Assessment plan: ASCSPJ

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
Object Oriented Foundations: At the conclusion of this program, students will be able to identify and analyze java foundational concepts such as inheritance, polymorphism, interfaces, abstract classes, exceptions, overloading, etc.	Common final examination to be prepared by the CIS department	Once every three years beginning Fall 2011.	Minimum of one section of CPS 261	Random assortment of 10 or more students.
Data Structures: At the conclusion of this program students will be able to identify and analyze java data structures such as ArrayList, LinkedList, TreeMap, HashMap, etc.	Common final examination to be prepared by the CIS department	Once every three years beginning Fall 2011	Minimum of one section of CPS 261	Random assortment of 10 or more students.
Advanced Topics: At the conclusion of this program, students will be able to identify and analyze Multi-tasking concepts, I/O streams, and networking.	Common final examination to be prepared by the CIS department	Once every three years beginning Fall 2011	Minimum of one section of CPS 261	Random assortment of 10 or more students.
Sound Programming Practices: At the conclusion of this program, students will demonstrate sound software engineering techniques in developing a working software program. This will include creating a program that is logical, easy to understand, with properly indented code to solve a stated problem.	Common final examination to be prepared by the CIS department	Once every three years beginning Fall 2011	Minimum of one section of CPS 261	Random assortment of 10 or more students.

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.

   Departmentally developed rubric. See attached.

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

   At least 75% of students must score at least 70% or better on all learning outcome evaluations.

3. Indicate who will score and analyze the data.

   Assessment materials will be analyzed by the CIS Department.

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

   If the standard of success is not achieved then the program will be evaluated.

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/Area Director	Clarence Hasselbach	Clarence Hasselbach	10/31/2008
Dean	Rosemary Wilson	Rosemary Wilson	10/31/08
Vice President for Instruction ☐ Approved for Development ☒ Final Approval	Roger M. Paley	Roger M. Paley	12/3/08
President	Larry Whitworth	Larry Whitworth	4/28/09
Board Approval			04/28/09

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:	Computer Science Transfer Degree	**Program Code:**
Division and Department:	BCT - CISD	ASCSCT
Type of Award:	☐ AA ☒ AS ☐ AAS ☐ Cert. ☐ Adv. Cert. ☐ Post-Assoc. Cert. ☐ Cert. of Comp.	
Effective Term/Year:	200901	**CIP Code:**
Initiator:	Clarence Hasselbach and Neil Gudsen	11.0201

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.	This program has been developed in cooperation with the Computer Science Department of Eastern Michigan University and is intended to serve primarily as a transfer degree into the undergraduate Computer Science and Applied Computer Science programs at EMU. The requirements for this program have been kept simple, and it is the objective of this program to allow students to complete the program as rapidly as possible and thus enable a quick transition to the undergraduate programs in Computer Science at EMU.
Need Need for the program with evidence to support the stated need.	"Research from **Robert Half International** and others suggests that not only will **IT salaries** increase slightly in 2009, but also that IT professionals with key skills could find themselves in demand .... The professional staffing and consulting firm estimates that IT salaries could increase by about 3.7 percent next year...." Source: CIO Magazine, October 24, 2008 http://www.cio.com/article/456568/IT_Salaries_Expected_to_Rise_in_

Program Outcomes/Assessment 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.	Outcomes	Assessment method
	1. Object Oriented Foundations: At the conclusion of this program, students will be able to identify and analyze java foundational concepts such as inheritance, polymorphism, interfaces, abstract classes, exceptions, overloading, etc.	Common departmentally created final exam.
	2. Data Structures: At the conclusion of this program, students will be able to identify and analyze java data structures such as ArrayList, LinkedList, TreeMap, HashMap, etc.	Common departmentally created final exam.
	3. Advanced Topics: At the conclusion of this program, students will be able to identify and analyze Multi-tasking concepts, I/O streams, and networking.	Common departmentally created final exam.
	4. Sound Programming Practices: At the conclusion of this program, students will demonstrate sound software engineering techniques in developing a working software program. This will include creating a program that is logical, easy to understand, with properly indented code to solve a stated problem.	Common departmentally created final exam.

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 and MACRAO Requirements:**		**33-34 Credits**
	ENG 111 Composition I	4	
	ENG 226 Composition II	3	
	COM 225[i] [1]Intercultural Communication	3	
	MTH 176[ii] College Algebra (Must complete at WCC)	4	
	Complete one of the following	4-5	
	CEM 111 General Chemistry (4)		
	GLG 114 Physical Geology (4)		
	PHY 211 Analytical Physics I (5)		
	Soc. Sci. Elective(s) *	9	
	Arts and Humanities Elective(s) **	6	
	Major/Area requirements		**14-15 credits**
	CIS 100 intro to Software Applications	3	
	CPS 161 An Introduction to Programming with Java	4	
	CPS 261 Programming Data Structures in Java	4	
	Complete one course:	3-4	
	CIS 121 Unix/Linux Fundamentals (3)		
	CIS 282 Relational Database Concepts & Application (3)		
	CPS 120 Intro to Computer Science (3)		
	CPS 293 C# .Net (4)		
	CPS 171 Introduction to Programming with C++ (4)		
	CPS 271 Programming with C++ (4)		
	CIS 221 Linux/Unix Programming/Scripting I (3)		
	INP 150 Web coding I (3)		
	Support Courses:		**8 credits**
	MTH 191 Calculus I	5	
	Open Elective	3	
	Minimum Options credits for program (select one)		**9 credits**
	EMU's Comprehensive Comp. Sci. Degree:	**12credits**	
	MTH 192 Calculus II	4	
	MTH 197 Linear Algebra	4	
	Complete a second course in a sequence	4-5	
	CEM 122 General Chemistry II (4)		
	GLG 125 Historical Geology (4)		
	PHY 222 Analytical Physics II (5)		
	EMU's Applied Computer Science Major :	**9 Credits**	
	Open Electives	9-12	
	Other Institution Option:	**9 credits**	
	Open Electives	9 – 12 credits	
	Total Program Credit Hours		**64-70 Credits**
	*Complete 3 courses from at least 2 disciplines. Choose from courses approved by WCC to satisfy the MACRAO social science requirement **Choose from courses approved by WCC to satisfy the MACRAO humanities requirement		

[i] *Satisfies EMU's Perspectives on a Diverse World Requirement.*

ii *MTH 176 should be completed at WCC to satisfy EMU's Quantitative Reasoning Requirement. If completed at EMU, MATH 110 will be required unless waived by ACT/SAT or math placement score.*

Budget Specify program costs in the following areas, per academic year:		START-UP COSTS	ONGOING COSTS
	Faculty	No new costs	No new costs
	Training/Travel	No new costs	No new costs
	Materials/Resources	No new costs	No new costs
	Facilities/Equipment	No new costs	No new costs
	Other	No new costs	No new costs
	TOTALS:	No new costs	No new costs
Program Description for Catalog and Web site	This program prepares students to transfer to complete a bachelor's degree in Computer Science or Applied Computer Science and to pursue careers in computer science fields such as computer systems programming and analysis, software development and maintenance, and applications programming.		
Program Information	**Accreditation/Licensure** - None **Advisors** – Clarence Hasselbach, Philip Geyer, Khaled Mansour **Advisory Committee** - CIS Advisory Committee **Admission requirements** – Academic Math Level 4 or higher to enroll in MTH 176 **Articulation agreements** – In progress with Eastern Michigan University **Continuing eligibility requirements** – None		

Assessment plan:

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   Departmentally developed rubric. See attached.

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

   At least 75% of students must score at least 70% or better on all learning outcome evaluations.

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President	Larry Whitworth	Larry Whitworth	4/28/09
Board Approval			04/28/09

Logged 11/3/08 SJ/gv
Office of Curriculum & Assessment

Program Information Report

Computer Science Transfer (ASCSCT)

Associate in Science Degree

Program Effective Term: Fall 2009

This program prepares students to transfer to Eastern Michigan University to complete a bachelor's degree in Computer Science or Applied Computer Science and to pursue careers in computer science fields such as computer systems programming and analysis, software development and maintenance, and applications programming.

Articulation:
Eastern Michigan 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.

Program Admission Requirements:
Students need an Academic Math Level of 4 or higher to enroll in MTH 176.

General Education Requirements		**(33 credits)**
ENG 111 and	Composition I	4
ENG 226	Composition II	3
COM 225	Intercultural Communication*	3
MTH 176	College Algebra**	4
CEM 111 or	General Chemistry I	
GLG 114 or	Physical Geology	
PHY 211	Analytical Physics I	4-5
Soc. Sci.	Elective(s)***	9
Arts/Human.	Elective(s)****	6
Major/Area Requirements		**(14 credits)**
CIS 100	Introduction to Computers and Software Applications	3
CPS 161	An Introduction to Programming with Java	4
CPS 261	Programming Data Structures in Java	4
Elective	Complete one course from: CIS 121, CIS 221, CIS 282, CPS 120, CPS 171, CPS 271, CPS 293, or INP 150.	3-4
Required Support Courses		**(5 credits)**
MTH 191	Calculus I	5
Required Courses		**(12 credits)**
Elective	Minimum elective credits required for the program. Students must complete 100-level or above transferrable courses. *****	12-15

Minimum Credits Required for the Program: **64**

Notes:

**Satisfies EMU's Diverse World Requirement.*
***MTH 176 should be completed at WCC to satisfy EMU's Quantitative Reasoning Requirement. If completed at EMU, MATH 110 will be required unless waived by ACT/SAT or math placement score.*
****Choose three courses from at least two disciplines.*
*****Students transferring to a four-year institution should choose a lab-based, MACRAO-approved science course.*
******Students intending to transfer to EMU to complete the Comprehensive Computer Science Degree must take the following courses: MTH 192, MTH 197 and a second course in a sequence: CEM 122, GLG 125, or PHY 222.*

Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.