

Program Information Report

Science, Computer Technology, Engineering & Math

Pre-Engineering Science Transfer (ASPET)**Associate in Science Degree****Program Effective Term: Fall 2024**

This program addresses the increasing need of students pursuing STEM fields, specifically engineering. Students in this program will have their coursework pre-planned with specific courses laying the groundwork for successful transfer to a four year engineering program.

Articulation:

Eastern Michigan University, several BS degrees

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: <https://www.wccnet.edu/learn/transfer-wcc-credits/articulation-agreements.php> .

Program Admission Requirements:

- Students below Math Level 7 will need to take prerequisite courses.
- Students may need additional prerequisite coursework for CEM and PHY courses.

First Semester		(16 credits)
CEM 111	General Chemistry I	4
ENG 111	Composition I	4
MTH 191	Calculus I*	5
Elective	Soc. Sci. 1 Elective(s)	3
Second Semester		(14 credits)
CEM 122	General Chemistry II	4
ENG 226	Composition II	3
MTH 192	Calculus II	4
Elective	Arts/Human. 1 Elective(s)	3
Third Semester		(16 credits)
CPS 141 or	Introduction to Programming Using Python	4
CPS 171	Introduction to Programming with C++	4
PHY 211	Analytical Physics I	5
Elective	Soc. Sci. 2 Elective(s)	3
Elective	Restricted Math Elective 1**	4
Fourth Semester		(15 credits)
COM 101	Fundamentals of Speaking	3
PHY 222	Analytical Physics II	5
Elective	Arts/Human. 2 Elective(s)	3
Elective	Restricted Math Elective 2**	4
Minimum Credits Required for the Program:		61

Notes:

*Students below Math Level 7 will need to take prerequisite courses.

**Math restricted elective select two from: MTH 197, MTH 293, MTH 295.

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE FORM

Program Code: ASPET	Current Program Name: Pre-Engineering Science Transfer	Effective Term: Fall 2024
Division Code: MSE	Department: Physical Sciences	

Directions:

1. Attach the current program listing from the WCC catalog or website and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using CurricUNET, but should be submitted at the same time as the program change form.
4. If changes affect the program assessment plan or if program outcomes are updated, please submit a Program Assessment Plan Change form. These changes must be approved separately from the program change form and should be submitted at the same time. Current program assessment plans can be found on the Curriculum and Assessment Program Information page.

Requested Changes:

- | | |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Remove course(s): _____ | <input type="checkbox"/> Program outcomes (may also result from removing or adding a course)* |
| <input type="checkbox"/> Add course(s): _____ | <input type="checkbox"/> Program assessment plan* |
| <input type="checkbox"/> Program title (new title is _____) | <input type="checkbox"/> Accreditation information |
| <input type="checkbox"/> Description | <input checked="" type="checkbox"/> Other Change Footnote |
| <input type="checkbox"/> Advisors | |
| <input type="checkbox"/> Program admission requirements | |
| <input type="checkbox"/> Continuing eligibility requirements | |

Note: A change to the Award Type requires the submission of a new program proposal form and a separate program inactivation form. Contact the Director of Curriculum & Assessment for more information.

Show all changes on the catalog page you attach.

* Please submit a Program Assessment Plan Change form.

Rationale for proposed changes:

Recently, the prerequisite "minimum grade "C" high school physics" was removed from PHY 211, leaving only PHY 111 and MTH 191 as the prerequisites. Currently, the ASPET program documentation shows a footnote attached to PHY 211, which reads: "Students who have not completed a year of high school physics will need to complete PHY 111". This program change is requesting that this line is removed since completing high school physics is no longer accepted as an option to meet the prerequisites for the PHY 211 course.

Financial/staffing/equipment/space implications:

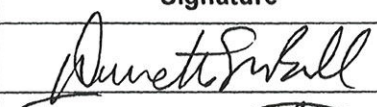
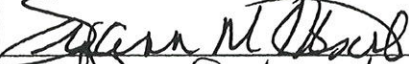
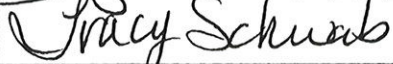
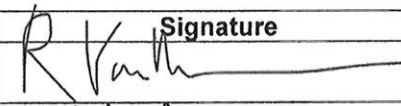


N/A

List departments that have been consulted regarding their use of this program.

N/A

PROGRAM CHANGE FORM

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Danette Bull		12/11/2023
Department Chair	Suzanne Albach		12/11/2023
Division Dean/Administrator	Tracy Schwab		12/11/2023
<p>Please return completed form to the Office of Curriculum & Assessment, SC 257 or by e-mail to curriculum.assessment@wccnet.edu Once reviewed by the appropriate faculty committees we will secure the signature of the VPI.</p>			
Reviewer	Print Name	Signature	Date
Curriculum Committee Chair	Randy Van Wagnen		2-14-24
Assessment Committee Chair	Jessica Hale		2/16/24
Interim Vice President for Instruction	Brandon Tucker		2/17/24

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Reviewed by C&A Committees 1/18/24

Program Information Report

Transfer and University Parallel Programs

If your goal is to continue your education toward a baccalaureate degree, then transfer and university parallel programs is the track for you. Complete the first two years of study in a supportive environment with small classes and personal attention.

Before beginning any transfer program, a student should consult with an academic advisor or counselor to obtain a program articulation agreement or a transfer guide. Early in the program, the student should contact an undergraduate advisor at the transfer college for specific admission and curriculum requirements and, if available, an unofficial transfer-credit evaluation.

Copies of articulation agreements and transfer guides are available in the Counseling Office on the second floor of the Student Center Building. Computers with access to the Internet Web sites of four-year colleges and universities are also available there.

Pre-Engineering/Physics

Students utilize this program in preparation for a degree in engineering or physics.

Pre-Engineering Science Transfer (ASPET)

Associate in Science Degree

Program Effective Term: **Fall 2018**

This program addresses the increasing need of students pursuing STEM fields, specifically engineering. Students in this program will have their coursework pre-planned with specific courses laying the groundwork for successful transfer to a four year engineering program.

Program Admission Requirements:

- Students below Math Level 7 will need to take prerequisite courses.
- Students may need additional prerequisite coursework for CEM and PHY courses.

First Semester		(16 credits)
CEM 111	General Chemistry I	4
ENG 111	Composition I	4
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	Soc. Sci. 1 Elective(s)	3
Second Semester		(14 credits)
CEM 122	General Chemistry II	4
ENG 226	Composition II	3
MTH 192	Calculus II	4
	Arts/Human. 1 Elective(s)	3
Third Semester		(16 credits)
CPS 141 or	Introduction to Programming Using Python	
CPS 171	Introduction to Programming with C++	4
PHY 211	Analytical Physics I**	5
	Restricted Math Elective 1***	4
	Soc. Sci. 2 Elective(s)	3
Fourth Semester		(15 credits)
COM 101	Fundamentals of Speaking	3
PHY 222	Analytical Physics II	5
	Restricted Math Elective 2***	4
	Arts/Human. 2 Elective(s)	3
Minimum Credits Required for the Program:		61

Notes:

*Students below Math Level 7 will need to take prerequisite courses.

**Students who have not completed a year of High School Physics will need to complete PHY 111.

***Math restricted elective select two from: MTH 197, MTH 293, MTH 295.

PROGRAM PROPOSAL FORM

- Preliminary Approval** – Check here when using this form for preliminary approval of a program proposal, and respond to the items in general terms.
- Final Approval** – Check here when completing this form after the Vice President for Instruction has given preliminary approval to a program proposal. For final approval, complete information must be provided for each item.

<p>Program Name:</p> <p>Division and Department:</p> <p>Type of Award:</p> <p>Effective Term/Year:</p> <p>Initiator:</p>	<p><u>Pre-Engineering Science Transfer (ASPET) Program Re-Activation</u></p> <p><u>Arts and Sciences; Physical Sciences</u></p> <p><input type="checkbox"/> AA <input checked="" type="checkbox"/> AS <input type="checkbox"/> AAS <input type="checkbox"/> Cert. <input type="checkbox"/> Adv. Cert. <input type="checkbox"/> Post-Assoc. Cert. <input type="checkbox"/> Cert. of Comp.</p> <p><u>Fall 2018</u></p> <p>Tracy Schwab</p>	<p>Program Code:</p> <p>ASPET</p> <p>CIP Code:</p> <p>14.0102</p>
<p>Program Features</p> <p>Program's purpose and its goals.</p> <p>Criteria for entry into the program, along with projected enrollment figures.</p> <p>Connection to other WCC programs, as well as accrediting agencies or professional organizations.</p> <p>Special features of the program.</p>	<p>This program is being reactivated from 2008. This reactivation and modification is due in part to the increasing student demand for pre-engineering courses. Students will complete general education requirements (19 credits), along with 42 credits preparing them to transfer into a four-year engineering institution.</p> <p>No special criteria are required for enrollment into this program as long as prerequisite courses are taken.</p> <p>This program will utilize existing courses that have already been reviewed and articulated to four year colleges and universities.</p> <p>Potential Enrollment: We project approximately 10-20 students will be enrolled in this program during any given year. This number is based on student interest and attendance at engineering presentations held on campus.</p>	
<p>Need</p> <p>Need for the program with evidence to support the stated need.</p>	<p>This program is intended to increase the number of students transferring to four year schools with their WCC associates degree. This program has been modified from a previous program (ASPET: Pre-Engineering Science Transfer) to include the necessary courses in order to successfully transfer to an engineering program. This ensures that students are not taking unnecessary courses which increase cost and time.</p>	
<p>Program Outcomes/Assessment</p> <p>State the knowledge to be gained, skills to be learned, and attitudes to be developed by students in the program.</p> <p>Include assessment methods that will be used to determine the effectiveness of the program.</p>	<p><u>Outcomes</u></p> <ol style="list-style-type: none"> 1. Transfer successfully to a four-year engineering program. 2. Apply scientific principles and mathematical calculations to solve problems and draw reasonable conclusions. 	<p><u>Assessment method</u></p> <ol style="list-style-type: none"> 1. Transfer information will be obtained from several sources including WCC Institutional Research department and alumni surveys. 2. Current departmental final exam in Analytical Physics II will be used.

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Curriculum

List the courses in the program as they should appear in the catalog. List minimum credits required. Include any notes that should appear below the course list.

ASMSAS Physics/Pre-Engineering (PENG) needs to be inactivated

First Semester

Class	Title	Credits
<u>CEM 111</u>	General Chemistry I	4
<u>MTH 191</u>	Calculus I *	5
<u>ENG 111</u>	Composition I	4
<u>Elective(s)</u>	<u>Social and Behavioral Science</u>	3
Total		16

Second Semester

Class	Title	Credits
<u>CEM 122</u>	General Chemistry II	4
<u>MTH 192</u>	Calculus II	4
<u>ENG 226</u>	Composition II	3
<u>Elective(s)</u>	<u>Arts and Humanities</u>	3
Total		14

Third Semester

Class	Title	Credits
<u>Elective(s)</u>	<u>Social and Behavioral Science</u>	3
Elective	Math Restricted Elective ***	4
<u>CPS 171</u>	<u>Programming in C++</u> Introduction to Programming in C++	4
<u>PHY 211</u>	Analytical Physics I **	5
Total		16

Fourth Semester

Class	Title	Credits
<u>COM 101</u>	Fundamentals of Speaking	3
Elective	Math Restricted Elective ***	4
<u>PHY 222</u>	Analytical Physics II	5
<u>Elective(s)</u>	<u>Arts and Humanities</u>	3
Total		15
Total Credits Required		61

* Students below Math Level 7 will need to take prerequisite courses

**Students who haven't completed a year of High School Physics will need to complete PHY 111 and PHY 122

*** Math Restricted elective, select two of MTH 197, MTH 293 or MTH 295

OK
 CPS 141 Introduction to Programming using Python
 Jlg
 3/23/18
 per Dean

Budget		START-UP COSTS	ONGOING COSTS
	Specify program costs in the following areas, per academic year:	Faculty	\$ 0 .
Training/Travel		0 .	0 .
Materials/Resources		0 .	0 .
Facilities/Equipment		0 .	0 .
Other		0 .	0 .
TOTALS:		\$ 0 .	\$ 0 .
Program Description for Catalog and Web site	<p>This program addresses the increasing need of students pursuing STEM fields, specifically engineering. Students in this program will have their coursework pre-planned with specific coursework <i>courses</i> laying the groundwork for successful transfer to a four year engineering program.</p>		
	<p>Accreditation/Licensure - None</p> <p>Advisors – Kathy Butcher</p> <p>Advisory Committee - None</p> <p>Admission requirements – None</p> <p>Articulation agreements – TBD</p> <p>Continuing eligibility requirements None</p>		

Assessment plan:

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
Transfer successfully to a four-year engineering program.	<i>Transfer data</i>	Fall 2021 followed by every three years.	All	All
Apply scientific principles and mathematical calculations to solve problems and draw reasonable conclusions.	Departmental final exam will be used.	Fall 2021 followed by every three years.	All <i>program students in PAY 222</i>	All

Scoring and analysis plan:

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally-developed rubric, external evaluation, other). Attach the rubric.

Outcome 1: No rubric is required to gather student transfer data.

Outcome 2: For Analytical Physics II: All students in this course will take the final assessment exam using a departmentally developed rubric. Departmental faculty will score the exams.

2. Indicate the standard of success to be used for this assessment.

Outcome 1: 70% of students who have enrolled in this program will successfully transfer to a four-year engineering program.

Outcome 2: For Analytical Physics II: The standard of success is that 75% of students assessed will achieve a score of 2.5 or higher (out of 4) on the departmental exam.

3. Indicate who will score and analyze the data.

Outcome 1: Physical Science Faculty will analyze the data.

Outcome 2: Physical Science Faculty will analyze the Analytical Physics II data.

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/Area Director	Kathy Butcher	<i>Kathleen Butcher</i>	10-1-17
Dean	Kris Good	<i>Kris Good</i>	10-2-17
Curriculum Committee Chair	David Wooten Lisa Veasey	<i>Lisa Veasey</i>	11/13/17
Vice President for Instruction <input type="checkbox"/> Approved for Development <input type="checkbox"/> Final Approval	Kimberly Hurns	<i>Kimberly Hurns</i>	11/15/17
President	Rose Bellanca	<i>RB Bellanca</i>	1/21/18
Board Approval			2/27/18