2022-2023

Engineering Design Technology BS

Develop Knowledge And Skills

Goal Description:

Students will develop theoretical knowledge, practical skills with 3D modeling tools, and hands-on practical skills relevant to the Engineering Design Technology, including becoming proficient in using design software packages, developing critical think skills, generating additive or subtractive manufacturing prototypes, and writing technical documents.

Providing Department: Engineering Design Technology BS

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Development Of Students Knowledge And Skill

Learning Objective Description:

Students will demonstrate competency in applying product design and development tools such as Creo Parametric, AutoCAD, Solidworks (CAD) software and 3D printer to design and prototype products.

Attached Files

EDT Assessment-Plan-Summary_Learning Objective Description.pdf

RELATED ITEM LEVEL 2

ETDD 4339 Computer-Aided Drafting Productivity

Indicator Description:

All students enrolled in the program are required to complete ETDD 4339 and successfully demonstrate effective use of resources and acceptable designing skills. Each semester, seven randomly selected assignments from five randomly selected students enrolled in the course will be reviewed by faculty members with expertise in the field. Faculty members will score the assignments using a scale of 1 - 5 with 3 "meets expectations," 4 "exceeds expectations," and 5 "far exceeds expectations."

Criterion Description:

There is a general consensus among faculty members that at least 70% of the students enrolled in ETDD 4339 will perform at an acceptable level with a score of 3.5 (meets standards) or higher.

Assignments:

There are two types of assignments: In-class Labwork Assignments (Classwork CW) and Homework Assignments (HW). CW assignments are given based on the techniques discussed in the class. Unless otherwise specified by the instructor, in-class lab assignments must be completed in the class meeting hours.

Final Grading: Final grades will be determined by assigning the following weighting to each area:

Attendance and Observed Performance:	10%
Homework Assignments:	20%
In-class (Classwork) Assignments:	10%

Group Project: 10%
Mid Term Exam (15%)/Quiz (10%): 25%
Final Exam: 25%

Grading Scale

A (90-100)
B (80-89)
C (70-79)
D (60-69)
E (<60)

Part Grading				Total
Sketch				
	Weak Dimensions	25%		100%
	Broken & Overlapping lines	25%		
3D Model				
	3D Tools	50%		

Drawing Grading				Total
Views				
	Orthogonal	12.50%	50%	100%
	Projected	12.50%		
	Sections, Aux, Detail	25%		
Dimensions				
	Dimensions	25%	50%	
	Datums, Axis	25%		

Assembly Grading				Total
Assembly				
	Constraints	12.50%	50%	100%
	Orientation	12.50%		
	Sections	25%		
Assembly Drawing				
	Views	25%	50%	
	BOM	25%		

Findings Description:

ETDD 4339 – Advanced CAD was offered in Spring 2022, Fall of 2022 and in Spring 2023. 20 students were enrolled in the spring 2022 semester 75% received a grade of A, one student B, and one student received C. Three students received F, which accumulates to 85% higher than 3.5 or better, completing all the required assignments in the class. Three students received failing score due to missing class sessions or not submitting the required assignments on time.

Table ETDD 1. Spring 2022 Term score breakdown

10	20	10	10	15	10	25		
CW	HW	ATT	Q	MT	GP	Final		Term Grade [T
1.70833	2.22222	10	5	0	0	0		18.9306 F
2.48808	4.78556	10	3.5	9.6	0	25		100 A
0.825	1.88889	10	0	0	0	0		12.7139 F
8.86375	18.6733	10	9.4	11.85	9.491	25		100 A
8.92383	18.8133	10	9.9	14.25	9.491	25		100 A
6.02433	7.66689	10	6	7.7	10	23.7083		71.0996 C
9.00842	19.6373	10	9.95	15	10	25		100 A
5.68792	9.74467	10	5.2	7.95	0	25		100 A
1.89675	0.48133	10	0	1.5	0	0		13.8781 F
9.37717	18.1098	10	8.6	12.75	9.491	24.0208		92.3488 A
9.5335	18.7409	10	9	14.7	9.491	9.29167		80.7571 B
5.9255	13.0578	10	9.9	12.24	0	25		100 A
7.221	9.914	10	5	11.595	0	25		100 A
8.47958	13.4444	10	9.9	12.9	0	25		100 A
7.1305	11.9078	10	10	14.799	10	25		100 A
8.00967	10.1373	10	10	14.7	0	25		100 A
4.85825	5.76289	10	4.6	14.4	10	25		100 A
3.58325	6.948	10	4.7	11.8995	10	25		100 A
7.43692	16.6989	10	10	10.9995	0	25		100 A
5.10708	8.16533	10	5	4.9995	0	25		100 A

For the Fall 2022 semester out of 12 registered students, no student received failing scores for the term. Table ETDD 2 is a breakdown of term scores for Fall 2022

Table ETDD 2. Fall 2022 score breakdown

10%	10%	20%	10%	15%	10%	25%	100%	
ATT	CW AVG	HW AVG	Group Project	Mid Term	Quiz Test	Final Exam	Total Grade	Grade
10	9.78796	10.1733	10	12	9.9	25	97.46	A
0	8.47963	14.3467	10	4.5	8.2	25	81.13	B
0	4.13889	8.42222	10	0	5	25	63.16	D
0	9.95185	14.8	10	7.5	7.5	25	85.35	B
0	5.68333	7.33333	10	3.75	5	25	67.37	D
0	5.48333	6.66667	10	0	5	25	62.75	D
0	9.26852	18.8933	10	9.75	7.5	25	91.01	A
0	8.84167	17.44	10	11.7	8.5	25	92.08	A
0	4.28889	6.66667	10	0	5	25	61.56	D
0	8.0213	15.6978	10	6	5	25	80.32	B
0	9.80278	20.08	10	14.25	9.75	25	99.48	A
0	7.28426	9.33333	10	4.5	5	25	71.72	C

For the Spring 2023 semester out of 15 registered students, two students received failing grades, while the remaining students received passing grades for the term. The total passing student percentage is 86.6%. Table ETDD 3 is a breakdown of term scores for Spring 2023. The two students that received failing scores came to class for three weeks at the beginning of semester and stopped attending as well as submitting their class assignments. Despite multiple emails, the students did not respond back.

Table ETDD 3. Spring 2023 score breakdown.

10%	10%	20%	10%	15%	10%	25%	100%	
ATT	**CW AVG**	**HW AVG**	**Group Project**	Mid Term	**Quiz Test**	Final Exam	**Total Grade**	Grade
10	10	20	0	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	5.00	F
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	35.00	F
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A
10	10	20	10	**15**	10	**25**	100.00	A

RELATED ITEM LEVEL 3

ETDD 4339 Computer-Aided Drafting Productivity

Action Description:

The findings revealed that students are being successful in ETDD 4339 Computer-Aided Drafting Productivity course. Success is determined by professional standards of timely assignment submittals, group term projects, and professional quality presentations. The instructor does note that students are having difficulty with time management techniques by being overwhelmed with the college experience. To assist students the instructor will continue to send reminder emails for the assignments and continue uploading recorded lecture notes on the Blackboard.

Develop Professional Skills

Goal Description:

Students completing the BS in Engineering Design will demonstrate skills necessary to compete in the professional marketplace through an internship as well as develop practical hands-on prototypes throughout the courses.

Providing Department: Engineering Design Technology BS

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Demonstrate Professional Skills

Learning Objective Description:

This is a computer applications course for design and drafting and introduces students to the techniques used to produce technical models/drawings. Students will learn drafting practices and how to apply them using computer-aided software. Prior knowledge of drafting software and/or prior experience of working with computers is advantageous, but not required/expected. Students will produce technical drawings using various computer design and drafting practices. Concepts of 2D drawings will be covered along with an introduction to three-dimensional parametric modeling. The intent is to develop fundamental knowledge and skills that are conceptually applicable to any computer-aided design (CAD) system.

RELATED ITEM LEVEL 2

ETEC 4391 Internship Evaluation

Indicator Description:

All students enrolled in the program must complete ETEC 4391 in their third or final year of enrollment. ETEC 4391 addresses key concepts and skills, as well as practical demonstrations of competency relevant to the field of each program in the Department of Engineering Technology. Each semester interns will be evaluated by their internship supervisor and by their faculty supervisor on a faculty-developed rating scale.

All students enrolled in the program must complete ETEC 4391 in their junior or senior year of enrollment, and the students need to meet the below student eligibility to register ETEC4391.

1. Minimum semester hours - 32 hrs. Including 15 within the academic major/minor. Some internships may specify courses / content to have been completed.
2. Must be a student in good academic standing at SHSU.
3. Minimum grade of “C” or higher in ENG 1301 and 1302 or equivalent.
4. Transfer students become eligible upon the successful completion of one full-time semester if all other eligibility requirements are fulfilled and apply according to instructions on announcements.
5. Special information regarding Industrial Technology Trades and Industry Certification Program internships (ETEC 4391) - Due to the unique structure of this program, the above listed eligibility requirements do not apply. See the Trades and Industry Certification Program coordinator regarding specific requirements for this program.

The students in ETEC 4391 in Summer 2019 were evaluated by the following detail rubric:

COURSE EVALUATION – GRADING: 100 POINT SCALE

Weekly Reports [10 weekly reports]	10 Points
Summary of Syllabus	5 Points
Resume	5 Points
LinkedIn	5 Points
EMAIL Communication Skills	5 Points
ONLINE Video Review and Summary	10 Points
FINAL SUMMARY PAPER	20 Points
FINAL SUMMARY PRESENTATION	20 Points
Supervisor’s Evaluation	15 Points
Supervisor’s working hour confirmation letter	5 Points
TOTAL	100 Points

FINAL LETTER GRADE

A = +90 Points

B = 80 – 89 Points

C = 70 – 79 Points

D = 60 – 69 Points

F = under 60%

Criterion Description:

It is expected that at least 85% of the students enrolled in ETEC 4391 will achieve above average standard (B or higher) of performance on the supervisor evaluation rating scale and the final letter grade. In general, if the students in ETEC 4391 miss to submit any assignments, the assignments not submitted will impact their final grades by two letter grades.

All assignments should be submitted to Blackboard by the specific due dates as below.

Assignments	Due Date
10 Weekly Reports (Weekly Logs) (6/1/2022 – 8/2/2022: 10 weeks)	By Midnight, Every Sunday i.e. The 1st Weekly Report (5/30/2022-6/3/2022) → By Midnight, 6/5/2022 (Sunday)
Summary of Syllabus	6/5/2022
Resume	6/5/2022
LinkedIn	6/12/2022
ONLINE Video Review and Summary (1 Video)	6/19/2022
EMAIL Communication Skills	No due date. (Based on your email communication between a student and an instructor)
FINAL SUMMARY PAPER	7/24/2022
FINAL SUMMARY PRESENTATION	7/24/2022
Supervisor's Evaluation	7/24/2022
Supervisor's working hour verification letter	7/24/2022

Weekly Reports are due Midnight, Every Following Sunday:
Follow and use the format as posted on Blackboard.
Don't modify the template and fill in every required information on the format.
Please describe your daily activities as specific as you can like the sample.
If your internship begins before the semester, please fill out your daily activities to the attached template and submit your weekly reports to the first week of summer semester.
For instance, if your internship begins 5/15/2023, please write 2 weekly reports from 5/15 to 5/19 and from 5/22 to 5/26 and submit 2 weekly reports with the 1st weekly report (5/29-6/2) to the folder of the 1st weekly report.

Resume:
Example will be on Blackboard – follow the example closely. Upload all your Weekly Reports to ETEC4391-1 on Blackboard before or on due date posted on Blackboard.

LinkedIn Profile:
You will develop a professional LinkedIn profile as a requirement for ETEC 4391, and you should update your profile including your current internship. And then please link your profile to Dr. Min Jae Suh and the LinkedIn page of "Sam Houston State University - Engineering Technology".

Summary of Syllabus:
This course is an online course, and the course instructor confirms that students read a course syllabus carefully or not. Students summarize key points or core contents after reading the course syllabus.

Email Communication Skills:
When you send your email properly and professionally to a course instructor. One of the purposes of this courses is to improve your professional commination skills. Additionally, the email is the best way to communicate between the instructor and the student because this is ONLINE courses. Please check your school email once a week at least!

Video Review and Summary:

An announcement/notification will be posted to ETEC4391-1 on Blackboard including the link to the video. You will watch the videos and summarize the video topics. 1-page summary should be uploaded before or on the due date to Blackboard.

Supervisor's Evaluation:

Download the Supervisor Evaluation from Blackboard. Have your immediate supervisor complete the evaluation and email it to Dr. Min Jae Suh, mjs068@shsu.edu

Supervisor's Working Hour Verification Letter:

The letter should include student's total working hours at a jobsite to verify complete student's working hours and potential future working hours to meet 300 working hours or 600 working hours. The letter should be prepared by student's supervisor or HR and include his/her signature in the letter. There is no specific format, but you can find samples for this letter.

Based on your working hour verification letter, I can confirm you can make 300 working hours or 600 working hours during your internship before or after Summer 10 Semester.

Please see the samples!

Final Summary Paper:

Submit a 2-3 page, 1.5-spaced paper. The paper should describe the history of the company in which you are interning, the job title and description for your position, the actual activities / duties / job tasks you completed while interning and your personal thoughts of the internship such as pros and cons.

Final PPT or Video Presentation:

Create a Power Point presentation that illustrates your internship experience. You will need to include pictures showing the projects / activities you performed.

Upload the presentation file to Blackboard on or before the due date.

OR

Create a 4-5 minute video that describes your experience using a self-recording.

For both of the presentations you need to identify the company, job title, skills you learned, location, travel expected, activities and/or duties you preformed, and pros and cons of your internship. Also include examples of the classes you have taken that supported your experience and skills you think should be included or added to the courses of your major.

Findings Description:

There were 67 Engineering Technology students enrolled in ETEC4391-01 and/or 02 in Summer 2022. The number of students in ETEC4391-01 and/or 02 was gently increased compared to the previous year, Summer 2021. Most students successfully completed this course in Summer 2022. The summary of our findings in relation to the learning objectives is shown in the below table.

Summarized Students' Course Achievements

Directly supported learning objectives and student outcomes:	-Students completing the BS in Engineering Technology will demonstrate skills necessary to compete in the professional marketplace through an internship. 1.Work in an Industrial Environment. 2.Work in either a Field Management, a Construction Management, a Superintendent Management, Project Management, Safety Management, or combinations of responsibilities. 3.Exhibit characteristics associated with successful employment in industry.
	-Students will establish a professionalism to be ready to start their successful careers in each professional field through an internship. 4. Develop the required reports and maintain progressive reviews that identify the progress being made on the project. 5. Supervise workers in the various trades that are under their responsibilities. 6. Write change orders on specification sheets. 7. Prepare project documents and resources to support the activities for a project.
	-Students will improve their written, oral, and graphical communication skills with stakeholders in each professional field to maintain professional working relationships. 8.Communicate with subcontractors and maintain professional working relationships 9.Write and maintain punch list and other required documentation.

Student's internship supervisors submitted their supervisor's evaluations with their evaluation rating scale and observations to a course instructor, and the evaluation rating was determined by immediate student's internship supervisor using 5 rating scale from A to F and it was based on the performance of internship student at their jobsite during their internship program. 95.6% of internship students received 'A' from their internship supervisors and 4.4% of internship students received 'B'. Therefore, 100% of students in this course achieved A or B at their internships and the percent was higher than the target percentile of ETEC4391-1 and/or 2 in summer 2022.

Most of students completed the course in Summer 2022 and they successfully received above average final letter grade at the end of semester. The summary of the distribution of final letter grade is as follows: 95.5% of students in ETEC4391-01 and/or 02 students achieved above the average final letter grade, and the percentile is higher than the target of criterion, at least 85% of the students enrolled in ETEC 4391 will achieve above average standard ('B' or higher). 3.0% of students achieved 'C' and 1.5% of students achieved 'D'. Overall, the percentile of students who received above average standard (B or higher) was increased in Summer 2022.

RELATED ITEM LEVEL 3

ETEC 4391 Internship Evaluation

Action Description:

To improve of this course, a course instructor considers student's professionalism at their workplaces. That is the reason why the instructor added a new assignment, email communication, to the existing rubric, and it was a useful assessment to improve student's professional writing communication skill. The target percentile of criterion will be increased by 90 percent from current 85 percent.

Update to Previous Cycle's Plan for Continuous Improvement Item

Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

Closing Summary:

The program faculty will continue to address the observations regarding the needs of an additional dedicated course addressing construction law and recruitment. Additional full-time faculty with the increasing number of students entering the program. Newly hired faculty for ETEC that teach ETDD 1361 will collaborate with other program faculty and will attend the bimonthly meetings to observe and monitor the consistency of ETDD 1361.

Update of Progress to the Previous Cycle's PCI:

The BS in Construction Management published new course curriculum including a few new courses such as Construction Cost Estimating, Construction Scheduling, Construction Project Management, and others. The revised curriculum can provide more educational options to students in Construction Management and meet the current industry needs. In addition, Construction Management program hired two tenure-track faculty, one full-time lecturer, and one part-time lecturer and they are teaching existing and new courses of Construction Management.

New Plan for Continuous Improvement Item

Closing Summary:

The BS in Engineering Design Technology uses BS in Construction Management's internship course that keeps updating the course curriculum to meet the ABET ANSAC requirements, the needs of students, and the demand of construction industry. Concurrently, the program tries that all equipment, manpower, and other needs will be provided to implement revised curriculum for students in Construction Management without any challenges or barriers.