b></p>	<p style="text-align: center;"><i>Petri Net Design &amp; Modeling</i></p> <p>This discussion has three parts:</p> <p>Part 1 - Writers and Readers</p> <ol style="list-style-type: none"> <li>1. Create a Petri Net graph based on the Petri Net Formal Notation – 2 that is provided</li> <li>2. Take a screen shot of the original markup of each model and paste it into the template</li> <li>3. Provide your screenshot image in your response</li> </ol> <p>Part 2 - Single-Lane Gas Station</p> <p>The system depicted below is a four-direction (North, East, South and West) traffic intersection. Each direction has two lanes, i.e. an entrance and an exit.</p> <p>There are some constraints on the system behavior that must be factored into the design, as follows:</p> <ol style="list-style-type: none"> <li>1. Create a Petri Net in SNOOPY based on the Single-Lane Gas Station rules of operation provided</li> <li>2. After you have constructed the Petri net, provide the appropriate initial marking as indicated in the rules of operation</li> <li>3. Take a screen shot of the original markup of each model and paste it into the template</li> <li>4. Provide your screenshot image in your response</li> </ol> <p>Part 3 - Dual-Lane Gas Station</p> <p>Revise the Petri Net you developed for Part 2 of this assignment and perform the same steps to submit your assignment</p> <ol style="list-style-type: none"> <li>1. Create a Petri Net in SNOOPY of a Dual-Lane Gas Station as revised from the Single-Lane Gas Station model developed in Part 2 of this assignment</li> <li>2. After you have constructed the Petri net, provide the appropriate initial marking as indicated in the rules of operation</li> <li>3. Take a screen shot of the original markup of each model and paste it into the template</li> <li>4. Provide your screenshot image in your response</li> </ol>
<p><b>Module 2 Test</b></p>	<p style="text-align: center;"><i>Module 2 Test</i></p> <ul style="list-style-type: none"> <li>• This test covers reading assignments, discussions, individual assignments, group assignments, and presentations in the module.</li> </ul>

Activity	Description
	<ul style="list-style-type: none"> <li>The test consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.</li> </ul>

### Module 3, Week 5: State Transitions Diagrams - Tools

Activity	Description
Module 3, Week 5 Readings and Lesson Presentations	<p><b>Reading Resources – Class Lecture Material</b> (Source of Test Questions)</p> <ol style="list-style-type: none"> <li>SE 5348 M3 Stateflow.pptx</li> </ol> <p><b>Optional Viewing Resources – How to use MATLAB/Simulink</b></p> <ol style="list-style-type: none"> <li>MATLAB. "Getting Started with Simulink Part 1" (VERY Basic) You Tube video at <ul style="list-style-type: none"> <li><a href="https://www.youtube.com/watch?v=iOmggewj5XI">https://www.youtube.com/watch?v=iOmggewj5XI</a></li> </ul> </li> </ol> <p><b>Reading Resources – Regarding the Simulink models used in these assignments</b></p> <ol style="list-style-type: none"> <li>20220902 How to Access Simulink Example Models.pdf</li> <li>JGArtus Lecture 62 Description of Traffic Light Model <ul style="list-style-type: none"> <li><a href="https://jgartus.net/wp-content/uploads/2022/09/Lecture-62-Description-of-Traffic-Light-Model-v01.pdf">https://jgartus.net/wp-content/uploads/2022/09/Lecture-62-Description-of-Traffic-Light-Model-v01.pdf</a></li> </ul> </li> <li>JGArtus Lecture 63 Description of Security System Model <ul style="list-style-type: none"> <li><a href="https://jgartus.net/wp-content/uploads/2022/09/Lecture-63-Description-of-Security-System-Model.pdf">https://jgartus.net/wp-content/uploads/2022/09/Lecture-63-Description-of-Security-System-Model.pdf</a></li> </ul> </li> </ol>
Module 3, Week 5 Video Classroom	<ul style="list-style-type: none"> <li>Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
Module 3, Week 5 Discussion Assignment 1	<p><i>Simulink Tutorial Assessment</i></p> <ol style="list-style-type: none"> <li>Using MATLAB, access the on-line tutorial lessons known as the Simulink Onramp.</li> <li>Perform lessons 1 through 6 in the tutorial set.</li> <li>Provide insight into the utility of this learning resource in getting you to the point that you feel confident about using Simulink.</li> </ol> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
Module 3, Week 5 Individual Assignment 1	<p><i>Simulink Modeling: Security System Scenario</i></p> <ol style="list-style-type: none"> <li>Modify the Security System model provided by The MathWorks to satisfy a new set of requirements that provide the capability of the system to issue an alarm if the system does not receive a valid password within a designated amount of time.</li> <li>In Part 1 of the assignment, modify the Simulink model to provide facilities for the simulation operator to provide the needed inputs from Simulink to Stateflow to represent the availability of a valid password. The modifications to be made to the model will involve only the Simulink portion of the model.</li> <li>In Part 2, perform a slight modification to Stateflow to provide the Stateflow side of the data interface with Simulink. The modifications to the Stateflow state transition diagram will be performed next week.</li> </ol>
Module 3, Week 5 Group Assignment 1	<p><i>Simulink Modeling: Traffic Light System Scenario</i></p> <ol style="list-style-type: none"> <li>Modify the Traffic Light model provided by The MathWorks to satisfy a new set of requirements that provide the capability of the system to issue</li> </ol>

Activity	Description
	<p>an alarm if the system does not receive a valid password within a designated amount of time.</p> <ol style="list-style-type: none"> <li>2. In Part 1 of the assignment, modify the Simulink model to provide facilities for the simulation operator to provide the needed inputs from Simulink to Stateflow to represent the availability of a valid password. The modifications to be made to the model will involve only the Simulink portion of the model.</li> <li>3. In Part 2, perform a slight modification to Stateflow to provide the Stateflow side of the data interface with Simulink. The modifications to the Stateflow state transition diagram will be performed next week.</li> </ol>

### Module 3, Week 6: Simulink Stateflow - Tools

Activity	Description
<p><b>Module 3, Week 6 Readings and Lesson Presentations</b></p>	<ul style="list-style-type: none"> <li>▪ SE 5348 M3 Stateflow.pptx</li> <li>▪ SE 5348 M3 Getting Started With Stateflow.pptx</li> <li>▪ Stateflow Video (from The Mathworks, requires creating a free account) <a href="https://www.mathworks.com/videos/introduction-to-stateflow-81549.html">https://www.mathworks.com/videos/introduction-to-stateflow-81549.html</a></li> </ul>
<p><b>Module 3, Week 6 Video Classroom</b></p>	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<p><b>Module 3, Week 6 Discussion Assignment 2</b></p>	<p style="text-align: center;"><i>Stateflow Tutorial Assessment</i></p> <ol style="list-style-type: none"> <li>1. Using MATLAB, access the on-line tutorial lessons known as the Stateflow Onramp</li> <li>2. Perform lessons 1 through 7 in the tutorial set</li> <li>3. Provide insight into the utility of this learning resource in getting you to the point that you feel confident about using Stateflow</li> </ol> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<p><b>Module 3, Week 6 Individual Assignment 2</b></p>	<p style="text-align: center;"><i>Stateflow Modeling: Traffic Light System Scenario</i></p> <ol style="list-style-type: none"> <li>1. Review the new requirements for the Traffic Light System that define the behavior that is sought out of the completed model</li> <li>2. Run the simulation to detect any errors. Reiterate modifications until the simulation can run without any errors</li> <li>3. Provide a screenshot of your modified Stateflow model</li> <li>4. Provide a screenshot of any other model element that you think is critical to describing your modifications</li> <li>5. Save the Stateflow model as TLS_ Name.slx (change "Name" for your designated assignment submission name to use), and upload it to Blackboard as part of your assignment submission</li> </ol>
<p><b>Module 3, Week 6 Group Assignment 2</b></p>	<p style="text-align: center;"><i>Stateflow Modeling: Home Security System Scenario</i></p> <ol style="list-style-type: none"> <li>1. Review the new requirements for the Security System that define the behavior that is sought out of the completed model</li> <li>2. Run the simulation to detect any errors. Reiterate modifications until the simulation can run without any errors</li> <li>3. Provide a screenshot of your modified Stateflow model</li> <li>4. Provide a screenshot of any other model element that you think is critical to describing your modifications</li> </ol>

Activity	Description
	5. Save the Stateflow model as HSS_GroupX.slx (change "X" to your Group Letter), and upload it to Blackboard as part of your assignment submission
<b>Module 3 Test</b>	<p style="text-align: center;"><i>Module 3 Test</i></p> <ul style="list-style-type: none"> <li>This test covers reading assignments, discussions, individual assignments, group assignments, and presentations in the module.</li> <li>The test consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.</li> </ul>

### Module 4, Week 7: SysML Intro & Requirements Diagrams

Activity	Description
<b>Module 4, Week 7 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>INCOSE Handbook, v4.0, section 9.1.9</li> <li>Lenny Delligatti. (2014). <i>SysML Distilled, A Brief Guide to the Systems Modeling Language</i>. First edition. Addison-Wesley, Chapter 2, Overview of the Systems Modeling Language.</li> <li>Hause, Matthew, et al. "Testing Solutions through SysML/UML." INCOSE, 2009. Obtained via the INCOSE "Wiley Online Proceedings Library" <ul style="list-style-type: none"> <li>Note: This article is available through INCOSE. See the <a href="#">SE 5348 Home Page on Blackboard -&gt; Student Resources -&gt; INCOSE International Symposium Presentations</a> for a description of how to access technical papers through INCOSE.</li> </ul> </li> <li>L. Li, N. Wang, L. Ma and Q. Yang, "Modeling method of military aircraft support process based SysML," The Proceedings of 2011 9th International Conference on Reliability, Maintainability and Safety, Guiyang, 2011, pp. 1247-1251. doi: 10.1109/ICRMS.2011.5979460 <ul style="list-style-type: none"> <li>Note: This article is available through the IEEE Xplore resource via the UTEP Library. See the <a href="#">SE 5348 Home Page on Blackboard -&gt; Student Resources -&gt; Library Guide</a> for a description of how to access technical papers through the UTEP Library.</li> </ul> </li> <li>SE 5348 M4 SysML Introduction.pptx</li> <li>How To Access INCOSE Publications in the Wiley Online Proceedings Library.pptx</li> <li>How To Access Technical Papers from the UTEP Library.pptx</li> </ul>
<b>Module 4, Week 7 Video Classroom</b>	<ul style="list-style-type: none"> <li>Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 4, Week 7 Discussion Assignment 1</b>	<p style="text-align: center;"><i>Comparing SysML with UML</i></p> <ol style="list-style-type: none"> <li>The System Modeling Language (SysML) addresses many shortcomings that systems engineers felt were not addressed by the Unified Modeling Language (UML) when modeling systems. Why was UML not sufficient for SE needs? Elaborate on two of these reasons/needs that were addressed by SysML.</li> <li>UML class diagrams and SysML block definition diagrams (bdd) are both types of blocks diagrams used in the modeling languages covered. Evaluate and compare two common elements and two differences among UML class diagrams and SysML block definition diagrams (bdd).</li> <li>Why was the internal block diagram (ibd) created? Evaluate two needs of SE that are addressed by this diagram that are not covered in any UML diagrams and explain the rationale behind your decision.</li> </ol>

Activity	Description
	<p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<p><b>Module 4, Week 7 Individual Assignment 1</b></p>	<p style="text-align: center;"><i>SysML Diagrams Overview</i></p> <p>Apply knowledge of the intended purpose of SysML diagrams and the applicable concepts in which they can each represent.</p> <ol style="list-style-type: none"> <li>1. Provided in the first column of Template 1 is a systems concept that requires a visual representation.</li> <li>2. Consider what SysML diagram(s) are the best fit for that concept and explain why.             <ol style="list-style-type: none"> <li>a. One example is provided.</li> </ol> </li> <li>3. In each row, you may decide that only one diagram applies to representing the requested information. In that case, only complete the column for Diagram A.</li> <li>4. In some cases, you may decide that a second diagram (B) also applies. In that case, complete the column for Diagram B as well.</li> </ol>
<p><b>Module 4, Week 7 Group Assignment 1</b></p>	<p style="text-align: center;"><i>SysML Diagrams Overview</i></p> <p>Apply knowledge of the individual diagrams within SysML and the information that each diagram is intended to be provided from the systems engineer to the rest of the development team.</p> <ol style="list-style-type: none"> <li>1. Read the article "Modeling Method of Military Aircraft Support Process Based SysML"</li> <li>2. Provide guidelines as to the use of each of the SysML diagrams listed in Template 1 in terms of addressing some information need identified in the article.             <ul style="list-style-type: none"> <li>• It is NOT enough to just state the purpose of the diagram.</li> <li>• Consider and describe how the diagram satisfies the information need described in the article.</li> <li>• If the SysML diagram is not represented in the article say "Not covered in article."</li> </ul> </li> <li>3. Identify and provide figure numbers from the article that corresponds to each type of diagram.             <ul style="list-style-type: none"> <li>• Provide only <b>one</b> figure number per diagram type.</li> <li>• If the SysML diagram is not represented in any figure in the article, say "N/A".</li> </ul> </li> </ol>

### Module 4, Week 8: SysML Intro & Requirements Diagrams

Activity	Description
<p><b>Module 4, Week 8 Readings and Lesson Presentations</b></p>	<ul style="list-style-type: none"> <li>▪ Lenny Delligatti. (2014). <i>SysML Distilled, A Brief Guide to the Systems Modeling Language</i>. First edition. Addison-Wesley, Chapter 11, Requirements Diagrams.</li> <li>▪ Dos Santos Soares, Michel, and Jos Vrancken. "Model-Driven User Requirements Specification using SysML." <i>Journal of Software</i>, vol. 3, no. 6, June 2008, pp. 57-68, doi:10.1.1.523.5486. Accessed 31 Aug. 2017.             <ul style="list-style-type: none"> <li>▪ <a href="https://www.researchgate.net/publication/42804536_Model-Driven_User_Requirements_Specification_using_SysML">https://www.researchgate.net/publication/42804536_Model-Driven_User_Requirements_Specification_using_SysML</a></li> </ul> </li> <li>▪ SE 5348 M4 Requirement Diagram.pptx</li> </ul>

Activity	Description
<p align="center"><b>Module 4, Week 8 Video Classroom</b></p>	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<p align="center"><b>Module 4, Week 8 Discussion Assignment 2</b></p>	<p align="center"><i>Requirement Diagram Relationships</i></p> <ol style="list-style-type: none"> <li>1. Create guidance in Template 1 for the use of the indicated requirement relationship types</li> <li>2. For each of the relationship types in the template <ul style="list-style-type: none"> <li>▪ Indicate the purpose of the relationship type, elaborating when and/or how to use the relationship type</li> <li>▪ Indicate whether the graphic line used to depict the relationship is Solid or Dashed</li> <li>▪ Describe the direction of the graphical line adornment (arrowhead for requirements relationships or crosshairs symbol for containment), this would be one of the following choices: <ul style="list-style-type: none"> <li>▪ Requirements-to-requirements</li> <li>▪ Requirements-to-model elements</li> <li>▪ Either requirements-to-requirements, or requirements-to-model elements</li> </ul> </li> </ul> </li> </ol> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<p align="center"><b>Module 4, Week 8 Individual Assignment 2</b></p>	<p align="center"><i>Requirement Relationships: Emergency Smoke Management System</i></p> <p>It is not only important to know the syntax and semantics of a diagram, but also its application. Students shall use their knowledge to identify the types of relationships that are missing between elements in a provided requirements diagram.</p> <ol style="list-style-type: none"> <li>3. A separately provided PowerPoint-based template contains a requirement diagram for an Emergency Smoke Management System (ESMS) of a building. The diagram is reproduced below for reference. The types of requirement relationships between each requirement and/or model element are missing.</li> <li>4. Review the diagram in the PowerPoint file and assess the nature of the relationships between each of the diagram elements.</li> <li>5. Supply the missing relationships that exist between the requirements and/or model elements by copying from graphical elements in the legend. Note that there is one "Model Element" (a block), the rest are all requirements. <ul style="list-style-type: none"> <li>▪ Modify the diagram using the correct syntax:</li> <li>▪ Lines between diagram elements (dashed or solid)</li> <li>▪ Line adornment (arrowheads or crosshairs) <ul style="list-style-type: none"> <li>▪ Including indication of which end of the line the adornment goes on</li> <li>▪ Requirement relationship type (surrounded by «guillemets»)</li> </ul> </li> </ul> </li> <li>6. Supply the modified PowerPoint Template as your assignment submission according to the instructions in Blackboard for this assignment.</li> <li>7. PowerPoint Template: <a href="#">M4W08_A2 Graphical Template.pptx</a></li> </ol>
<p align="center"><b>Module 4, Week 8 Group Assignment 2</b></p>	<p align="center"><i>Creating a Requirements Diagram for an Elevator System</i></p> <p>Developing abstract models takes a keen mindset and practice.</p> <ol style="list-style-type: none"> <li>1. Refer to the definition of the Elevator System in Module 3, Week 6.</li> </ol>

Activity	Description
	<ol style="list-style-type: none"> <li>2. Create a set of requirements for a package of the system. You may reuse requirements stated or derived from the definition of the system provided in Module 3. You may also search for other requirements for these types of systems. Do not over specify the system. Just document enough requirements to create your diagram, as indicated in Step 3.</li> <li>3. Create a Requirements Diagram that includes: <ul style="list-style-type: none"> <li>▪ 1 top-level requirement</li> <li>▪ 4 requirements representing requirement specifications (containment relationship)</li> <li>▪ 3 derived requirements «deriveReq»</li> <li>▪ 2 refined requirements «refine»</li> <li>▪ 2 satisfying model elements (blocks) «block»</li> <li>▪ 2 verifying elements (test cases) «verify»</li> </ul> </li> <li>4. A separately provided PowerPoint-based template contains the graphical elements you can copy/paste to create your requirements diagram.</li> <li>5. Supply the modified PowerPoint template as your assignment submission according to the instructions in Blackboard for this assignment.</li> <li>6. PowerPoint Template: <a href="#">M4W08_G2 Graphical Template.pptx</a></li> </ol>
<b>Module 4 Test</b>	<p style="text-align: center;"><i>Module 4 Test</i></p> <p>This test covers reading assignments, discussions, individual assignments, group assignments, and presentations in the module.</p> <p>The test consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.</p>

### Module 5, Week 9: SysML Structure Diagrams

Activity	Description
<b>Module 5, Week 9 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>▪ Lenny Delligatti. (2014). <i>SysML Distilled, A Brief Guide to the Systems Modeling Language</i>. First edition. Addison-Wesley, Chapters 3 and 4. Focus on material that helps you complete assignments.</li> <li>▪ <a href="#">SE 5348 M5 SysML BDD and IBD.pptx</a></li> <li>▪ <a href="#">SE 5348 M5 Guide to Interpreting Reading Material for BDD and IBD.docx</a></li> <li>▪ <a href="#">SE 5348 M5 Notes on Building BDDs and IBDs.pptx</a></li> <li>▪ <a href="#">Finance_SysML_Modelling_Language_Explained.pdf</a> found at <a href="https://www.omg.sysml.org/SysML_Modelling_Language_explained-finance.pdf">https://www.omg.sysml.org/SysML_Modelling_Language_explained-finance.pdf</a></li> </ul>
<b>Module 5, Week 9 Video Classroom</b>	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 5, Week 9 Discussion Assignment 1</b>	<p style="text-align: center;"><i>Build an IBD from a BDD</i></p> <p>First, write a guideline to create an Internal Block Diagram (IBD) from a Block Definition Diagram (BDD). The guideline shall list the steps to be followed. Second, write a verification checklist with at least five criteria to assure that <i>BDD</i> and <i>IBD</i> are consistent.</p> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<b>Module 5, Week 9 Individual Assignment 1</b>	<p style="text-align: center;"><i>Modeling System Scope</i></p> <p>Develop a Block Definition Diagram (BDD) and an Internal Block Diagram (IBD) for the Candy Machine system.</p>



Activity	Description
	<ul style="list-style-type: none"> <li>SE 5348 M5 Candy Dispenser Example.pptx</li> </ul>
<b>Module 5, Week 9 Group Assignment 1</b>	<p><i>Defining Sys Scope BDD &amp; IBD</i></p> <p>Find a manual or technical description for a washing mashing, dishwasher, or similar device and identify main components. Create a BDD, IBD, and perform a consistency review.</p>

### Module 5, Week 10: SysML Structure Diagrams

Activity	Description
<b>Module 5, Week 10 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>Lenny Delligatti. (2014). <i>SysML Distilled, A Brief Guide to the Systems Modeling Language</i>. First edition. Addison-Wesley, Chapter 9. Focus on material that helps you complete assignments.</li> <li>SE 5348 M5 Package &amp; Parametric Diagram.pptx</li> <li>SE 5348 M5 Notes on Value Properties.pptx</li> </ul>
<b>Module 5, Week 10 Video Classroom</b>	<ul style="list-style-type: none"> <li>Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 5, Week 10 Discussion Assignment 2</b>	<p><i>Build Parametric from Block Definition diag.</i></p> <p>First, write a guideline to create a parametric diagram from a class diagram with constraint blocks. The guideline shall list the steps to be followed. Second, write a verification checklist with at least five criteria to assure that the <i>Block Definition diagram</i> and the <i>Parametric diagram</i> are consistent.</p> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<b>Module 5, Week 10 Individual Assignment 2</b>	<p><i>Parametric Diagram</i></p> <p>Using the Candy vending machine from Module 5 Week 9, create a class diagram with constraint blocks and then define the parametric diagram.</p>
<b>Module 5, Week 10 Group Assignment 2</b>	<p><i>Package &amp; Parametric Diagram</i></p> <p>Create a Block Definition diagram with constraint blocks (system equations and their parameters); create the parametric diagram; and create a package diagram.</p>
<b>Module 5 Test</b>	<p><i>Module 5 Test</i></p> <p>This test covers reading assignments, discussions, individual assignments, group assignments, and presentations in the module.</p> <p>The test consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.</p>

### Module 6, Week 11: SysML Behavior Diagrams

Activity	Description
<b>Module 6, Week 11 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>Lenny Delligatti. (2014). <i>SysML Distilled, A Brief Guide to the Systems Modeling Language</i>. First edition. Addison-Wesley <ul style="list-style-type: none"> <li>Chapter 5 – Use Case Diagrams</li> <li>Chapter 7 – Sequence Diagrams</li> <li>Focus on material that helps you complete the assignments</li> </ul> </li> <li>SE 5348 M6 Use Case &amp; Sequence Diagrams.pptx</li> </ul>
<b>Module 6, Week 11 Video Classroom</b>	<ul style="list-style-type: none"> <li>Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>

Activity	Description
<b>Module 6, Week 11 Discussion Assignment 1</b>	<p><i>Defining the System Context</i></p> <p>As system engineer, you should have a good understanding of both a) the intended use (purpose) of the model and b) the semantics and syntax of the diagrams that represent the model. Based on the system's context and the circumstances, you should decide which kind of model is more appropriate. In this discussion, you will compare and contrast four modeling diagramming techniques for defining system scope and system component interactions.</p> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<b>Module 6, Week 11 Individual Assignment 1</b>	<p><i>Developing System Use Scenarios</i></p> <p>In modeling the dynamic aspects of a system, it is important to understand the different behaviors that a system can take. One way to understand the different behaviors of a system is to analyze the different scenarios to deliver system services; that is, the sequence of interactions between actors and system components that take place while delivering a system service (a use case). In this assignment, you will create scenarios for registering a student in a university online course and the visual representation of these scenarios using sequence diagrams.</p>
<b>Module 6, Week 11 Group Assignment 1</b>	<p><i>Using SysML Diagrams for the Elevator System</i></p> <p>The intended services that a System of Interest (SOI) provides to actors and the behaviors that the SOI performs while delivering that service should be well understood by engineers developing the SOI. In this assignment, you create a use case diagram and a sequence diagram for the Elevator System that you have dealt with in a previous assignment in this course.</p>

### Module 6, Week 12: SysML Behavior Diagrams

Activity	Description
<b>Module 6, Week 12 Readings and Lesson Presentations</b>	<ul style="list-style-type: none"> <li>Lenny Delligatti. (2014). <i>SysML Distilled, A Brief Guide to the Systems Modeling Language</i>. First edition. Addison-Wesley, Chapter 6 Activity Diagrams and Chapter 8 State Machine Diagrams. Focus on material that helps you complete the assignments.</li> <li><a href="#">SE 5348 M6 Activity Diagrams &amp; State Machine Diagrams.pptx</a></li> </ul>
<b>Module 6, Week 12 Video Classroom</b>	<ul style="list-style-type: none"> <li>Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 6, Week 12 Discussion Assignment 2</b>	<p><i>Defining the System Behavior</i></p> <p>Systems engineers have four SysML diagrams available for modeling the behavior of a system. These diagrams are: 1) the Use Case Diagram (UC), 2) Sequence Diagram (SD), 3) Activity Diagram (ACT), and 4) State Machine Diagram (STM). In this discussion, you will analyze and identify the applications of these behavioral diagrams in SysML.</p> <p>Post your initial response to this discussion question.</p> <p>Also respond to at least two of your peers' submissions.</p>
<b>Module 6, Week 12 Individual Assignment 2</b>	<p><i>Modeling the States of an Automobile</i></p> <p>Behavioral analysis can be very useful in describing the states that a system can exist within as well as the events that causes changes between those states. These can be visually represented by a state machine diagram in SysML. In this</p>

Activity	Description
	assignment, you will analyze the states that exist within a typical modern automobile and the event-driven responses that can occur within the system and create a state machine diagram.
<b>Module 6, Week 12 Group Assignment 2</b>	<p style="text-align: center;"><i>Modeling System Behavior</i></p> <p>In modeling the behavior of a system-of-interest, it is important to fully understand a scenario involved in providing a service, as this is the entire reason to a system's existence. Activity diagrams shall now be used to depict the flow of the activities between actors and the system, modeling synchronization and concurrency of activities. State machine diagrams model the activities performed within different event-driven modes that a system can exhibit in response to different stimuli. In this assignment, you and your group will analyze and depict the behavior of three systems-of-interest by creating an Activity diagram and State Machine diagram.</p>
<b>Module 6 Test</b>	<p style="text-align: center;"><i>Module 6 Test</i></p> <p>This test covers reading assignments, discussions, individual assignments, group assignments, and presentations in the module. The test consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.</p>

### Module 7, Week 13: SysML Modeling with No Magic's Systems of Systems Architect 2021X

Activity	Description
<b>Module 7, Week 13 Readings and Lesson Presentations</b>	In the assignments for this module, you will make use of Systems of Systems Architect 2021X to complete various labs provided to you on Blackboard. These labs will include items such as creating a new project, importing requirements, and modeling use cases, activities, and structure. <ul style="list-style-type: none"> <li>▪ Student Workbook (Lab Manual)</li> </ul>
<b>Module 7, Week 13 Video Classroom</b>	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 7, Week 13 Individual Assignment 1</b>	Perform Labs 1 through 4 in the Student Workbook
<b>Module 7, Week 13 Individual Assignment 2</b>	Perform Labs 5 and 6 in the Student Workbook
<b>Module 7, Week 13 Individual Assignment 3</b>	Perform Lab 7 in the Student Workbook

### Module 7, Week 14: SysML Modeling with No Magic's Systems of Systems Architect 2021X

Activity	Description
<b>Module 7, Week 14 Readings and Lesson Presentations</b>	In the assignments for this module, you will make use of Systems of Systems Architect 2021X to complete various labs provided to you on Blackboard. These labs will include items such as creating a new project, importing requirements, and modeling use cases, activities, and structure. <ul style="list-style-type: none"> <li>▪ Student Workbook (Lab Manual)</li> </ul>
<b>Module 7, Week 14 Video Classroom</b>	<ul style="list-style-type: none"> <li>▪ Weekly video classroom hour to discuss topics, assignments, and Q&amp;A <a href="https://utep-edu.zoom.us/j/9343262905">https://utep-edu.zoom.us/j/9343262905</a></li> </ul>
<b>Module 7, Week 14 Individual Assignment 4</b>	Perform Labs 8 and 9 in the Student Workbook

Activity	Description
Module 7, Week 14 Individual Assignment 5	Perform Lab 10 in the Student Workbook
Module 7, Week 14 Individual Assignment 6	Student Survey
Module 7 Test	<p style="text-align: center;"><i>Module 7 Test</i></p> <p>This test covers reading assignments, discussions, individual assignments, group assignments, and presentations in the module. The test consists of 60 multiple choice questions, each of which have five possible answers. Select the best possible answer for each question. The test duration is 60 minutes. There is only one test attempt allowed.</p>

## Assessing Student Learning

This course uses several different methods to assess student learning. A description of each method follows:

**Peer Review:** In a peer review, students can get the feedback they need to become more successful in a less stressful situation. For peer review to be successful, the instructor will provide clear guidelines and/or questions to be answered by the student reviewers.

**Self-Reflection/Self-Evaluation:** Reflection and self-evaluation develop metacognitive thinking. By engaging in self-review, students can carry their learning into other parts of their lives and take more responsibility for their own learning. Although not all students take self-evaluation seriously, those who do will benefit greatly from it.

**Group Problem Solving:** Students will be assigned to a group. When students work together to solve a problem or complete a project, they learn from each other and expand learning for all. Student-to-student interaction is increased, which in turn increases student learning and assignment completion. The group charter will include procedures for managing disagreements within the group; these ground rules make for a much smoother and more effective group experience for all.

Each group will designate a group leader. The group leader coordinates the activities of the group, but IS NOT responsible for performing other students' work. The group leader resolves any technical problems, in coordination with the instructor, if necessary. Personal problems are first handled by the group leader and then escalated to the instructor, if necessary. The group leader has the authority to assign tasks, review status, and resolve issues within his or her technical scope.

In business, all employees are required and expected to be respectful of all other employees. The same applies to students in groups. All students will be treated with respect and will be given a chance to voice their opinion within the group. The instructor, in coordination with the department and the university, will deal directly with any complaints from students related to lack of respect and lack of inclusion within the groups.

## Ground Rules for Discussion Board Participation

**Remember your place:** A Web-based classroom is still a classroom, and comments that would be inappropriate in a regular classroom are likely to be inappropriate in a Web-based course as well.

**This is permanent:** Think carefully about the content of your message before contributing it. Once sent to the group, there is no taking it back. Members of the class and the instructor will be reading any postings.

**Respect your fellow students and instructor.** Respect and courtesy must be provided to classmates and to instructor at all times. Do not use inappropriate language, all capital letters, or language short cuts. No harassment, flaming, or inappropriate postings will be tolerated.

**Giving feedback professionally:** Write constructive feedback by addressing the idea, not the person. People may have different points, positions and believes in the aspects being discussed. The discussion must be limited to the aspects/ideas only. Personal attacks are not 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. Even if you disagree with another student's argument, you can provide a counter-argument in a positive, constructive way.

**Be forgiving:** If someone states something that you find offensive, mention this directly to the instructor. Remember that the person contributing to the discussion is also new to this form of communication. What you find offensive may quite possibly have been unintended and can best be cleared up by the instructor.

**Language:** Given the absence of face-to-face clues, written text can easily be misinterpreted. Avoid the use of strong or offensive language and the excessive use of exclamation points. If you feel particularly strongly about a point, it may be best to write it first as a draft and then to review it, before posting it, in order to remove any strong language.

**Test for clarity:** Messages may often appear perfectly clear to you as you compose them, but turn out to be perfectly obtuse to your reader. One way to test for clarity is to read your message aloud to see if it flows smoothly. If you can read it to another person before posting it, even better.

**Submit quality work.** Online entries should be written in Standard Writing English with edited spelling, grammar, and punctuation. Although the grammar and spelling of a message typically are not graded, they do reflect on you, and your audience might not be able to decode misspelled words or poorly constructed sentences. It is a good practice to compose and check your comments in a word-processor before posting them.

**Follow the parameters / Stick to the point:** Follow the posting requirements and parameters set up by the instructor. Contributions to a discussion should have a clear subject header, and you need to stick to the subject. Don't waste others' time by going off on irrelevant tangents.

**Read first, write later:** Don't add your comments to a discussion before reading the comments of other students unless the assignment specifically asks you to do so. Ignoring your fellow students is rude. Avoid repetition of what someone else has already said. Add something new to the discussion. Comments related to the content of previous messages should be posted under them to keep related topics organized, and you should specify the person and the particular point you are following up on.

**Quality posts get credit:** There will be no credit given for answers that simply say "Yes" or "No" or something similar with no technical discussion. Posts should justify positions and provide specific examples. Students must demonstrate that they have read the assignment and their classmates' comments carefully and thoughtfully.

**Meet the deadline:** Be sure to post assignments in a timely fashion to receive credit for the discussion. Pay close attention to the posted deadlines. Late deliveries will receive a score of zero (0).

**When work or personal events interfere with the class:** As soon as you know that you may have a meeting, business travel, or other event that interferes with being able to complete and submit your homework on time, you must send me an email **IMMEDIATELY**, preferably with a one-to-two-day advanced notice, so I can take that into account when grading your work. Please send the email to my UTEP address [jgartus@utep.edu](mailto:jgartus@utep.edu).

### Policy on Copyright and Fair Use

The University requires all members of its community to follow copyright and fair-use requirements. Students are individually and solely responsible for violations of copyright and fair-use laws. The University will neither protect nor defend students and will not assume any responsibility for students who violate fair-use laws. Violations of copyright laws can result in federal and state civil penalties and criminal liability, as well as disciplinary action under University policies.

### Other References

- UTEP Handbook of Operating Procedures <https://www.utep.edu/hoop/>
- UTEP Office of Student Conduct and Conflict Resolution <https://www.utep.edu/student-affairs/osccr/>
- UTEP Office of Institutional Compliance <https://www.utep.edu/compliance/>
- UT Regents' Rules and Regulations <https://www.utsystem.edu/offices/board-regents/regents-rules-and-regulations>

### Disability Statement

If you have a disability and need special accommodation, please contact the Center for Accommodations and Support Services (CASS) at 915-747-5148, send email to [cass@utep.edu](mailto:cass@utep.edu), or visit the office located in UTEP Union East, Room 106. Then notify me as soon as CASS has approved your request for accommodation. Otherwise, you are expected to complete all assignments and meet all deadlines as specified in this syllabus.

For additional information, please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass).

### COVID-19 Precautions

Please stay home if you (1) have been diagnosed with COVID-19, or (2) are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. The Student Health Center is equipped to provide COVID 19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org)

### Software Requirements

In addition to technical software identified in the section titled "Required Computer Software", you will need the following software on your computers to efficiently work in this course. In some cases, your computer may already have some of these programs installed.

- **Adobe Acrobat Reader.** You can get the program by going to <http://www.adobe.com/> and then clicking on the icon on the center of the screen which says 'Get Adobe Reader' Follow instructions to install the reader.
- **Adobe Flash Player.** You can get the player by going to <http://www.adobe.com/> and then clicking on 'Get Adobe Flash Player'. Follow instructions to install the player.
- **Apple QuickTime Player.** You can get this player by going to <http://www.apple.com/>. Once there, click on the 'Downloads' tab on the top of the page and then click on QuickTime 'Download' and follow instructions.
- **Microsoft Office.** I recommend buying this if you do not have any word processing software or presentation software. As students, you should be able to obtain this from the Engineering Technology Center at <https://www.utep.edu/engineering/etc/Software/> or <https://my.apps.utep.edu/>
- **Email tool** with file attachment capability. Please use your UTEP email account.
  - If you do not have a UTEP e-mail account, please get one immediately. Here is how:
    - Go to <https://newaccount.utep.edu/>
    - Create your account (remember that your date of birth is in the form mm/dd/yyyy: two digits for the month and day, and four digits for the year).
    - After you create your account, you must wait 48 hours, then go back to the site and click on “Check on existing account.” Enter your UTEP Student ID Number (e.g. 80XXXXXX) and date of birth, and you will get your login name and password. Please let one of us know if you have any difficulty. You may also call UTEP Technology Support at 915-747-4357.
    - The Technology Support desk hours are given below:  
Mon-Fri 7:00am - 8:00pm (Mountain Time)  
Sat 9:00am - 2:00pm (Mountain Time)  
Sun 12:00pm - 5:00pm (Mountain Time)

## Equipment Requirements

You **need a personal computer** to view course material, submit assignments, and take the tests at the end of the modules. You will also need to install software applications that may require administrative privileges. You should be aware that some organizations protect their computer equipment with firewalls, other security applications, and do not provide administrative privileges to their employees. If you are using a computer from your work, you may not be able to take the tests or to install software applications required in some classes; however, this is not a valid excuse for not taking a test or uploading assignments to Blackboard.

## Glossary

**Cyber-Harassment**, or the use of a computer to cause a person harm such as anxiety, distress or psychological harm, including abusive, threatening or hateful emails and messages and the posting of derogatory information online.

**Cyberbullying**, or intimidating messages sent directly to the victim via email or other Internet communication mediums, and/or the use of technological means to interfere with a victim's use of the Internet such as hacking or denial of services attacks. This can also include spreading rumors about the victim in internet forums or discussion boards; subscribing the victim to unwanted online services or sending messages to others in the victim's name.

**Cyberstalking**, or threatening behavior or unwanted advances directed at another using the Internet and other forms of online and computer communications. With personal information becoming readily available to an increasing number of people through the Internet and other advanced technology, state legislators are addressing the problem of stalkers who harass and threaten their victims over the World Wide Web.

**Flaming**, or hostile and insulting interaction between internet users. It is frequently the result of the discussion of heated real-world issues such as politics, religion, and philosophy, or of issues that polarize subpopulations, but can also be provoked by seemingly trivial differences.

**Deliberate flaming**, as opposed to flaming as a result of emotional discussions, is carried out by individuals who are specifically motivated to incite flaming. Usually, are subtler than their counterparts, or trolls, who also post inflammatory messages in an online community. Their primary intent is to provoke readers into an emotional response and disrupt normal, on-topic, discussion.

**Plagiarism**, or the presentation of another person's work as your own, whether you mean to or not (i.e. copying parts of or whole papers off the Internet).

**Collusion**, or lending work to another person to submit as his or her own.

**Fabrication**, or deliberately creating false information on a works cited page.