|  |  |
| --- | --- |
| *Course Development Guide* | Course Number[Course Title] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Description**  | **Prerequisites** | **Credit Hour(s)** | **Grade requirement for major** | **Course Format (Online, Hybrid, Face-to-Face)** |
|  |  |  |  |  |

|  |  |
| --- | --- |
| **Assumption Check: What will students say if you ask them why they are taking the course? (*Make a note to ask them on the first class day*.)** | **Describe how students will utilize the knowledge and skills acquired in this course for other courses and career.** |
|  |  |

|  |  |
| --- | --- |
| **Critical content/prior knowledge needed to be successful in course** | **Developmental Material****(Where can students refresh/review critical content?)**  |
|  |  |
|  |  |
|  |  |

**Statement of how this course relates to other courses the students have taken/will take. Note: What assumptions do instructor/students have about this course?**

Add your course in the center box. List all courses that are prerequisites for or provide necessary prior knowledge for your course in the boxes on the left. List all courses for which your course is a prerequisite and courses that your course provides prior knowledge or preparation for on the right.

Your course here

Co-requisites

Course for which your course is prerequisite or provides necessary prior knowledge

Prerequisite or necessary prior knowledge

NOTE: If program outcomes are not

**[I] - Introduce = “Familiarize”
[E] - Expand = “Develop”**

**[S] - Strengthen = “Reinforce”
[D] - Demonstrate = “Apply”**

available, use this table.

TAMU Undergraduate Learning Outcomes

(for assistance, contact cte@tamu.edu)

|  |  |
| --- | --- |
| ***Student Learning Outcomes (SLO)*** | ***Methods of SLO Assessment*** |
| **[I, E, S, D] Master the depth of knowledge required for a degree** |
| [Course learning outcome] | [assessment of course learning outcome] |
| **[I, E, S, D] Demonstrate critical thinking** |
|  |  |
| **[I, E, S, D] Communicate effectively** |
|  |  |
| **[I, E, S, D] Practice personal and social responsibility** |
|  |  |
| **[I, E, S, D] Demonstrate social, cultural, and global competence** |
|  |  |
| **[I, E, S, D] Prepare to engage in lifelong learning** |
|  |  |
| **[I, E, S, D] Work collaboratively** |
|  |  |

**NOTE: If program outcomes are**

**[I] - Introduce = “Familiarize”
[E] - Expand = “Develop”**

**[S] - Strengthen = “Reinforce”
[D] - Demonstrate = “Apply”**

**available, use this table.**

Program Learning Outcomes

(for assistance, contact cte@tamu.edu)

|  |  |
| --- | --- |
| ***Outcomes*** | ***Assessment*** |
| **[I, E, S, D]** | Name and number of program learning outcome |
| [Course learning outcome] | [assessment of course learning outcome] |
| **[I, E, S, D]** | Name and number of program learning outcome |
|  |  |
| **[I, E, S, D]** | Name and number of program learning outcome |
|  |  |
| **[I, E, S, D]** | Name and number of program learning outcome |
|  |  |
| **[I, E, S, D]** | Name and number of program learning outcome |
|  |  |
| **[I, E, S, D]** | Name and number of program learning outcome |
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| **[I, E, S, D]** | Name and number of program learning outcome |
|  |  |
| **[I, E, S, D]** | Name and number of program learning outcome |
|  |  |
| **[I, E, S, D]** | Name and number of program learning outcome |
|  |  |

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| --- |
| **Individual/Group Assessment Strategies** |
| ***Check the activities that are/will be incorporated into this course (if any).* [*See “Glossary of Assessment Strategies – Abridged” on page 9*.]** |
| **Traditional** |   |   |   |   |   |   |   |   |   |   |   | **Transformational** |
|   |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
|   |  |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Homework-Individual (F, S) |  | Pre-test (P)/Post-test(P) |  | Presentations-Group (S) |  | Concept Inventory (P, F, S) |
|   |  |  |  |  |  |  |
| Quizzes-Individual (F, S) |  | Prior Knowledge Reflection (P, F) |  | Quizzes-Group (F, S) |  | Concept Mapping (P, F, S) |
|   |  |  |  |  |  |  |
| Exams (S) |  | Classroom Assessment Techniques (F) |  | Projects-Group (S) |  | Assignment or Exam Wrappers (F) |
|   |  |  |  |  |  |  |
| Projects-Individual (S) |  | Guided or Structured Notes (F) |  | Required Class Participation and Discussions (F) |  | Written Reflections on Learning (F, S) |
|   |  |  |  |  |  |  |
| Papers (S) |  | Polls or Surveys (P, F) |  | Exam Corrections for Credit (F) |  | ePortfolios (F, S) |
|   |  |  |  |  |  |  |
| Presentations-Individual (S) |  | Homework-Group (F, S) |  | Peer Review (F, S) |  |  |
|   |  |  |  |  |  |  |
| Comprehensive Exams (S) |  | Self-Assessment (P, F) |  |  |  |  |
|   |  |  |  |  |  |  |
| Field/Lab Reports (S) |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| ***Legend:***  | ***(P) Preparedness*** |  | ***(F) Formative*** |  | ***(S) Summative*** |  |
| **Other assessment activities:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|  |
| **What resources will be required to implement your assessment activity?**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |
| **What technologies will be utilized for assessment activity?**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |

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| --- |
| **Engagement, Active Learning, and Instructional Technology** |
| **Check the activities that are/will be incorporated into this course (if any).** **[*See Glossary of Engagement, Active Learning, and Instructional Technology Terms on pages 10-12.*]** |
|  |
| **Less Complex** |  |  |  |  |  |  | **More Complex** |
|   |  |  |  |  |  |  |  |  |  |   |
|  |  |  |  |  |  |  |  |  |  |  |
| Classification Pauses |  | Peer Review |  | Active Review Sessions |  | First-year Seminar or Experience |
|   |  |  |  |  |  |  |   |
| One-minute Paper |  | Brainstorming |  | Role Playing |  | Capstone Project |
|   |  |  |  |  |  |  |   |
| Self-Assessment |  | Case Studies |  | Jigsaw Discussion |  | Study Abroad |
|   |  |  |  |  |  |  |   |
| Large Group Discussion |  | Hands-on Technology |  | Inquiry Learning |  | Internship/Field Experience |
|   |  |  |  |  |  |  |   |
| Think-Pair-Share |  | Interactive Lecture |  | Forum Theater |  | Learning Community |
|   |  |  |  |  |  |  |   |
| Informal Group |  | Interactions with Diverse People and Content |  | Experiential Learning |  | Writing-Intensive Course |
|   |  |  |  |  |  |  |   |
|   |  |  |  | Collaborative Assignment |  | Undergraduate Research |
|   |  |  |  |  |  |  |   |
|   |  |  |  | Group Evaluations |  | Service or Community-Based Learning |
|   |   |   |   |   |   |
|   |  |  |  |  |  |  |  |  |  |   |
| **Other engagement activity: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|   |  |  |  |  |  |  |  |  |  |   |
| **What resources will be required to implement your engagement activity?** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
|   |  |  |  |  |  |  |  |  |  |   |
| **Choose which technologies will be incorporated into this course (if any):** |
|   | □ | Powerpoint |  |  |  |  |  |   |
|   | □ | Video |  |  |  |  |  |   |
|   | □ | eCampus/Moodle |  |  |  |  |  |   |
|   | □ | Web 2.0 Tools |  |  |  |  |  |   |
|   | □ | Other |  |  |  |  |  |   |
|   |   |   |   |   |   |   |   |   |   |   |

**Checklist for Best Practices:**

* Each course addresses 3 to 5 program learning outcomes
* Each program learning outcome is assessed:
	+ If the outcome is addressed at the demonstrate level (D), then the corresponding assessment will be summative at both the course and program levels.
	+ If the outcome is addressed at the introduce (I) or reinforce level (R), then the corresponding assessment can be both formative and summative at the course level, but only formative at the program level.
* Engagement and active learning:
	+ The course incorporates active learning and engagement techniques that allow the students to process and engage with the material.
	+ At the program level, at least 2 high-impact practices are incorporated throughout the curriculum (it is not necessary that there is one in every course). If there is a high-impact practice in this course, it is noted on page 3 of this course guide.
		- Characteristics of a high-impact practice: 1) demand substantial and sustained effort on purposeful tasks that deepen students’ commitment; 2) put students in circumstances that demand extended interactions with faculty and peers about substantive matters; 3) increase likelihood that students experience diversity through interactions with people who are different from themselves; 4) require frequent feedback to student performance; 5) help students applications of learning in different settings; and 6) often are life-changing experiences.
* Making Connections
	+ The manner in which student ability to make connections will be developed in the course is described. If specific prompts need to be utilized for program assessment purposes, those are listed.
	+ Making connections is the process on integrating knowledge – see [AAC&U value rubric](https://www.aacu.org/value/rubrics/integrative-learning). Encouraging the qualities of intentional learners – questioning, organizing, connecting, reflecting, and adapting – promotes making connections. ([Lattuca & Stark](https://www.amazon.com/Shaping-College-Curriculum-Academic-Context/dp/0787985554))
* Reflection
	+ The manner in which reflection will be incorporated into the course is described. If the guide is being completed in connection with curriculum redesign and if specific prompts need to be utilized for program assessment purposes, those are listed.
	+ *Reflection is important for helping students identify what they do and do not know.* *Reflection involves making conscious connections between ideas and experiences to understand and articulate their value. It is a metacognitive act (thinking about thinking) that asks the questions: “How do you know what you know?” or “How do you learn?”* For moreon reflection, visit the google site on [transformative learning](https://sites.google.com/a/tamu.edu/transformative-learning/).
* Program learning outcome rubrics
	+ If the guide is being completed in connection with curriculum redesign, the relevant program learning outcomes rubrics are attached to this course guide.
* Program assessment instructions
	+ If the guide is being completed in connection with curriculum redesign, specific instructions for program assessment are provided.
* Syllabus verified to meet TAMU minimum syllabus requirements based on [checklist](http://registrar.tamu.edu/Registrar/media/Curricular-Services/Curricular%20Approvals/Course%20Approvals/CourseSubmissionChecklist.pdf) available from Curricular Services
* If the course is a multi-section course and/or taught on multiple campuses, refer to the master syllabus and include evidence-based annotation supporting adjustments to your syllabus based on situational factors for your section/campus context.

**Resources for Students – Academic Success Center** [**StudyHub**](http://studyhub.tamu.edu/)**:**

|  |  |
| --- | --- |
| * [Math help](http://studyhub.tamu.edu/Study-Strategies/Math-Help)
* [Note-taking](http://studyhub.tamu.edu/Study-Strategies/Note-taking)
* [Reading](http://studyhub.tamu.edu/Study-Strategies/Reading-Skills)
* [Study Strategies](http://studyhub.tamu.edu/Study-Strategies/Study-Skills-%28General%29)
* [Post-test analysis](http://studyhub.tamu.edu/Study-Strategies/Post-test-Analysis)
* [Test preparation and test taking](http://studyhub.tamu.edu/Study-Strategies/Study-Skills-%28General%29)
* [Time management and organization](http://studyhub.tamu.edu/Study-Strategies/Study-Skills-%28General%29)
 | * [Writing](http://writingcenter.tamu.edu) (academic writing, posters: help with brainstorming, revision, and editing)
* [Public Speaking](http://writingcenter.tamu.edu) (composing and delivering presentations; slide preparation)
* [On-campus academic help](http://studyhub.tamu.edu/) (help desks, tutoring, peer mentors, and more)
* [Motivation to study or improve academic performance](http://successcenter.tamu.edu/Academic-Coaching)
 |

**Glossary of Assessment Strategies – Abridged**

**Generally Categories of Assessment:**

* **Preparedness Assessment:** No-stakes or low-stakes, diagnostic/introductory assessment to determine what students know and can do or to get a pre-assessment of attitudes, beliefs, mindsets, or values related to discipline of learning experience.
* **Formative Assessment:** Low-stakes assessment to provide opportunities for practice and feedback on progress, normalize failure as a part of learning process, and prepare for summative assessment.
* **Summative Assessment:** High-stakes assessment to determine level of success at achieving student learning outcomes or no-stakes or low-stakes assessment of attitudes, beliefs, mindset, or values following a course or learning experience with a goal of identifying change or growth.

**Examples of Traditional Assessment Strategies:**

**Homework – Individual, Group Quiz - Individual, Group**

**Project - Individual, Group Presentation - Individual, Group**

**Paper/Report/Lab Report Exam/Comprehensive Exam**

**Clicker Question, Poll, Survey**

**Examples of Transformational Assessment Strategies:**

* [**Assignment or Exam Wrapper**](https://www.cmu.edu/teaching/designteach/teach/examwrappers/) **-** Reflection opportunity given out with an exam or assignment when it is returned to help the students focus on their learning process rather than just on the score.
* [**Classroom Assessment Techniques (CATs)**](http://vcsa.ucsd.edu/_files/assessment/resources/50_cats.pdf) - Quick methods for gathering data about the student learning experience in the class. Example: **“Muddiest Point” -** Students are asked at any time during the class period to write on a half-sheet of paper what they found confusing or unclear – “What was the muddiest point in the (lecture, assignment, discussion, etc.)?”
* [**Concept Inventory**](https://en.wikipedia.org/wiki/Concept_inventory) **-** Written instrument used to assess students understanding and misconceptions in a specific content area. See also [D’Avanzo, C](file:///C%3A%5CUsers%5Cjlayne%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CM0TH6Q9U%5C.%20%20http%3A%5Csites.hampshire.edu%5Ccdavanzo%5Cfiles%5C2014%5C06%5Cdavanzo_2008.pdf).
* [**Concept Map**](http://cmap.ihmc.us/docs/theory-of-concept-maps) - Graphic approach for representing and assessing a set of content knowledge.
* [**ePortfolio**](https://www.aacu.org/eportfolios) **-** Collections of student work, assembled digitally, allowing students to demonstrate their knowledge and skill development. Especially useful for collecting evidence of student learning for outcomes difficult to assess with more traditional methods.
* [**Guided Notes**](https://ada.osu.edu/resources/fastfacts/Guided-Notes-Fact-Sheet.pdf) **-** Set of notes with key information missing that students complete prior to a class session or during a class session addressing the same material.
* **Pre-test/Post-test** - Assessment administered at the beginning and end of a course, unit, etc. to determine what students know before and after instruction/practice.
* **Prior Knowledge Reflection -** Opportunity for student to recall where they have encountered a concept previously and what they know about it.
* [**Self-Assessment**](http://www.criticalthinking.org/pages/structures-for-student-self-assessment/458) **–** Opportunity for learners to assess their own learning.

 **Glossary of Engagement, Active Learning, and Instructional Technology Terms**

**Active Review Sessions (Games or Simulations):** The instructor poses questions and the students work on them in groups. Then students are asked to show their solutions to the whole group and discuss any differences among solutions proposed.

**Brainstorming:** Introduce a topic or problem and then ask for student input. Give students a minute to write down their ideas, and then record them on the board. For example, “*What are possible safety (environmental, quality control) problems we might encounter with the process unit* *we just designed?”* could be a brainstorm topic in an engineering class.

**Capstone Project:** A capstone is a culminating experience that allows a student to bring the learning and experience of their undergraduate education together to address an issue or question that interests them in order to demonstrate mastery of an academic discipline. These experiences require students to create a project of some sort that integrates and applies what they’ve learned. The project might be a research paper, a performance, a portfolio of “best work,” or an exhibit of artwork.

**Case Studies:** Use real-life stories that describe what happened to a community, family, school, industry or individual to prompt students to integrate their classroom knowledge with their knowledge of real-world situations, actions, and consequences.

**Clarification Pauses:** This is a simple technique aimed at fostering “*active listening*”. Throughout a lecture, particularly after stating an important point or defining a key concept, stop, let it sink in, and then (after waiting a bit!) ask if anyone needs to have it clarified. Or, ask students to review their notes and ask questions on what they’ve written so far.

**Collaborative Assignment:** These assignments are designed to be completed in pairs or small groups and offer all students in the group the opportunity to practice writing, providing feedback, and presenting. Collaborative assignments are also useful tools for introducing students to recognize and incorporate different viewpoints, engage in discussion and debate, and practice teaching and learning from each other.

**Cooperative Group Assignment:** Instructor delegates an assignment for each cooperative group to complete and submit. Assignment can be a project, presentation, etc.

**Experiential Learning:** Plan site visits that allow students to see and experience applications to the theory/concepts discussed in the class.

**Field Experience/Internship:** Students participate in an industry workplace to practice real-world applications of knowledge and skills learned within their programs. If the internship is taken for course credit, students complete a project or paper that is approved by a faculty member. Internships tend to extend over the course of a semester, while field experiences are shorter and usually involve only a portion of the semester.

**First-year Seminar or Experience:** Small groups of first-year students meet with faculty regularly to expose students to faculty research and involve them in cutting-edge questions in academics. Students are encouraged to actively engage with faculty, peers, and reflection activities.

**Forum Theater:** Use theater to depict a situation and then have students enter into the sketch to act out possible solutions. If students were watching a sketch on dysfunctional teams, have students brainstorm possible suggestions for how to improve the team environment. Then, ask for volunteers to try to act out the updated scene.

**Group Evaluations:** Similar to peer review, students may evaluate group presentations or documents to assess the quality of the content and delivery of information.

**Hands-on Technology:** Students use technology such as simulation programs to get a deeper understanding of course concepts. For example, students could use simulation software to design a radio antenna with the ultimate goal of understanding electromagnetism.

**Informal Groups (cooperative groups, triad groups, etc.):** Pose a question on which each informal group will work while you circulate around the room answering questions, asking further questions, keeping the groups on task, and so forth. After an appropriate time for group discussion, ask students to share their discussion points with the rest of the class.

**Inquiry Learning:** Students use an investigative process to discover scientific or engineering concepts for themselves. After the instructor identifies an idea or concept for mastery. A question is posed that asks students to make observations, pose hypotheses, and speculate on conclusions. Then students are enlisted to tie the activity back to the main idea/concept.

**Interactions with Diverse People and Content:** Students interact with individuals, perspectives, and content that does not represent the majority viewpoint. These interactions are intended to help build students’ understanding of diverse cultures and global processes, as well as helping to foster intercultural skills.

**Interactive Lecture:** Instructor breaks up the lecture at least once per class to have all of the students participate in an activity that lets them work directly with the material. Students could observe and interpret features of images, interpret graphs, make calculation and estimates, etc.

**Jigsaw Discussion:** In this technique, a general topic is divided into smaller, interrelated pieces (e.g., the puzzle is divided into pieces). Each member of a team is assigned to read and become an expert on a different topic. After each person has become an expert on their piece of the puzzle, they teach the other team members about that puzzle piece. Finally, after each person has finished teaching, the puzzle has been reassembled and everyone in the team knows something important about every piece of the puzzle.

**Large Group Discussion:** Students discuss a topic in class based on a reading, video, or a problem. The instructor may prepare a list of questions to facilitate the discussion.

**Learning Community:** In a learning community, students place course material into a broader context, give them a social network and support, expose them to new experiences, and develop their critical thinking skills. Learning communities usually feature small group interaction, common intellectual experiences, and mentorship from peers and faculty.

**One Minute Paper:** At an appropriate point in the lecture, ask the students to take out a blank sheet of paper. Then, ask the topic or question you want students to address; for example, “*Today, we discussed conductive heat transfer. List as many of the principal features of this process as you can remember. You have one minute – go!”*

**Peer Review:** Students are asked to complete an individual homework assignment or short paper. On the day the assignment is due, students submit one copy to the instructor to be graded and one copy to their partner. Each student then takes their partner's work and depending on the nature of the assignment gives critical feedback, corrects mistakes in problem-solving or grammar, and so forth.

**Role Playing:** Here students are asked to "act out" a part. In doing so, they get a better idea of the concepts and theories being discussed. Role-playing exercises can range from the simple to complex. Example: "What would you do if a client rejects your engineering design concept based on the cost and usability of the product?”

**Self-Assessment:** Students receive a quiz (typically ungraded) or a checklist of ideas to determine their understanding of the subject. Concept inventories or similar tools may be used at the beginning of the semester or the chapter to help students identify their misconceptions.

**Service or Community-Based Learning:** Students work with community partners to obtain direct experience with issues they are studying in the curriculum and with ongoing efforts to analyze and solve problems in the community. Students have to both apply what they are learning in real-world settings and reflect in a classroom setting on their service experiences with their instructor.

**Study Abroad:** Students travel abroad with an instructor and learn while immersed in the local culture. These excursions typically range between a few weeks and a full semester.

**Think-Pair-Share:** Have students first work on a given problem individually, then compare their answers with a partner and synthesize a joint solution to share with the class.

**Undergraduate Research:** Participating in undergraduate research allows students to learn more about their future professional field, to participate in a scholarly community of like-minded students, and to develop a close working relationship with acclaimed faculty that can lead to scholarships, internships, jobs, international opportunities and admission to top graduate and professional programs.

**Writing-Intensive Course:** Students are required to practice and discuss several forms of writing intended for different audiences within their discipline. Assignments and assessments include opportunities for students to receive instructor feedback on drafts. The process enhances students writing skills by encouraging students to improve their work before turning in the final version.

Adapted from:

Active learning, n.d.; Felder & Brent, 1994; Felder & Brent, Fall 2003; Felder & Brent, Summer 1994; Paulson & Faust, n.d.).
Chris O’Neal and Tershia Pinder-Grover, Center for Research on Learning and Teaching, University of Michigan