

Annual Departmental Report 2021-2022

Program Information

Program/Department: Engineering Technology

Department Chair: Dr. Nirajan Mani

Department Assessment Committee Contact: Dr. Abdel Gabar Mustafa (Other Members: Dr. Hong Yu, Dr. Soumitra Basu)

This document is to be kept in the department and an electronic file is due to the AVP of Institutional Research & Planning by June 1, 2022.

A. Departmental Special Section for AY21-22

Department Lessons Learned and Accomplishments

Department Lessons Learned:

- We are still in the transition stage of implementing new programs curriculum. We need to better coordinate with FSU General Education committee to better accommodate the General Education requirements into our new two programs (Engineering Technology and Applied Science and Technology (ENGT) Programs). Also, there is a need to coordinate our Lab courses designation with the new FSU General Education requirements.
- Students are facing difficulties while registering in Web 4 as result of transition from the old program (Industrial Technology (ITEC)) to the new ones (Engineering Technology and Applied Science), most of these difficulties got to do with streamlining of the registration process to accommodate the transition. Close and better coordination with the Registrar is needed to resolve these registration issues.

Accomplishment:

Some of the major accomplished during the academic year (21-22):

- Formed Department Assessment Committee and prepared self-study report for the Occupational/Vocational Education program for the first time.
- We successfully completed a new faculty search.
- Organized an Industry Partners workshop and formed an Engineering Technology Advisory Board.
- Organized ITEC/ENGT Alumni Meeting with an objective of tracking our grad students' success and maintain/improving their relationship with the Department and FSU.
- Obtained approval for Production Technology Certificate Program from AUC and for M.S. in Construction Management program from GCE

B. Program Learning Outcomes (PLOs) (Educational Objectives)

I. List of PLOs and the timeline for assessment.

PLO #	PLO – Stated in assessable terms	Where are the learning outcomes for this level/program published? (please specify) Include URLs where appropriate	Timing of assessment (annual, semester, bi-annual, etc.)	When was the last assessment of the PLO completed?
1.	Identify, formulate, and solve broadly defined engineering or technical problems by applying knowledge of mathematics, science, engineering, and technical topics to areas relevant to the discipline	University/Department website https://www.fitchburgstate.edu/academics/academic-schools/school-health-and-natural-sciences/engineering-technology-department	Annual	In-process
2.	Formulate or design systems or components, processes, procedures or programs to meet desired needs	University/Department website	Annual	In-process
3.	Develop and conduct standard tests, measurements, and experiments	University/Department website	Annual	In-process
4.	Analyze and interpret data and results using scientific judgment	University/Department website	Annual	In-process
5.	Apply written, oral, and graphical communication in broadly-defined technical and non-technical environments and able to identify and use appropriate technical literatures	University/Department website	Annual	In-process

6.	Function effectively as a member as well as a leader on technical teams to establish goals, plan, and tasks, meet deadlines, and analyze risk and uncertainty.	University/Department website	Annual	In-process
7.	Understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts.	University/Department website	Annual	In-process

II. PLO Assessment (Please report on the PLOs assessed and/or reviewed this year. Programs should be assessing at least one each year.)

Using the table below, list and briefly describe the **direct method(s)** used to collect information assessing whether students are learning the core sets of knowledge (K), skills (S) and attitudes (A) identified as essential.

PLO # (from above)	Assessment description (exam, observation, national standardized exam, oral presentation with rubric, etc.)	When assessment was administered in student program (internship, 4 th year, 1 st year, etc.)	To which students were assessments administered (all, only a sample, etc.)	What is the target set for the PLO? (criteria for success)	Reflection on the results: How was the “loop closed”?
1, 2, 3, 4, 5, 6, 7	Homework/Assignment, Mid-term, quiz, final exams, oral presentation	Tied to specific course offering schedule	All	Successful completion of the assigned written measures and activities	Findings used to update instructions/ curriculum
2, 7	Capstone, Internship	Capstone: final year Internship: 3 rd / 4 th year	3 rd and final year students	Successful completion of the capstone project and presentation of the same to Faculty at the Department and other University venues.	Findings used to update instructions/ Future capstone projects

Summary of Findings: Briefly summarize the results of the PLO assessments reported in Section II above combined with other relevant evidence gathered and show how these are being reviewed/discussed. How are you “closing the loop”?

Reflection Prompt	Narrative Response
<p>Other than GPA, what data/evidence is used to determine that graduates have achieved the stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)</p>	<ul style="list-style-type: none"> - Department developed grading and checklist for capstone presentation and Department project completions. - Tracking of licensure examinations success - Feedback from faculty and staffs from other department for students works during Undergraduate Research Conference and Department Project Competition - Tracking Students success during Career fair and their ability to obtain internship, part time and full-time jobs offers from our industry partners and others
<p>Who interprets the evidence? What is the process? (e.g. annually by the curriculum committee)</p>	<ul style="list-style-type: none"> - Annually by the Curriculum and Assessment Committees - Industry Partners (Feedback) - Alumni (feedback)
<p>What changes have been made as a result of using the data/evidence? (close the loop)</p>	<ul style="list-style-type: none"> - Updated programs curriculum - In progress

C. Assessment Plan for Program/Department

- I. Insert the program or department Assessment Plan
- II. Explain any changes in the assessment plan including new or revised PLOs, new assessments that the program/department plans to implement and new targets or goals set for student success.
- III. If you do not have a plan, would you like help in developing one?

X Yes

D. Program Review Action Plan or External Accreditation Action Letter/Report

Annual Reflection/Follow-up on Action Plan from last Program Review or external accreditation (only complete the table that is appropriate for your program)

I. Programs that fall under Program Review:

- i. Date of most recent Review: November 5, 2020 (ITEC Program review by the external reviewer) and spring/summer 2022 (Occupational/Vocational Education program review)
- ii. Insert the Action Plan table from your last Program Review and give any progress towards completing the tasks or achieving targets set forth in the plan.

Specific area where improvement is needed	Evidence to support the recommended change	Person(s) responsible for implementing the change	Timeline for implementation	Resources needed	Assessment Plan	Progress Made this Year
Curriculum update per new general education curriculum	Existing curriculum documents	ENGT Curriculum Committee members	Spring 2023	Faculty and support staff	In progress	Submitted some AUC proposals as per new updated curriculum
Laboratory upgrade	Current labs conditions	ENGT department	Fall 2023	Need financial support from University	In progress	Purchased some equipment

				Administration to purchase equipment and space upgrade and management		and still needed more

iii. If you do not have an action plan, would you like help in developing one based on your last program review and needs of the program?

X Yes

II. Programs with external Accreditation:

- i. Professional, specialized, State, or programmatic accreditations currently held by the program/department.
- ii. Date of most recent accreditation action by each listed agency.
- iii. Date and nature of next review and type of review.

List key issues for continuing accreditation identified in accreditation action letter or report.	Key performance indicators as required by agency or selected by program (licensure, board or bar pass rates; employment rates, etc.)(If required.)	Update on fulfilling the action letter/report or on meeting the key performance indicators.

E. Departmental Strategic Initiatives

Accomplished Initiatives AY 21-22 <small>Add more rows as needed</small>	Corresponding Strategic Plan Goal & Strategy <small>Goal # followed by Strategy # ex: 1.3</small>	Indicate if a Diversity, Equity and Inclusiveness (DEI) Goal
Submitted AUC course proposals	Integrate the General Education curriculum with ENGT programs curriculum; improve overall curriculum	<input type="checkbox"/>
Submitted Production Technology Certificate program proposals	Develop a relationship with industry by offering industry demanded program	<input type="checkbox"/>
Submitted M.S. in Construction Management program proposals	Recruit national and global students for online Master’s program	<input type="checkbox"/>
Outreached high schools	Improve enrollment	<input type="checkbox"/>
Industry Partner Workshop	Feedback collection from industry; job or internship assurance for our students	
Outreach Alumni Meeting	Feedback collection from alumni; track success of alumni, and maintain relationship with our graduates	
Industry Advisory Board	Organize department-wide industry advisory board meeting and bridge a gap between industry and academic programs	

Planned Initiatives for AY 22-23 <small>Add more rows as needed</small>	Associated Strategic Plan Goal & Strategy <small>Goal # followed by Strategy # ex: 1.3</small>	Indicate if a Diversity, Equity and Inclusiveness (DEI) Goal
Concentrations realignment and implementation of updated curriculum including general education curriculum	Accreditation/certification and enrollment management; Forge innovative paths to knowledge acquisition, career readiness, social mobility, and lifelong learning (Strategic goal # 1)	<input type="checkbox"/>
Add Civil Engineering Technology Concentration	Provide opportunity to students to enter in the civil engineering technology sector; Steward physical and financial resources responsibly and navigate a path to long-term organizational sustainability (Strategic goal # 6)	<input type="checkbox"/>
Laboratory Upgrade and lab designation course proposals	Accreditation/certification and enrollment management; Establish inclusive excellence, innovation, and environmental stewardship as signature strengths (Strategic goal # 4); Assert our distinctive value proposition and institutional learning outcomes boldly and widely (Strategic goal # 5)	<input type="checkbox"/>
Conduct exit survey and alumni survey	Collect feedback from graduating students and alumni; Become a model student-ready university and narrow the achievement gap (Strategic goal #2)	<input type="checkbox"/>

F. Departmental Reflection:

Take this section to reflect on--

1) Initiatives that you may be considering for 22-23 academic year that you did not already capture above.

ABET Accreditation Application process.

2) Any other thoughts or information that you would like to share.

A great deal of work and compromise was required to develop to complete the transition from the old ITEC programs to the current Engineering Technology programs. With the transition accomplished, we have turned to determining how best to implement the assessment of the objectives of the new program to benefit our students. Progress had been made, but much remains to be done.

The department is improving its relationship with industry partners. And we are trying our level best to address enrollment issues as well as align our curriculum learning outcomes to those of ABET accreditation.

The department is currently undertaking the following initiatives.

- Realigning the department's existing concentrations and curriculum and submit application for ABET accreditation
- Develop detailed systematic assessments of the department's programs and courses.
- Add a Civil Engineering Technology Concentration
- Establish Construction Management Graduate Program and prepare marketing strategy for this program

It is recognized that time is of the essence and we are, therefore, aiming to accomplish the above mentioned initiatives by the Spring of 2023.