Program Information Report

Science, Computer Technology, Engineering & Math

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: **Winter 2025**

High Demand Occupation **High Skill Occupation** **High Wage Occupation**

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will focus on physical and natural science as well as understanding the social science perspective. The program integrates biology, chemistry and geology and leads to an associate in science degree which should transfer to four-year institutions following the MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

First Semester		**(14 credits)**
ENV 101	Introduction to Environmental Science and Lab	4
GEO 101	World Regional Geography	3
Elective	MTH 160, MTH 160X or any math level 4 or higher course	4
Elective	Writing Elective(s)	3-4

Second Semester		**(14 credits)**
BIO 161	General Biology I Ecology and Evolution	4
ENV 105	Introduction to Environment and Society	3
GLG 114	Physical Geology and Lab	4
Elective	Speech/Comp. Elective(s)	3

Third Semester		**(16 credits)**
CEM 111	General Chemistry I**	4
PHL 241	Environmental Ethics	3
Elective	Soc. Sci. Elective(s)***	3
Elective	Arts/Human. Elective(s)#	3
Elective	Choose an elective	3

Fourth Semester		**(16 credits)**
GLG 276	Principles of Geographic Information Systems	3
Elective	Restricted Elective(s): BIO 162, CEM 122, PHY 111, MTH 168 or MTH 169 or higher math course.	4
Elective	Electives to reach a minimum of 60 credits.	9

Minimum Credits Required for the Program: **60**

Notes:

#Recommended Arts and Humanities courses: ENG 181, ENG 214, HUM 146 or HUM 175.

***The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
****Recommended Social Science courses: ANT 201, ECO 110, ECO 211, HST 123, HST 150, PLS 112, SOC 100, SOC 205 or SOC 207.*

Program Information Report

Transfer

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: **Winter 2025**

High Demand Occupation **High Skill Occupation** **High Wage Occupation**

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will focus on physical and natural science as well as understanding the social science perspective. The program integrates biology, chemistry and geology and leads to an associate in science degree which should transfer to four-year institutions following the MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

First Semester		**(14 credits)**
ENV 101	Introduction to Environmental Science and Lab	4
GEO 101	World Regional Geography	3
Elective	MTH 160, MTH 160X or any math level 4 or higher course	4
Elective	Writing Elective(s)	3-4

Second Semester		**(14 credits)**
BIO 161	General Biology I Ecology and Evolution	4
ENV 105	Introduction to Environment and Society	3
GLG 114	Physical Geology and Lab	4
Elective	Speech/Comp. Elective(s)	3

Third Semester		**(16 credits)**
CEM 111	General Chemistry I**	4
PHL 241	Environmental Ethics	3
Elective	Soc. Sci. Elective(s)***	3
Elective	Arts/Human. Elective(s)#	3
Elective	Choose an elective	3

Fourth Semester		**(16 credits)**
GLG 276	Principles of Geographic Information Systems	3
Elective	Restricted Elective(s): BIO 162, CEM 122, PHY 111, MTH 168 or MTH 169 or higher math course.	4
Elective	Electives to reach a minimum of 60 credits.	9

Minimum Credits Required for the Program: **60**

Notes:

#Recommended Arts and Humanities courses: ENG 181, ENG 214, HUM 146 or HUM 175.

***The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
****Recommended Social Science courses: ANT 201, ECO 110, ECO 211, HST 123, HST 150, PLS 112, SOC 100, SOC 205 or SOC 207.*

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE FORM

Program Code: ASENVS	**Current Program Name:** Associate in Science- Environmental Science	**Effective Term:** Winter 2025
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:

- ☒ Remove course(s): MTH 160 and MTH 169 (as singles)
- ☒ Add course(s): MTH 160 or MTH160X, and MTH 168 or MTH 169
- ☐ Program title (new title is _____)
- ☐ Description
- ☐ Advisors
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes (may also result from removing or adding a course)*
- ☐ Program assessment plan*
- ☐ Accreditation information
- ☐ Other _____

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:

These changes will correlate with the changes in developmental math.

Financial/staffing/equipment/space implications:

N/A

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

MSE

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Suzanne Albach	Suzanne M Albach	09/24/2024
Department Chair	Suzanne Albach	Suzanne M Albach	09/24/2024
Division Dean/Administrator	Tracy Schwab	Tracy S. Schwab	9/25/24

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.

PROGRAM CHANGE FORM

Reviewer	Print Name	Signature	Date
Curriculum Committee Chair	Randy Van Wagnen	Randy Van Wagnen Digitally signed by Randy Van Wagnen Date: 2024.10.18 08:53:33 -04'00'	
Assessment Committee Chair	Jessica Hale		10/18/2024
Executive Vice President for Instruction	Dr. Brandon Tucker	Brandon Roderick Tucker Digitally signed by Brandon Roderick Tucker Date: 2024.10.19 13:08:10 -04'00'	

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Reviewed by C&A Committees 10/3/24

Program Information Report

Science, Computer Technology, Engineering & Math

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: **Fall 2023**

High Demand Occupation **High Skill Occupation** **High Wage Occupation**

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will focus on physical and natural science as well as understanding the social science perspective. The program integrates biology, chemistry and geology and leads to an associate in science degree which should transfer to four-year institutions following the MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

First Semester		**(14 credits)**
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Elective	MTH 160 or any math level 4 or higher course	4
Elective	Writing Elective(s)	3-4

Second Semester		**(14 credits)**
BIO 161	General Biology I Ecology and Evolution	4
ENV 105	Introduction to Environment and Society	3
GLG 114	Physical Geology	4
Elective	Speech/Comp. Elective(s)	3

Third Semester		**(16 credits)**
CEM 111	General Chemistry I**	4
PHL 241	Environmental Ethics	3
Elective	Soc. Sci. Elective(s)***	3
Elective	Arts/Human. Elective(s)#	3
Elective	Choose an elective	3

Fourth Semester		**(16 credits)**
GLG 276	Principles of Geographic Information Systems	3
Elective	Restricted Elective(s): BIO 162, CEM 122, PHY 111, or MTH 169 or higher math course.	4
Elective	Electives to reach a minimum of 60 credits.	9

Minimum Credits Required for the Program: **60**

Notes:

#Recommended Arts and Humanities courses: ENG 181, ENG 214, HUM 146 or HUM 175.

***The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
****Recommended Social Science courses: ANT 201, ECO 110, ECO 211, HST 123, HST 150, PLS 112, SOC 100, SOC 205 or SOC 207.*

Received by C&A 4/14/22

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE FORM

Program Code: ASENVS	Current Program Name: Associates in Environmental Science	Effective Term: Fall 2023
Division Code: MSE	Department: Physical Science	

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:

- ☐ Remove course(s): _____
- ☒ **Add course(s): PHL 241: Environmental Ethics**
- ☐ Program title (new title is _____)
- ☐ Description
- ☐ Advisors
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements

Show all changes on the catalog page you attach.

* Please submit a Program Assessment Plan Change form.

- ☐ Program outcomes (may also result from removing or adding a course)*
- ☐ Program assessment plan*
- ☐ Accreditation information
- ☐ Other _____

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.

Rationale for proposed changes: Environmental Ethics is a new class offered at WCC with direct relevance to the environment. The EMU equivalent course is part of EMU's core requirements for its environment science degree. Likely, this course will directly transfer to EMU.

Financial/staffing/equipment/space implications: None anticipated

List departments that have been consulted regarding their use of this program.
Humanities, Languages, and Arts department

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Smita Malpani	Smita Malpani	24 August 2021
Department Chair	Suzanne M. Albach	Suzanne M Albach	08/23/2021
Division Dean/Administrator	Victor Vega	Victor M. Vega	10/20/2021

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 and President.

Reviewer	Print Name	Signature	Date

PROGRAM CHANGE FORM

Curriculum Committee Chair	Randy Van Wagnen	R Van	5-31-22
Assessment Committee Chair	Shawn Deron		7/26/2022
Interim Vice President of Instruction	Victor Vega	Victor M. Vega	08/18/2022

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Reviewed by C&A Committees 5/19/22

Program Information Report

Science, Computer Technology, Engineering & Math

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: **Fall 2022**

High Demand Occupation **High Skill Occupation** **High Wage Occupation**

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will focus on physical and natural science as well as understanding the social science perspective. The program integrates biology, chemistry and geology and leads to an associate in science degree which should transfer to four-year institutions following the MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

First Semester		**(14 credits)**
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Elective	MTH 160 or any math level 4 or higher course	4
Elective	Writing Elective(s)	3-4

Second Semester		**(14 credits)**
BIO 161	General Biology I Ecology and Evolution	4
GLG 114	Physical Geology	4
Elective	Speech/Comp. Elective(s)	3
Elective	Arts/Human. Elective(s)#	3

Third Semester		**(16 credits)**
CEM 111	General Chemistry I**	4
ENV 105	Introduction to Environment and Society	3
Elective	Soc. Sci. Elective(s)***	3
Elective	Arts/Human. Elective(s)#	3
Elective	Choose an elective	3

Fourth Semester		**(16 credits)**
GLG 276	Principles of Geographic Information Systems	3
ENV 174 or	ENV Co-op Education I	
ENV 199	ENV Internship Education	1-3
Elective	Restricted Elective(s): BIO 162, CEM 122, PHY 111, or MTH 169 or higher math course.	4
Elective	Electives to reach a minimum of 60 credits.	8

Minimum Credits Required for the Program: **60**

Notes:

#Recommended Arts and Humanities courses: ENG 181, ENG 214, HUM 146, HUM 175 or PHL 205.

***The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
****Recommended Social Science courses: ANT 201, ECO 110, ECO 211, HST 123, HST 150, HST 270, PLS 112, SOC 100, SOC 205 or SOC 207.*

Program Information Report

Transfer

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: Fall 2022

High Demand Occupation High Skill Occupation High Wage Occupation

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will focus on physical and natural science as well as understanding the social science perspective. The program integrates biology, chemistry and geology and leads to an associate in science degree which should transfer to four-year institutions following the MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

First Semester		**(14 credits)**
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Elective	MTH 160 or any math level 4 or higher course	4
Elective	Writing Elective(s)	3-4

Second Semester		**(14 credits)**
BIO 161	General Biology I Ecology and Evolution	4
GLG 114	Physical Geology	4
Elective	Speech/Comp. Elective(s)	3
Elective	Arts/Human. Elective(s)#	3

Third Semester		**(16 credits)**
CEM 111	General Chemistry I**	4
ENV 105	Introduction to Environment and Society	3
Elective	Soc. Sci. Elective(s)***	3
Elective	Arts/Human. Elective(s)#	3
Elective	Choose an elective	3

Fourth Semester		**(16 credits)**
GLG 276	Principles of Geographic Information Systems	3
ENV 174 or	ENV Co-op Education I	
ENV 199	ENV Internship Education	1-3
Elective	Restricted Elective(s): BIO 162, CEM 122, PHY 111, or MTH 169 or higher math course.	4
Elective	Electives to reach a minimum of 60 credits.	8

Minimum Credits Required for the Program: 60

Notes:

#Recommended Arts and Humanities courses: ENG 181, ENG 214, HUM 146, HUM 175 or PHL 205.

***The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
****Recommended Social Science courses: ANT 201, ECO 110, ECO 211, HST 123, HST 150, HST 270, PLS 112, SOC 100, SOC 205 or SOC 207.*

Program Information Report

Science, Computer Technology, Engineering & Math

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: **Fall 2020**

High Demand Occupation **High Skill Occupation** **High Wage Occupation**

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will focus on physical and natural science as well as understanding the social science perspective. The program integrates biology, chemistry and geology and leads to an associate in science degree which should transfer to four-year institutions following the MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

Articulation:
Siena Heights University, BS degree.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/curriculum/articulation/levelone/colleges/.

First Semester		**(14 credits)**
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Elective	MTH 160 or any math level 4 or higher course	4
Elective	Writing Elective(s)	3-4

Second Semester		**(14 credits)**
BIO 161	General Biology I Ecology and Evolution	4
GLG 114	Physical Geology	4
Elective	Speech/Comp. Elective(s)	3
Elective	Arts/Human. Elective(s)#	3

Third Semester		**(16 credits)**
CEM 111	General Chemistry I**	4
ENV 105	Introduction to Environment and Society	3
Elective	Soc. Sci. Elective(s)***	3
Elective	Arts/Human. Elective(s)#	3
Elective	Choose an elective	3

Fourth Semester		**(16 credits)**
GLG 276	Principles of Geographic Information Systems	3
ENV 174 or	ENV Co-op Education I	
ENV 199	ENV Internship Education	1-3
Elective	Restricted Elective(s): BIO 162, CEM 122, PHY 111, or MTH 169 or higher math course.	4
Elective	Electives to reach a minimum of 60 credits.	8

Minimum Credits Required for the Program: **60**

Notes:

#Recommended Arts and Humanities courses: ENG 181, ENG 214, HUM 146, HUM 175 or PHL 205.

***The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
****Recommended Social Science courses: ANT 201, ECO 110, ECO 211, HST 123, HST 150, HST 235, HST 270, PLS 112, SOC 100, SOC 205 or SOC 207.*

Program Information Report

Science, Computer Technology, Engineering & Math

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: **Fall 2019**

High Demand Occupation **High Skill Occupation** **High Wage Occupation**

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will select from two tracks, one focusing on physical science and the other emphasizing the social science perspective. Both tracks integrate biology, chemistry and geology and lead to an Associate in Science degree which should transfer to 4-year institutions following the MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

Articulation:
Siena Heights University, BS degree.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/curriculum/articulation/levelone/colleges/.

Minimum Concentration Credits Required for the Program: **60**
Complete the Environmental Science concentration.

Environmental Science Concentrations

Environmental Science (ENV1)		(60 credits)
First Semester		**(14 credits)**
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Elective	MTH 160 or any math level 4 or higher course	4
Elective	Writing Elective(s)	3-4
Second Semester		**(14 credits)**
BIO 161	General Biology I Ecology and Evolution	4
GLG 114	Physical Geology	4
Elective	Speech/Comp. Elective(s)	3
Elective	Arts/Human. Elective(s)#	3
Third Semester		**(16 credits)**
CEM 111	General Chemistry I**	4
ENV 105	Introduction to Environment and Society	3
Elective	Soc. Sci. Elective(s)***	3
Elective	Arts/Human. Elective(s)#	3
Elective	Choose an elective	3
Fourth Semester		**(16 credits)**
GLG 276	Principles of Geographic Information Systems	3
ENV 174 or ENV 199	ENV Co-op Education I ENV Internship Education	1-3
Elective	Restricted elective(s): BIO 162, CEM 122, PHY 111, or MTH 169 or higher math course.	4
Elective	Electives to reach a total of 60 credits.	8

Minimum Credits Required for the Concentration or Option: 60

Minimum Credits Required for the Program: **60**

Notes:

#Recommended Arts and Humanities courses: ENG 181, ENG 214, HUM 146, HUM 175, PHL 205 or PHL 240.
***The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
****Recommended Social Science courses: ANT 201, ECO 110, ECO 211, HST 123, HST 150, HST 235, HST 270, PLS 112, SOC 100,*

SOC 205 or SOC 207.

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: **Program Name:** AS ENVS ENVIRONMENTAL SCIENCE **Effective Term:** FALL 2019

Division Code: MSE **Department:** PHYS SCI

Directions:

1. Attach the current program listing from the WCC catalog or Web site 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 a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☒ Remove course(s): CIS 100, BIO 162
- ☒ Add course(s): BIO 161
- ☐ Program title (title was _____)
- ☐ Description
- ☐ Type of award
- ☒ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes
- ☐ Accreditation information
- ☒ Discontinuation of concentration: ENV2
- ☐ Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:

Please see attached.

Financial/staffing/equipment/space implications:

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

PHYSICAL SCIENCE

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	SMITA MALPANI	Smita Malpani	11 Jan 2019
Department Chair	Suzanne Albach	Suzanne M Albach	16 Jan 2019
Division Dean/Administrator	Kristin Good	Kristin Good	1.17.19
Please submit completed form to the Office of Curriculum and Assessment (SC 257). Once reviewed by the appropriate faculty committees we will secure the signature of the VPI and President.			
Vice President for Instruction	Kimberly Hurns		2/11/2019

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WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: ASENVS, ENV1 and ENV2 **Program Name:** Environmental Science **Effective Term:** Fall 2018

Division Code: MSET **Department:** Physical Science

Directions:

1. Attach the current program listing from the WCC catalog or Web site 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 a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☐ Remove course(s): _____
- ☒ Add course(s): **ENV 199: ENV Internship Education**
- ☐ Program title (title was _____)
- ☐ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☒ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☐ Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:

1. Course Addition (please see attached catalog pages):

ENV 199 was added to allow students to complete this new course, or ENV 174, to graduate without need for graduation substitution forms. ENV 174 is "ENV Co-op Education I" (which is a paid work experience) and ENV 199 is ENV Internship Education (an unpaid work experience). This addition allows students to have this noted on their transcripts which can benefit them in job, college and scholarship applications. Also, the addition of this class will allow us to assess the success of the work experience course (and the proposed ENV program outcome).

2. Program Outcome Change (please see attached "Existing ASENVS Program Outcomes" as well as the "Program Assessment Planning Form" for revised outcomes):

a. Adding the outcome "Research and apply environmental science theories and concepts to describe complex issues connected to an environmental science challenge" will allow us to have a direct measure for program assessment, using student data from a departmentally-developed rubric (using the ENV 105 research paper, which is required for all program students). Prior to this addition, the existing outcomes only consisted of indirect measures of assessment.

b. Adding the outcome "Participate in a co-op or internship work experience with an environmentally-related business or organization." provides another direct measurement of assessment, using a departmentally-developed rubric (using the student's work experience summary paper, which is required for all program students). The addition of this outcome allows us to directly measure the success of our program using data from our capstone courses, ENV 174 and ENV 199.

c. Existing outcomes #2 and #3 proved hard to assess during the Fall 2017 assessment of this program because transfer data and graduate responses were extremely limited. Also, not all students planned to continue on to a four-year college, so the existing outcome #2 was not an accurate measure of the success of the program. Instead, data can be gathered and included for students that do transfer, through data obtained by WCC Institutional Research and Clearinghouse.

Financial/staffing/equipment/space implications:
None

List departments that have been consulted regarding their use of this program.
None

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Suzanne M. Alback	Suzanne M. Alback	4/23/18
Department Chair	Kathleen Bickle	Kathleen Bickle	4/23/18
Division Dean/Administrator	[illegible]	[illegible]	4/24/18
Vice President for Instruction	Kimberly Burns	[illegible]	7/23/18

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2018-19 Catalog Listing of ENV Program Course Requirements
ENV 199 Course Addition

▲ Environmental Science (ENV1)

First Semester

Class	Title	Minimum Credits
ENG 111	Composition I	4
GLG 114	Physical Geology	4
MTH 160	Basic Statistics	4
CIS 100	Introduction to Computer Productivity Apps	3
Total		**15**

Second Semester

Class	Title	Minimum Credits
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Total		**14**

Third Semester

Class	Title	Minimum Credits
CEM 111	General Chemistry I *	4
ENV 105	Introduction to Environment and Society	3
GLG 276	Principles of Geographic Information Systems	3
Elective(s)	Social and Behavioral Science 2 **	3
	Select from COM 101, COM 102, COM 210 or COM 225 ***	3
Total		**16**

Fourth Semester

Class	Title	mum redits
ENV 174	ENV Co-op Education I	1 - 3
PHL 205	Ethics	3
	Electives to reach a total of 60 credits. #	11
Total		**15 - 17**

Here, we need to add that students can take either ENV 174 or ENV 199 (ENV Internship Education). A footnote should be added to alert students that they will need instructor permission to enroll and they should contact their advisor.

Total Credits Required: 60 - 62

Footnotes

*The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.
**Recommended MTA approved social science courses: SOC 100, ECO 211, ECO 222 or PLS 112.
***COM 225 is recommened especially for students transferring to EMU.
#Please see program advisor for help in choosing elective credits. Students transferring to EMU in the Environmental Science program should select GLG 276.

▲ Environmental Science and Society (ENV2)

First Semester

Class	Title	Minimum Credits
ENG 111	Composition I	4
GLG 100	Introduction to Earth Science	4
SOC 100	Principles of Sociology	3
CIS 100	Introduction to Computer Productivity Apps	3
Total		**14**

Second Semester

Class	Title	Minimum Credits
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Total		**14**

Third Semester

Class	Title	Minimum Credits
CEM 111	General Chemistry I *	4
ENV 105	Introduction to Environment and Society	3
MTH 160	Basic Statistics	4
PHL 205	Ethics	3
	Electives to reach a total of 60 credits. #	3
Total		**17**

Fourth Semester

Class	Title	Minimum Credits
ENV 174	ENV Co-op Education I	1 - 3
	Select from COM 101, COM 102, CO	3
	Electives to reach a total of 60 credi	11
Total		**15 - 17**

Here, we need to add that students can take either ENV 174 or ENV 199 (ENV Internship Education). A footnote should be added to alert students that they will need instructor permission to enroll and they should contact their advisor.

Total Credits Required: 60 - 62

PROGRAM ASSESSMENT PLANNING FORM

Program to be assessed:

Title: Environmental Science
Division: Math, Science and Engineering Technology Department: Physical Science
Program Code: ASENVS, ENV1 and ENV2

Type of Award: ☐ A.A. ☒ A.S ☐ A.A.S. ☐ Cert. ☐ Adv. Cert. ☐ Post-Assoc. Cert. ☐ Cert. of Completion

Assessment plan:

Learning outcomes to be assessed	Assessment tool	When assessment will take place	Describe population to be assessed	Number of students to be assessed
1. Research and apply environmental science theories and concepts to describe an environmental science challenge.	ENV 105 Research Paper	Fall 2021, and every three years thereafter.	All	All
2. Apply classroom knowledge to real world employment with an environmentally-minded business or organization.	ENV174/ENV 199 Summary Paper	Fall 2021, and every three years thereafter.	All	All
3. Transfer and perform successfully at a four-year college in a related program.	Transfer data from WCC Institutional Research	Fall 2021, and every three years thereafter.	All	All

Scoring and analysis of assessment:

1. **Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally developed rubric, external evaluation, other). Attach the rubric/scoring guide.**
   #1: Assessment will be scored by a departmentally-developed rubric (see attached ENV 105 Research Paper Rubric).

   #2: Assessment will be scored by a departmentally-developed rubric (see attached ENV 174/ENV 199 Grading Rubric).

   #3: Transfer data is generated by WCC's Institutional Research Department.

2. **Indicate the standard of success to be used for this assessment.**
   #1 and #2: The standard of success to be used for this assessment: 75% of the students will score a 75% or better.

   #3: 60% of the students that transfer to EMU will demonstrate success (earn a grade of "C" or better) in related courses in the science area.

3. **Indicate who will score and analyze the data (data must be blind-scored).**
   All: Environmental science faculty will score and analyze the data for all outcomes.

Submitted by:

Name: Suzanne M. Albach / Suzanne M. Albach Date: 4/23/2018
Print/Signature

Dept. Chair: Kathleen Bickel Date: 4/23/2018
Print/Signature

Dean: [illegible] Date: 4/24/18
Print/Signature

ASENVS

WCC General Education Requirements
Effective Fall 2018

Associate degree programs were updated to meet the revised WCC general education requirements below.

Course Distribution Requirements

Associate degree students must complete courses from each of six General Education content areas. The requirements vary, depending on which degree is being earned. The number of general education credit hours required for each degree is as follows.

	AA	AS	AAS
Writing/Composition	3-4 credits	3-4 credits	3-4 credits
2nd Writing/Composition or Communication	3-4 credits	3 credits	3 credits
Mathematics	3-4 credits	3-4 credits	3-4 credits
Natural Sciences [1]	7-8 credits	7-8 credits	3-4 credits
Social & Behavioral Science [2]	6 credits	6 credits	3 credits
Arts and Humanities [3]	6 credits	6 credits	3 credits
General Education Electives to reach 30 credits	0-2 credits	0-2 credits	N/A
Minimum	30 credits	30 credits	18 credits

[1] Two courses in Natural Science including one with laboratory experience (from two disciplines)
[2] From two disciplines
[3] From two disciplines

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.

Math and Science

Learn more about math or science through this associate degree program.

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: Fall 2018

High Demand Occupation High Skill Occupation High Wage Occupation

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will select from two tracks, one focusing on physical science and the other emphasizing the social science perspective. Both tracks integrate biology, chemistry and geology and lead to an Associate in Science degree which should transfer to 4-year institutions following the MACRAO and MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

Articulation:
Siena Heights University, BS degree.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/curriculum/articulation/levelone/colleges/.

Minimum Concentration Credits Required for the Program: **60**
Complete a concentration: Environmental Science or Environmental Science and Society.

Environmental Science Concentrations

Environmental Science (ENV1)		(60 credits)
First Semester		**(15 credits)**
ENG 111	Composition I	4
GLG 114	Physical Geology	4
MTH 160	Basic Statistics	4
CIS 100	Introduction to Computer Productivity Apps	3
Second Semester		**(14 credits)**
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Third Semester		**(16 credits)**
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
GLG 276	Principles of Geographic Information Systems	3
	Soc. Sci. Elective(s) 2**	3
	Select from COM 101, COM 102, COM 210 or COM 225***	3
Fourth Semester		**(15 credits)**
ENV 174	ENV Co-op Education I	1
PHL 205	Ethics	3
	Electives to reach a total of 60 credits.#	11

Minimum Credits Required for the Concentration or Option: 60

Program Information Report

Environmental Science and Society (ENV2)		(60 credits)
First Semester		**(14 credits)**
ENG 111	Composition I	4
GLG 100	Introduction to Earth Science	4
SOC 100	Principles of Sociology	3
CIS 100	Introduction to Computer Productivity Apps	3
Second Semester		**(14 credits)**
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Third Semester		**(17 credits)**
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
MTH 160	Basic Statistics	4
PHL 205	Ethics	3
	Electives to reach a total of 60 credits.#	3
Fourth Semester		**(15 credits)**
ENV 174	ENV Co-op Education I	1
	Select from COM 101, COM 102, COM 210 or COM 225***	3
	Electives to reach a total of 60 credits.#	11

Minimum Credits Required for the Concentration or Option: 60

Minimum Credits Required for the Program: 60

Notes:

**The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*
***Recommended MTA approved social science courses: SOC 100, ECO 211, ECO 222 or PLS 112.*
****COM 225 is recommened especially for students transferring to EMU.*
#Please see program advisor for help in choosing elective credits. Students transferring to EMU in the Environmental Science program should select GLG 276.

Done 1/24/18 NW

WASHTENAW COMMUNITY COLLEGE
GENERAL EDUCATION REVISION PROGRAM CHANGE FORM
FOR AA AND AS PROGRAMS 2018-2019

Due December 8, 2017

Program Code: ASENVS, ENV1 and ENV 2	**Program Name: Environmental Science**
Division Code: Math, Science and Engineering	**Department: Physical Science**

This form is to be used only for General Education Revision Program Changes for Associate in Arts (AA) and Associate in Science (AS) programs. Any other program changes should be submitted separately using a standard Program Change Form.

Directions:

1. Review each general education area under **Requested Changes** below and respond as needed.
2. Attach the semester program layout showing the current program listing from the WCC catalog.
   a. Indicate any changes to be made on the semester layout.
   b. Draw a line through any courses that should be removed on the semester layout.
   c. Write in any courses that need to be added on the semester layout.
3. Submit this form and semester program layout to the Office of Curriculum and Assessment (SC 257).

Current General Education Requirements AA and AS	
Writing	6 - 7 credits
Speech	3 credits
Mathematics	3 - 4 credits
Natural Sciences	3 - 4 credits
Social & Behavioral Sciences	6 credits
Arts & Humanities	6 credits
Critical Thinking	0 credits
Computer & Information Literacy	3 credits
Total	30 - 33 credits

Revised General Education Requirements 2018-2019 AA and AS	
English Composition	3 - 4 credits
2nd Course in English Composition or one course in Communication	3 - 4 credits
Mathematics	3 - 4 credits
Natural Sciences from 2 disciplines including one lab course	7 - 9 credits
Social & Behavioral Sciences from 2 disciplines	6 credits
Arts & Humanities from 2 disciplines	6 credits
Elective Credits to reach a minimum of 30 credit hours	0 - 3 credits
Total	30 credits

Please review each General Education Area in the chart below, and record the needed changes in the chart and on the attached semester layout.

	REQUESTED CHANGES
	General Education Area
	English Composition – The requirement for one writing/English composition course remains the same. No changes will be made unless specifically requested below. (Use Writing Elective or ENG 111) Optional Change: **No changes—Keep existing "ENG 111" for both tracks.**
	2nd Course in English Composition or one course in Communication WCC previously required both a second composition/writing course and a communication course. Your options are: 1. Allow students to select any course that meets composition/writing or communication (*recommended*). 2. Require students to take a specific composition course (identify course below and on semester layout). 3. Require students to take a specific communication course (identify course below and on semester layout). Requested Change: **No changes—Keep existing "ENG 226" for both tracks.**

	2nd Course in English Composition or one course in Communication Credit Hours Because of this change, an extra 3 – 4 credit hours may be available in the program. Please specify how you would like to use those credit hours. Your options are: 1. Reduce the number of credit hours if the program total is over 60 *(recommended).* 2. Replace the course with elective credits as needed to reach a minimum of 60 credit hours. 3. Add a specific program-related course *(please add the course in the semester it should be taken on the semester layout).* Requested Change: **Please replace "Speech Elective (3)" with "COM Elective (3)" with a footnote that COM 225: Intercultural Communication is recommended for students transferring to EMU" for both tracks.**
	Mathematics – The requirement for one mathematics course remains the same. However, the courses that meet the MTA requirement have changed slightly. MTH 148, 149 and 167 do not meet the general education requirement for AA or AS degrees. Please identify an alternate course or list "Math elective". Optional Change: **No changes—Keep existing "MTH 160" for both tracks.**
	Natural Sciences from 2 disciplines including one lab course WCC previously required one natural science course. Your options are: 1. No change needed – a second natural science course is already included in my program. 2. Add a second natural science course in the semester shown on the semester layout attached. Unless specific courses are required, include one course identified as a lab science course. Requested Change: **No changes for either track, plenty of science courses, lab and no lab are required.**
	Social & Behavioral Sciences from 2 disciplines – The requirement for two social and behavioral science courses remains the same. No changes will be made unless specifically requested below. Optional Change: **No changes—Keep existing "GEO 101" for both tracks. ENV1 already requires and additional 3 credit hour elective in this area, and ENV2 does require a second course in "SOC 100".**
	Arts & Humanities from 2 disciplines – The requirement for two arts and humanities courses remains the same. No changes will be made unless specifically requested below. (Note: A department can designate a COM course as a requirement here. The same course cannot be counted in two areas.) Optional Change: **We require two courses in this area for both tracks, "PHL 205" and an elective in this area. I recommend that the wording in the notes be changed to say students can choose any elective in this area, except PHL, so that a second discipline is covered.**
	Computer and Information Literacy The requirement for computer and information literacy has been removed. Your options are: 1. Continue to require a specific computer course. If a specific course is required in your program, we will leave it there. If you previously used "Computer and Information Literacy Course," you will need to specify either a specific course or a list of courses from which to choose. 2. Remove the computer and information literacy course if the program will still meet the minimum of 60 credit hours. 3. Remove the computer and information literacy course and replace the course with elective or other credits as needed to meet the minimum of 60 credit hours. Required Change: **Instead of a computer science elective, please change it to a specific course: "CIS 100" for both tracks.**
	Elective Credits to reach a minimum of 30 credit hours – A course titled "General Education Credit(s) to Reach a Minimum of 30 Credit Hours" will be created and then added as needed to the program.

Reviewer	Print Name	Signature	Date
Initiator	Suzanne M. Albach	Suzanne M. Albach	12/8/2017
Department Chair			
Division Dean/ Administrator		copy emailed 1/5/18	
Vice President for Instruction			1/9/18

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Revised Semester Layout:

Environmental Science (ENV1)	**(60 Credits)**
First Semester:	**(15 Credits)**
ENG 111 Composition I	4
GLG 114 Physical Geology	4
MTH 160 Basic Statistics	4
CIS 100 Introduction to Computer Productivity Apps	3
Second Semester:	**(14 Credits)**
BIO 162 General Biology II Cells and Molecules Composition	4
ENG 226 Composition II	3
ENV 101 Environmental Science I	4
GEO 101 World Regional Geography	3
Third Semester:	**(16 Credits)**
CEM 111 General Chemistry I*	4
ENV 105 Introduction to Environment and Society	3
GLG 276 Principles of Geographic Information Systems	3
COM Elective^^	3
Soc. Sci. Elective(s)**	3
Fourth Semester:	**(15 Credits)**
ENV 174 ENV Co-Op Education, -or-	
ENV 199 Internship in Env Sci	1
PHL 205 Ethics	3
Arts/Human. Elective(s)	3
Electives to reach a total of 60 credits.***	8

ENV 199 does not exist.

Environmental Science (ENV2)	(60 Credits)
First Semester:	(14 Credits)
ENG 111 Composition I	4
GLG 100 Introduction to Earth Science	4
SOC 100 Principles of Sociology	3
CIS 100 Introduction to Computer Productivity Apps	3
Second Semester:	(14 Credits)
BIO 162 General Biology II Cells and Molecules Composition	4
ENG 226 Composition II	3
ENV 101 Environmental Science I	4
GEO 101 World Regional Geography	3
Third Semester:	(17 Credits)
CEM 111 General Chemistry I*	4
ENV 105 Introduction to Environment and Society	3
MTH 160 Basic Statistics	4
PHL 205 Ethics	3
Electives to reach a total of 60 credits.***	3
Fourth Semester:	(15 Credits)
ENV 174 ENV Co-Op Education	1
COM Elective^^	3
Arts/Human. Elective(s)^	3
Electives to reach a total of 60 credits.#	8

*The prerequisite for this course may include a higher math level than those used in the program. See advisor for assistance.
**Recommended social science courses: SOC 100, ECO 211, ECO 222 or PLS 112. Elective can not be in the PHL discipline.
***Please see advisor for help in choosing elective credits.
^ Recommended social science courses: ECO 211, ECO 222 or PLS 112. Elective can not be in the PHL discipline.
^^COM 225 Intercultural Communication is recommended, especially for students transferring to EMU.
Please see advisor for help in choosing elective credits. Students transferring to EMU in the Environmental Science Program should select GLG 276.

Program Information Report

ASENVS

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.

Business (AABAS)
Computer Science: Programming in Java (ASCSPJ) See School of Information Technology
Criminal Justice (AACJ)
Education, Early Childhood (AAECE)
Education, Elementary (AAELEM)
Education, Secondary (AASECO)
Environmental Science (ASENVS)
1. Environmental Science (ENV1)
2. Environmental Science and Society (ENV2)

Exercise Science (ASESCI)
General Studies in Math and Natural Sciences (ASGSMS)
Honors in the Liberal Arts (AAHLA)
Human Services (AAHUST)
Information Systems: Programming in C++ (ASISPC) See School of Information Technology
Liberal Arts Transfer (AALAT)
Math and Science (ASMSAS)
1. Pre-Medicine Concentration (BMED or CMED)
2. Mathematics Concentration (MATH)
3. Physics/Pre-Engineering Concentration (PHYS)
4. Pre-Actuarial Science Concentration (PPAS)
5. Pre-Pharmacy Concentration (PPHA)

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.

Math and Science

Learn more about math or science through this associate degree program.

Program Information Report

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: Fall 2015

High Demand Occupation High Skill Occupation High Wage Occupation

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will select from two tracks, one focusing on physical science and the other emphasizing the social science perspective. Both tracks integrate biology, chemistry and geology and lead to an Associate in Science degree which should transfer to 4-year institutions following the MACRAO and MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

Articulation:
Siena Heights University, BS degree.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges

Minimum Concentration Credits Required for the Program: **60**
Complete a concentration: Environmental Science or Environmental Science and Society.

Environmental Science Concentrations

Environmental Science (ENV1) **(60 credits)**

First Semester		**(15 credits)**
ENG 111	Composition I	4
GLG 114	Physical Geology	4
MTH 160	Basic Statistics	4
	Computer Lit. Elective(s)	3
Second Semester		**(14 credits)**
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Third Semester		**(16 credits)**
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
GLG 276	Principles of Geographic Information Systems	3
	Soc. Sci. Elective(s)**	3
	Speech Elective(s)	3
Fourth Semester		**(15 credits)**
ENV 174	ENV Co-op Education I	1
PHL 205	Ethics	3
	Arts/Human. Elective(s)	3
	Electives to reach a total of 60 credits.***	8

Minimum Credits Required for the Concentration or Option: 60

Environmental Science and Society (ENV2) **(60 credits)**

First Semester		**(14 credits)**
ENG 111	Composition I	4
GLG 100	Introduction to Earth Science	4
SOC 100	Principles of Sociology	3
	Computer Lit. Elective(s)	3
Second Semester		**(14 credits)**
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3

Program Information Report

Third Semester		(17 credits)
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
MTH 160	Basic Statistics	4
PHL 205	Ethics	3
	Electives to reach a total of 60 credits.#	3

Fourth Semester		(15 credits)
ENV 174	ENV Co-op Education I	1
	Arts/Human. Elective(s)	3
	Speech Elective(s)	3
	Electives to reach a total of 60 credits.***	8

Minimum Credits Required for the Concentration or Option: 60

Minimum Credits Required for the Program: 60

Notes:

**The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*

***Recommended MACRAO and MTA approved social science courses: SOC 100, ECO 211, ECO 222 or PLS 112.*

****Students following the MACRAO agreement should select one additional social science and one additional arts and humanities course.*

#Students transferring to EMU in the Environmental Science program should select GLG 276.

Program Information Report

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: Fall 2014

High Demand Occupation High Skill Occupation High Wage Occupation

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will select from two tracks, one focusing on physical science and the other emphasizing the social science perspective. Both tracks integrate biology, chemistry and geology and lead to an Associate in Science degree which should transfer to 4-year institutions following the MACRAO and MTA guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

Articulation:
Siena Heights University, BS degree.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges

Minimum Concentration Credits Required for the Program: **60**
Complete a concentration: Environmental Science or Environmental Science and Society.

Environmental Science Concentrations

First Semester		(15 credits)
ENG 111	Composition I	4
GLG 114	Physical Geology	4
MTH 160	Basic Statistics	4
	Computer Lit. Elective(s)	3
Second Semester		(14 credits)
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Third Semester		(16 credits)
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
GLG 276	Principles of Geographic Information Systems	3
	Soc. Sci. Elective(s)**	3
	Speech Elective(s)***	3
Fourth Semester		(15 credits)
ENV 174	ENV Co-op Education I	1
PHL 205	Ethics	3
	Arts/Human. Elective(s)***	3
	Electives to reach a total of 60 credits.****	8

Minimum Credits Required for the Concentration or Option: 60

First Semester		(14 credits)
ENG 111	Composition I	4
GLG 100	Introduction to Earth Science	4
SOC 100	Principles of Sociology	3
	Computer Lit. Elective(s)	3
Second Semester		(14 credits)
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3

Program Information Report

Third Semester		(17 credits)
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
MTH 160	Basic Statistics	4
PHL 205	Ethics	3
	Electives to reach a total of 60 credits.#	3

Fourth Semester		(15 credits)
ENV 174	ENV Co-op Education I	1
	Arts/Human. Elective(s)***	3
	Speech Elective(s)***	3
	Electives to reach a total of 60 credits. ****	8

Minimum Credits Required for the Concentration or Option: 60

Minimum Credits Required for the Program: 60

Notes:

**The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*

***Recommended MACRAO and MTA approved social science courses: SOC 100, ECO 211, ECO 222 or PLS 112.*

****Students transferring to EMU should consider taking either COM 225 or an Arts and Humanities Elective that will meet EMU's Diverse World Requirement. See the list located at: http://www4.wccnet.edu/academicinfo/creditofferings/courses/emucrosscultural/*

*****Students following the MACRAO agreement should select one additional social science and one additional arts and humanities course.*

#Students transferring to EMU in the Environmental Science program should select GLG 276.

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: ASENVS **Program Name:** ENVIRONMENTAL SCIENCE **Effective Term:** FALL 2014

Division Code: MSH **Department:** PHYSICAL SCIENCE

Directions:

1. Attach the current program listing from the WCC catalog or Web site 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 a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☒ Remove course(s):
  ENV1: MTH 178, PHY 111, PLS 112, ENV 201, COM 101, 183, or 225
  ENV2: BIO 161, PLS 112, ENV 201, COM 101, 183, or 225
- ☒ Add course(s):
  ENV1: GLG276, ENV 274, COM elective (3 credit), Unrestricted electives to meet a minimum of 60 hours (8).
  ENV2: ENV274, COM elective (3 credit), Unrestricted electives to meet a minimum of 60 hours (8).
- ☐ Program title (title was _____)
- ☐ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☐ Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:
These changes were made to align with the program requirements of area colleges and the new MTA transfer guidelines. The changes will also allow WCC students additional elective options to complete this program and enhance their studies.

Financial/staffing/equipment/space implications:

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

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Suzanne M. Albach	Suzanne M. Albach	2/7/2014
Department Chair	Kathleen Butcher	Kathleen Butcher	2/11/2014
Division Dean/Administrator	Martha Showalter	M Showalter	2/11/2014
Vice President for Instruction	[illegible]	[illegible]	2/24/14
President			

Do not write in shaded area. Entered in: Banner_____ C&A Database 3/3/14 **Log File** 3/3/14 **Board Approval** _____

logged 2/12/14 sfv

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: ASENVS **Program Name: Environmental Science** **Effective Term: Fall 2013**

Division Code: MSH **Department:** Physical Science Department

Directions:

1. Attach the current program listing from the WCC catalog or Web site 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 a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☒ Remove course(s): GLG 100, CPS 120 or 161 or 171, PHY 111, restricted electives
- ☒ Add course(s): ENV 105, SOC 100, open elective
- ☐ Program title (title was _____)
- ☒ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☒ Other: Create another track for Environmental Science and Society

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:

This option provides students who are more interested in the social science perspective and the impact on the environment. The change removes 10 credits of math, physics and computer science in favor of sociology, and a new ENV 105 course that looks at the environment from a social perspective.

Financial/staffing/equipment/space implications:

Creation of one new course

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

Faculty from other departments were consulted regarding ENV 105.

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Susan Albach	Submitted via CurricUNET	2/24/13
Department Chair	Kathleen Butcher	Approved via CurricUNET	2/25/13
Division Dean/Administrator	Martha Showalter	Approved via CurricUNET	3/05/13
Vice President for Instruction	William Abernethy		4/10/13
President	N/A		

Do not write in shaded area. **Entered in: Banner**_____ **C&A Database** 4/3/13 **Log File** 4/3/13 **Board Approval** _____

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

logged 3/7/13 ✓

4-3-13

Description

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will select from two tracks, one focusing on physical science and the other emphasizing the social science perspective. Both tracks integrate biology, chemistry and geology and lead to an Associate in Science degree which should transfer to 4-year institutions following the MACRAO guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

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.

Business (AABAS)
Computer Science: Programming in Java (ASCSPJ) See School of Information Technology
Criminal Justice (AACJ)
Education, Early Childhood (AAECE)
Education, Elementary (AAELEM)
Education, Secondary (AASECO)
Environmental Science (ASENVS)
1. Environmental Science (ENV1)
2. Environmental Science and Society (ENV2)

Exercise Science (ASESCI)
General Studies in Math and Natural Sciences (ASGSMS)
Human Services (AAHUST)
Information Systems: Programming in C++ (ASISPC) See School of Information Technology
Liberal Arts Transfer (AALAT)
Math and Science (ASMSAS)
1. Pre-Medicine Concentration (BMED or CMED)
2. Computer Science Concentration (COMS)
3. Mathematics Concentration (MATH)
4. Physics/Pre-Engineering Concentration (PHYS)

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.

Math and Science

Learn more about math or science through this associate degree program.

Program Information Report

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: Fall 2013

This program is designed to prepare students to deal with environmental issues and concerns from a global point of view. Students will select from two tracks, one focusing on physical science and the other emphasizing the social science perspective. Both tracks integrate biology, chemistry and geology and lead to an Associate in Science degree which should transfer to 4-year institutions following the MACRAO guidelines. Students will have first-hand lab experiences studying environmental problems from a scientific perspective as well as proposing and implementing solutions to sustainability. The program prepares students for careers in resource management, waste management, sustainability, environmental consultation and other related fields.

Articulation:
Siena Heights University, BS degree.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site:
http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges

Minimum Concentration Credits Required for the Program: **62**
Complete a concentration: Environmental Science or Environmental Science and Society.

Environmental Science Concentrations

Environmental Science (ENV1) **(62 credits)**

First Semester		**(16 credits)**
ENG 111	Composition I	4
GLG 114	Physical Geology	4
MTH 178	General Trigonometry	3
	Computer Lit. Elective(s)	3
Second Semester		**(14 credits)**
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Third Semester		**(14 credits)**
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
MTH 160	Basic Statistics	4
	Soc. Sci. Elective(s)**	3
Fourth Semester		**(13 credits)**
PHL 205	Ethics	3
PHY 111	General Physics I*	4
PLS 112	Introduction to American Government	3
Fifth Semester		**(17 credits)**
COM 101 or	Fundamentals of Speaking	
COM 183 or	Persuasion	
COM 225	Intercultural Communication***	3
ENV 201	Environmental Science II	4
	Arts/Human. Elective(s)***	3

Minimum Credits Required for the Concentration or Option: 62

Environmental Science and Society (ENV2) **(62 credits)**

First Semester		**(16 credits)**
ENG 111	Composition I	4
GLG 100	Introduction to Earth Science	4
SOC 100	Principles of Sociology	3
	Computer Lit. Elective(s)	3

Program Information Report

Second Semester		
BIO 162	General Biology II Cells and Molecules	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
Third Semester		
CEM 111	General Chemistry I*	4
ENV 105	Introduction to Environment and Society	3
MTH 160	Basic Statistics	4
	Elective to meet a minimum of 60 credit hours.#	3
Fourth Semester		
BIO 161	General Biology I Ecology and Evolution	4
PHL 205	Ethics	3
PLS 112	Introduction to American Government	3
Fifth Semester		
COM 101 or	Fundamentals of Speaking	
COM 183 or	Persuasion	
COM 225	Intercultural Communication***	3
ENV 201	Environmental Science II	4
	Arts/Human. Elective(s)***	3

Minimum Credits Required for the Concentration or Option: 62

Minimum Credits Required for the Program: 62

Notes:

**The prerequisite for this course may include a higher math level than those used in the program. See an advisor for assistance.*

***Recommended MACRAO approved social science courses: SOC 100, ECO 211 or ECO 222.*

****Students transferring to EMU should consider taking either COM 225 or an Arts and Humanities Elective that should meet EMU's Diverse World Requirement. See the list located at: http://www4.wccnet.du/academicinfo/creditofferings/courses/emucrosscultural/*

#Students transferring to EMU in the Environmental Science program should select GLG 276.

Requirements Environmental Science (ENV1)

First Semester			
Elective(s)		Computer and Information Literacy	3
ENG 111		Composition I	4
GLG 114		Physical Geography	4
MTH 178		General Trigonometry	3
Total			**14**
Second Semester			
BIO 162		General Biology II Cells and Molecules	4
ENG 226		Composition II	3
ENV 101		Environmental Science I	4
GEO 101		World Regional Geography	3
Total			**14**
Third Semester			
CEM 111		General Chemistry I	4
ENV 105		Introduction to Environment and Society	3
MTH 160		Basic Statistics	4
Elective		MACRAO approved Social Science*	3
Total			**14**
Fourth Semester			
PHL 205		Ethics	3
PHY 111		General Physics I	4
PLS 112		Introduction to American Government	3
Total			**10**
Fifth Semester			
Elective(s)		Arts and Humanities*	3
COM 101	or	Fundamentals of Speaking	
COM 183	or	Persuasion	
COM 225		Intercultural Communication *	3
ENV 201		Environmental Science II	4
Total			**10**
Total Credits Required		**62 - 63**	**62**

Footnotes

* Recommended MACRAO Approved Social Science Courses are SOC 100, ECO 211 or ECO 222.

Requirements Environmental Science and Society (ENV 2)

First Semester

Elective(s)		Computer and Information Literacy	3
ENG 111		Composition I	4
SOC 100		Principles of Sociology	3
GLG 100		Introduction to Earth Science	4
Total			14

Second Semester

BIO 162		General Biology II Cells and Molecules	4
ENG 226		Composition II	3
ENV 101		Environmental Science I	4
GEO 101		World Regional Geography	3
Total			14

Third Semester

Class		Title	Credits
CEM 111		General Chemistry I	4
ENV 105		Introduction to Environment and Society	3
MTH 160		Basic Statistics	4
Elective		Elective to meet a minimum of 60 credit hours[1]	3
Total			14

Fourth Semester

PHL 205		Ethics	3
BIO 161		General Biology I Ecology and Evolution	4
PLS 112		Introduction to American Government	3
Total			10

Fifth Semester

Elective(s)		Arts and Humanities*	3
COM 101	or	Fundamentals of Speaking	
COM 183	or	Persuasion	
COM 225		Intercultural Communication *	3
ENV 201		Environmental Science II	4
Total			10

Total Credits Required	
62 - 63	62

Footnotes

[1] Students who wish to transfer to EMU in the Environmental Sciencee program may wish to select GLG 276.

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: ASENVS **Program Name: ENVIRONMENTAL SCIENCE PROGRAM** **Effective Term: FALL 2012**

Division Code: MNBS **Department: PHYSICAL SCIENCE**

Directions:

1. Attach the current program listing from the WCC catalog or Web site 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 a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☒ Remove course(s): SOC 100, ECO 211, ECO 222
- ☒ Add course(s): Required: GEO 101 (Gen Ed); Electives: BIO 208, BIO 215, BIO 237, BIO 267, ECO 211, ECO 222, ELE 106, GLG 114 and SOC 100 (Area/Major Electives)
- ☐ Program title (title was _____)
- ☐ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☐ Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:

These changes were made to align with the program requirements of area colleges and to allow WCC students additional elective options to complete this program and enhance their studies.

Financial/staffing/equipment/space implications:

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

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Suzanne M. Albach	Suzanne M Albach	03/19/2012
Department Chair	Kathleen Butcher	Kathleen Butcher	03/21/2012
Division Dean/Administrator	Martha Showalter	M. Showalter	3/23/12
Vice President for Instruction		[signature]	4/11/12
President			

Do not write in shaded area. Entered in: Banner_____ C&A Database 4/20/12 Log File 4/20/12 Board Approval _____

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

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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.

Business (AABAS)
Computer Science: Programming in Java (See Information Technology)
Criminal Justice (AACJ)
Education, Early Childhood (AAECE)
Education, Elementary (AAELEM)
Education, Secondary (AASECO)
Environmental Science (ASENVS)
Exercise Science (ASESCI)
General Studies in Math and Natural Sciences (ASGSMS)
Human Services (AAHUST)
Information Systems: Programming in C++ (See Information Technology)
Internet Professional (AAINP)
Liberal Arts Transfer (AALAT)
Math and Science (ASMSAS)

1. Pre-Medicine Concentration (BMED) or (CMED)
2. Computer Science Concentration (COMS)
3. Mathematics Concentration (MATH)
4. Physics/Pre-Engineering Concentration (PHYS)

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.

Math and Science

Learn more about math or science through this associate degree program.

Program Information Report

Environmental Science (ASENVS)

Associate in Science Degree

Program Effective Term: Fall 2012

To prepare our students for a strong background in dealing with environmental issues and concerns from a global point of view. This program integrates biology, chemistry, geology and physics and is designed to lead to an AS degree which should transfer to 4-year institutions following the MACRAO guidelines. This program is designed to give students first hand lab experiences in studying environmental problems from a scientific perspective as well as propose and implement solutions to sustainability. It is ultimately preparing students for careers in resource management, waste management, sustainability, environmental consultation and the like.

ENG 111	Composition I	4
GLG 100	Introduction to Earth Science	4
MTH 178	General Trigonometry	3
	Computer Lit. Elective(s)	3
BIO 101	Concepts of Biology	4
ENG 226	Composition II	3
ENV 101	Environmental Science I	4
GEO 101	World Regional Geography	3
CEM 111	General Chemistry I	4
CPS 120 or	Introduction to Computer Science	
CPS 161 or	An Introduction to Programming with Java	
CPS 171	Introduction to Programming with C++	3-4
MTH 160	Basic Statistics	4
PHL 205	Ethics	3
PHY 111	General Physics I	4
PLS 112	Introduction to American Government	3
Elective	Choose a minimum of 3 credits: BIO 102, BIO 103, BIO 107, BIO 208, BIO 215, BIO 227, BIO 228, BIO 237, BIO 267, CEM 122, CEM 211, CEM 222, ECO 211, ECO 222 ELE 106, GLG 103, GLG 104, GLG 114, PHY 122, SOC 100 or a Social Science MACRAO elective**	3
COM 101 or	Fundamentals of Speaking	
COM 183 or	Persuasion	
COM 225	Intercultural Communication*	3
ENV 201	Environmental Science II	4
	Arts/Human. Elective(s)*	3

Minimum Credits Required for the Concentration or Option:

Minimum Credits Required for the Program: **62**

Notes:

**Students transferring to EMU should consider taking either COM 225, GEO 101 or an Arts and Humanities Elective that should meet EMU's Diverse World Requirement. See the WCC Bulletin for a list of courses.*
***Students who want to meet MACRAO should choose a social science MACRAO course as one of the electives. See the MACRAO list in the WCC Bulletin to make course selections.*

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.

Program Name:	Environmental Science Program	**Program Code:**
Division and Department:	Math, Natural and Behavioral Science MNBS Physical Science Department	ASENVS
Type of Award:	☐ AA ☒ AS ☐ AAS ☐ Cert. ☐ Adv. Cert. ☐ Post-Assoc. Cert. ☐ Cert. of Comp.	
Effective Term/Year:	Fall 2010	**CIP Code:**
Initiator:	Martha Showalter and the Environmental Science Committee Sue Albach, Rob Hagood, Susan Dentel, Emily Thompson, Tracy Schwab, Brad Metz, Kathleen Strnad	

Program Features Program's purpose and its goals. Criteria for entry into the program, along with projected enrollment figures. Connection to other WCC programs, as well as accrediting agencies or professional organizations. Special features of the program.	To prepare our students for a strong background in dealing with environmental issues and concerns with a global point of view. This program integrates biology, chemistry, geology and physics and is designed to lead to an AS degree which should transfer to 4-year institutions following the MACRAO guidelines. This program is designed to give students first hand lab experiences in studying environmental problems from a scientific perspective. It is ultimately preparing students for careers in resource management, waste management, sustainability, environmental consultation and the like. Students entering this program should anticipate taking courses in Biology, Chemistry, Geology and Physics. No special requirement is required for enrollment in the program. This program utilizes existing courses that have been reviewed and articulated to 4-year institutions. In addition, there are two specialized environmental science courses. It is expected that the first course could meet a General Education lab science course requirement and be offered every semester while the follow-up Environmental Science course would initially be offered on an annual basis.
Need Need for the program with evidence to support the stated need.	WCC has committed to building/renovating its buildings to meet LEED specifications. In addition, the President has signed the ACUPCC (American College and University Presidents Climate Commitment). Not only has WCC taken these strong stances on global concerns but the science faculty feel it is imperative that we address through our offerings courses and programs which impact future generations. The Bureau of Labor Statistics has cited Environmental Science as an area of growth, saying, "employment of environmental scientists and specialists is expected to increase by 28 percent between 2008 and 2018, much faster than the average for all occupations." http://www.bls.gov/oco/ocos311.htm (document attached)

Program Outcomes/Assessment	Outcomes	Assessment method
State the knowledge to be gained, skills to be learned, and attitudes to be developed by students in the program. Include assessment methods that will be used to determine the effectiveness of the program.	1. **Students will successfully transfer to a four-year college in a related program** 2. **Students will perform successfully at a four-year college in a related program**	1. **WCC follow-up graduation survey data. Transfer data from EMU.** 2. **WCC follow-up graduation survey data. Transfer data from EMU.**

Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to **sjohn@wccnet.edu** for posting on the website.

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.

General Education Requirements		**(33 Credits)**
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking (or COM 183 or COM 225)[1]	3
MTH 178	Trigonometry	3
BIO 101	Concepts of Biology	4
GLG 100	Introduction to Earth Science	4
SOC 100	Introduction to Sociology (or ECO 211 or ECO 222 or GEO 101) [1]	3
PLS 112	Introduction to American Government	3
PHL 205	Ethics	3
Arts/Hum	Elective(s) [1]	3

Major/Area Requirements		**(15 or 16 Cr)**
CPS 120	Introduction to Programming (or CPS 161 or CPS 171)	3 or 4
MTH 160	Statistics	4
CEM 111	General Chemistry I	4
PHY 111	General Physics I	4

Environmental Science—Program Concentration		**(8 credits)**
ESC 101	**Environmental Science I**	**4**
ESC 201	**Environmental Science II**	**4**

Choose from the following Electives **(at least 6 Credits)**

BIO 103, BIO 102, BIO 107, BIO 227, BIO 228
CEM 122, CEM 211, CEM 222
GLG 104, GLG 103
PHY 122
Social Science MACRAO elective (must be taken if MACRAO is desired) [2]

TOTAL MINIMUM CREDITS FOR THE PROGRAM **62**

	Notes: [1]For those wishing to transfer to EMU, consider taking either COM 225, GEO 101 or an Arts and Humanities Elective that should meet EMU's diverse world requirement. (See page [75] of the WCC Bulletin for a list of courses). [2]For those who would like to meet MACRAO, a Social Science MACRAO course must be chosen as one of your electives. BIO 107 transfers to EMU as their BIO 105 (both with same title) Our GLG 103 and 104 each transfer as ESSC 000 (general transfer credit)

Budget

Specify program costs in the following areas, per academic year:

	START-UP COSTS	ONGOING COSTS
Faculty	$.	$.
Training/Travel	.	.
Materials/Resources	.	.
Facilities/Equipment	.	.
Other	.	.
TOTALS:	$.	$.

Program Description for Catalog and Web site

To prepare our students for a strong background in dealing with environmental issues and concerns from a global point of view. This program integrates biology, chemistry, geology and physics and is designed to lead to an AS degree which should transfer to 4-year institutions following the MACRAO guidelines. This program is designed to give students first hand lab experiences in studying environmental problems from a scientific perspective as well as propose and implement solutions to sustainability. It is ultimately preparing students for careers in resource management, waste management, sustainability, environmental consultation and the like.

Program Information

Accreditation/Licensure -

Advisors -

Advisory Committee -

Admission requirements -

Articulation agreements -

Continuing eligibility requirements -

Assessment plan:

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
1. Students will successfully transfer to a four-year college in a related program	1. WCC follow-up graduation survey data. Transfer data from EMU.	Winter 2014 & every 3 years thereafter	Random selection from students who completed the program within the past three years	Approximately 50% of the graduates
2. Students will perform successfully at a four-year college in a related program	2. WCC follow-up graduation survey data. Transfer data from EMU.	Winter 2014 & every 3 years thereafter	Random selection from students who completed the program within the past three years	Approximately 50% of the graduates

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.

   EMU transfer data will be generated by Eastern Michigan University. Faculty in the Science departments at WCC will review the data to determine transfer rate and transfer success statistics. Graduate survey data is collected and generated by Institutional Research. This self-reported supplemental data will be used to identify students who successfully transfer to institutions other than EMU.

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

   60% of the students will have enrolled in further education within two years.
   60% of the students who transfer to EMU will demonstrate success (earn a grade of "C" or better) in related courses in the science area.

3. Indicate who will score and analyze the data.

   Faculty volunteers from the Life and Physical Science departments

4. Explain how and when the assessment results will be used for program improvement.

   Assessment data will be reviewed during divisional meetings. Areas of weakness will be identified and changes made to course or program requirements will be implemented as needed.

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/Area Director	Emily A. Thompson Suzanne Albach	Emily A Thompson Suzanne M Albach	2/1/2010 2/1/2010
Dean	Martha Showalter	Martha Showalter	2/1/2010
Vice President for Instruction ☐ Approved for Development ☒ Final Approval	Phyllis Grzegorczyk	Phyllis Grzegorczyk	2-26-2010
President	Larry Whitworth	Larry Whitworth	4/7/10
Board Approval			Approved

Office of Curriculum & Assessment logged 4/1/10 gj