DEPARTMENT OF HIGHER EDUCATION & WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:
05/02/2022

Institution
Missouri State University-West Plains

Site Information

Implementation Date:
8/1/2022 12:00:00 AM

Added Site(s):

Selected Site(s):

Missouri State University-West Plains, 128 Garfield, West Plains, MO, 65775

CIP Information

CIP Code:
159999

CIP Description:
Any instructional program in engineering technologies and engineering-related fields not listed above.

CIP Program Title:
Engineering Technologies and Engineering-Related Fields, Other

Institution Program Title:
Engineering Technology

Degree Level/Type

Degree Level:
Associate Degree

Degree Type:
Associate of Science

Options Added:

Collaborative Program:
N

Mode of Delivery

Current Mode of Delivery

Hybrid

Student Preparation

Special Admissions Procedure or Student Qualifications required:
none

Specific Population Characteristics to be served:
n/a

Faculty Characteristics

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Special Requirements for Assignment of Teaching for this Degree/Certificate:
same as current AS Pre-Engineering

Estimate Percentage of Credit Hours that will be assigned to full time faculty:
same as current AS Pre-Engineering

Expectations for professional activities, special student contact, teaching/learning innovation:
same as current AS Pre-Engineering

Student Enrollment Projections Year One-Five

Year 1	Full Time: 17	Part Time: 5	
Year 2	Full Time: 16	Part Time: 5	
Year 3	Full Time: 16	Part Time: 5	Number of Graduates: 8
Year 4	Full Time: 16	Part Time: 5	
Year 5	Full Time: 16	Part Time: 5	Number of Graduates: 12

Percentage Statement:
n/a

Program Accreditation

Institutional Plans for Accreditation:
same as original AS Pre-Engineering proposal

Program Structure

Total Credits:
60

Residency Requirements:
n/a

General Education Total Credits:
42

Major Requirements Total Credits:
32

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
MTH 292	3	Multivariate Calculus
CSC 125	4	Introduction to C++ Programming
TEC 100	3	Introduction to AC and DC Electricity
PHY 203	5	Foundations of Physics I
MTH 261	5	Analytic Geometry and Calculus I
PHY 204	5	Foundations of Physics II
TEC 248	3	Fluid Power

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TEC 245	3	Mechanical Systems
MTH 280	5	Analytic Geometry and Calculus II
EGR 297	1	Engineering Capstone
TEC 240	3	PLCs & Sensors
EGR 100	1	Careers in Engineering and Technology
EGR 110	3	Introduction to Engineering Design
TEC 180	3	Fundamentals of Mechatronics
CIS 201	3	Computer Applications in Business

Free Elective Credits:
6

Internship or other Capstone Experience:
same as current AS Pre-Engineering

Assurances

I certify that the program is clearly within the institution's CBHE-approved mission. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the public institution, as set forth in the public institution's approved plan or plan update.

I certify that the program will be offered within the proposing institution's main campus or CBHE-approved off-site location.

I certify that the program will not unnecessarily duplicate an existing program of another Missouri institution in accordance with 6 CSR 10-4.010, subsection (9)(C) Submission of Academic Information, Data and New Programs.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the program can be launched with minimal expense and falls within the institution's current operating budget.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

First and Last Name: CARRIE
STEEN

Email: carriesteen@missouristate.edu

Phone: 417-255-8083

Curriculum Request Form– Program Proposal

Complete the following form if you are submitting a new program, deleting a program or revising a program. If you need to revise a course (e.g., change a change a course's prerequisite), delete a course from the catalog (not from a program) or adda new course to the catalog, please complete the "Course Proposal" Form.

Program Change: Add New Program* __x__   Delete Program _____   Revise Program _____

Originator: Cathy Boys   Date: 11/12/2021   Catalog Effective Date: Fall 2022

Department: Engineering Technology   Division: Applied Sciences and Technology

Name of Program: AS Engineering Technology – Mechatronics

REASONS FOR PROGRAM PROPOSAL (*If new program, fill out the Supporting Data Form on last two pages as well)

- We currently have an AS in Pre-Engineering.
- We propose to create an AS in Engineering Technology with two options: Pre-Engineering and Mechatronics.
- The Mechatronics option will provide students with knowledge and skills to prepare them to work as a mechatronics technician or for transfer to a four year engineering technology program.
- We will delete the current AS in Pre-Engineering, effective Fall 2023 once students have either completed that degree or moved to the new degree.
- This option will be best for students interested in a bachelors degree in engineering technology or interested in entering the workforce as a mechatronics technician after completion of the degree..
- Graduates will receive seven (7) NC3 Festo Industry 4.0 certifications and one (1) Trane data analytics certifications. These industry recognized certifications are valuable credentials for graduates.

SUMMARY OF PROGRAM REVISIONS (enter specific degree requirements on next page also)

Please see the academic map for program details.

Consideration by Division Chair:
Remarks: _____
Approved: __x__ Not Approved: _____ Division Chair: Cathy Proffitt Boys CPB   Date: 11/12/21

Action by Curriculum Committee (can act only in a duly convened meeting):
Remarks: _____
Approved: __✔__ Not Approved: _____ Chair: Melinda Denton   Date: 12/17/21

Action by Faculty Senate:
Remarks: _____
Approved: __✔__ Not Approved: ___ Chair: Gary Phillips   Date: 4-25-22

Consideration by Administration:
Remarks: _____
Approved: __✓__ Not Approved: _____ Dean: Michael Oct   Date: 4-25-22

Approved: __✓__ Not Approved: _____ Chancellor: _____ Date: 4-25-22

* Supporting Data must accompany request for a New Program. Fill out the form on the last two pages.

Missouri State University-West Plains

Engineering Technology

Missouri State University
WEST PLAINS

Associate of Science in Engineering Technology - Mechatronics

The Associate of Science in Engineering Technology - Mechatronics Option is a transfer degree with specific mathematics, science, computer science and engineering courses needed to facilitate transfer. This degree also prepares students for immediate entry into the workforce. This academic guide is based on the 2022-2023 Missouri State University-West Plains Catalog. The time to complete the degree will vary, depending on remediation, summer enrollment, number of classes taken per semester, etc.

Academic Map 2022-2023

Degree Requirements

Written and Oral Communications	Credit Hours
ENG 110 Writing I	3
Select three (3) credit hours	
ENG 210 Writing II: Academic Writing or	
ENG 221 Writing II: Writing for the Professions	3
COM 115 Fundamentals of Public Speaking	

Natural Sciences	Credit Hours
CHM 160 General Chemistry I	4
CHM 161 General Chemistry I Laboratory	1

Social and Behavioral Science	Credit Hours
Economics: Select three (3) credit hours	
ECO 155 Principles of Macroeconomics	
ECO 165 Principles of Microeconomics	3
Civics: Select three (3) credit hours	
HST 121 Survey of US History to 1877	
HST 122 US History Since 1877	3
PLS 101 American Democracy and Citizenship	

Institutional Requirements	Credit Hours
CIS 101 Computers for Learning	3
IDS 110 Student Success	2

Engineering Technology Requirements	Credit Hours
EGR 100 Careers in Engineering and Technology	1
EGR 110 Introduction to Engineering Design	3
EGR 297 Engineering Capstone	1
CSC 125 Introduction to C++ Programming	4

Mechatronics Requirements	Credit Hours
CIS 201 Computer Applications in Business	3
MTH 261 Analytic Geometry and Calculus I	5
TEC 100 Introduction to AC and DC Electricity	3
TEC 180 Fundamentals of Mechatronics	3
TEC 240 PLCs & Sensors	3
TEC 245 Mechanical Systems	3
TEC 248 Fluid Power	3
Electives: Select 6 credit hours (Must be approved by Engineering Department)	6
AS in Engineering Technology-Mechatronics Option Total	60

Recommended Two-Year Plan

Term 1 (Fall)

Course #	Credit Hours
CIS 101	3
EGR 100	1
EGR 110	3
ENG 110	3
IDS 110	2
TEC 100	3
Total	**15**

In addition CIS 101, EGR 100, EGR 110, ENG 110. Complete MTH prerequisites, if needed, in place of ENG 110.

Term 2 (Spring)

Course #	Credit Hours
CSC 125	4
COM 115/ENG 210/ENG 221	3
Civics	3
TEC 240	3
TEC 248	3
Total	**16**

Milestone: Complete MTH prerequisites, if needed, in place of Civics.

Term 3 (Fall)

Course #	Credit Hours
CHM 160	4
CHM 161	1
TEC 180	3
ECO 155	3
TEC 245	3
Total	**14**

Milestone: Complete MTH prerequisite, if needed. Apply for admission to 4 year university.

Term 4 (Spring)

Course #	Credit Hours
CIS 201	3
EGR 297	1
MTH 261	5
Electives	6
Total	**15**

Milestone: Apply to graduate. Send final transcripts to 4 year university.

Degree Notes:
- ECO 155 is recommended for the Mechatronics option.
- Electives must be approved by the department.
- Students should confirm the transferability of courses with their transfer university before completing courses at MSU-WP.

Milestone Notes:
- Milestones are a major step in the completion of the degree. Each milestone must be met in order to advance to the next stage of education.
- Milestone courses should be completed in the designated semester.
- All milestone courses must be completed with a C or higher.
- Students are encouraged to apply for graduation early in their last semester.

Curriculum Request Form– Program Proposal

Complete the following form if you are submitting a new program, deleting a program or revising a program. If you need to revise a course (e.g., change a change a course's prerequisite), delete a course from the catalog (not from a program) or adda new course to the catalog, please complete the "Course Proposal" Form.

Program Change: Add New Program* __x__   Delete Program ____   Revise Program ____

Originator: Cathy Boys   Date: 11/12/2021   Catalog Effective Date: Fall 2022

Department: Engineering Technology   Division: Applied Sciences and Technology

Name of Program: AS Engineering Technology – Pre-Engineering

REASONS FOR PROGRAM PROPOSAL (*If new program, fill out the Supporting Data Form on last two pages as well)

- We currently have an AS in Pre-Engineering.
- We propose to create an AS in Engineering Technology with two options: Pre-Engineering and Mechatronics.
- The AS Engineering Technology – Pre-Engineering is the same as the current AS Pre-Engineering, with some minor revisions.
- We will delete the current AS in Pre-Engineering, effective Fall 2023 once students have either completed that degree or moved to the new degree.
- This option will be best for students interested in a bachelors degree in engineering.

SUMMARY OF PROGRAM REVISIONS (enter specific degree requirements on next page also)

Please see the academic map for program details.

Consideration by Division Chair:
Remarks: _____
Approved: __x__ Not Approved: ____ Division Chair: Cathy Proffitt Boys _CPB_   Date: 11/12/21

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Approved: __X__ Not Approved: ____ Chair: _Melinda Denton_   Date: 12/17/21

Action by Faculty Senate:
Remarks: _____
Approved: __✓__ Not Approved: ____ Chair: _____   Date: 4·25·22

Consideration by Administration:
Remarks: _____
Approved: __✓__ Not Approved: ____ Dean: _Michael W._   Date: 4-25-22

Approved: __✓__ Not Approved: ____ Chancellor: _____   Date: 4-25-22

* Supporting Data must accompany request for a New Program. Fill out the form on the last two pages.

Missouri State University-West Plains

Engineering Technology

Missouri State University
WEST PLAINS

Associate of Science in Engineering Technology - Pre-Engineering

The Associate of Science in Engineering Technology - Pre-Engineering Option is a transfer degree and specific mathematics, science, computer science and engineering courses, as well as some general education courses needed to facilitate transfer. This academic guide is based on the 2022-2023 Missouri State University-West Plains Catalog. The time to complete the degree will vary, depending on remediation, summer enrollment, number of classes taken per semester, etc.

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Engineering Technology Requirements	Credit Hours
EGR 100 Careers in Engineering and Technology	1
EGR 110 Introduction to Engineering Design	3
EGR 297 Engineering Capstone	1
CSC 125 Introduction to C++ Programming	4

Pre-Engineering Requirements	Credit Hours
MTH 261 Analytic Geometry & Calculus I	5
MTH 280 Analytic Geometry & Calculus II	5
MTH 292 Multivariate Calculus	3
PHY 203 Foundations of Physics I	5
PHY 204 Foundations of Physics II	5
Electives: Select 6 credit hours (Must be approved by Engineering Department)	6
AS in Engineering Technology-Pre-Engineering Option Total	60

Recommended Two-Year Plan

Term 1 (Fall)

Course #	Credit Hours
CIS 101	3
EGR 100	1
EGR 110	3
ENG 110	3
IDS 110	2
Civics	3
Total	15

Milestone: EGR 100, EGR 110, ENG 110. Complete MTH prerequisite in place of Civics if needed.

Term 2 (Spring)

Course #	Credit Hours
CSC 125	4
COM 115/ENG 210/221	3
MTH 261	5
Elective	3
Total	15

Milestone: Complete CSC 125, MTH 261

Term 3 (Fall)

Course #	Credit Hours
CHM 160	4
CHM 161	1
MTH 280	5
PHY 203	5
Total	15

Milestone: Complete MTH 280 & PHY 203. Apply for admission to 4 year university.

Term 4 (Spring)

Course #	Credit Hours
ECO 155/ECO 165	3
EGR 297	1
MTH 292	3
PHY 204	5
Elective	3
Total	15

Milestone: Apply to graduate, Send final transcripts to 4 year university.

Milestone Notes:
* Milestones are a major step in the completion of the degree. Each milestone must be met in order to advance to the next stage of education.
* Milestone courses should be completed in the designated semester.
* All milestone courses must be completed with a C or higher.
* Students are encouraged to apply for graduation early in their last semester.

Degree Notes:
* Electives must be approved by the department.
* Students should confirm the transferability of courses with their transfer university before completing courses at MSU-WP.

For More Information, Contact·
Cathy Proffitt Boys, Engineering Program Coordinator
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