Assessment plan: AS15PC

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
C++Foundations: At the conclusion of this program, students will be able to identify and analyze C++ object Oriented techniques such as exceptions, operator overloading, polymorphism, and templates.	Common final examination to be prepared by the CIS department	Once every three years beginning Winter 2012	Minimum of one section of CPS 272	Random selection of 10 or more students.
Data Structures using STL: At the conclusion of this program, students will be able to identify and analyze STL data structures such as vectors, stacks, linked lists, queues, trees and hash maps.	Common final examination to be prepared by the CIS department	Once every three years beginning Winter 2012	Minimum of one section of CPS 272	Random selection of 10 or more students.
Recursive Algorithms: At the conclusion of this program, students will be able to identify and analyze the efficiency of recursive algorithms.	Common final examination to be prepared by the CIS department	Once every three years beginning Winter 2012	Minimum of one section of CPS 272	Random selection 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 Winter 2012	Minimum of one section of CPS 272	Random selection 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, 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	12/2/08
President	Larry Whitworth	Larry Whitworth	4/28/09
Board Approval			04/28/09

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

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[i] Meets EMU's Learning beyond the Classroom requirement.

logged 11/3/08 JJ

Office of Curriculum & Assessment

Washtenaw Community College

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:	Information Systems Transfer Degree	**Program Code:** ASIST
Division and Department:	BCT - CISD	
Type of Award:	☐ AA ☒ AS ☐ AAS ☐ Cert. ☐ Adv. Cert. ☐ Post-Assoc. Cert. ☐ Cert. of Comp.	
Effective Term/Year:	200901	**CIP Code:** 11.0103
Initiator:	Clarence Hasselbach and Neil Gudsen	

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 faculty of the College of Business of Eastern Michigan University and is intended to serve primarily as a transfer degree into the undergraduate Computer Information Systems program 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 Information Systems 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. C++ Foundations: At the conclusion of this program, students will be able to identify and analyze C++ Object Oriented techniques such as exceptions, operator overloading, polymorphism, and templates.	1. Common departmentally created final exam.
	2. Data Structures using STL: At the conclusion of this program, students will be able to identify and analyze STL data structures such as vectors, stacks, linked lists, queues, trees and hash maps.	2. Common departmentally created final exam.
	3. Recursive Algorithms: At the conclusion of this program, students will be able to identify and analyze the efficiency of recursive algorithms.	3. 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.	4. Common departmentally created final exam.

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**

1. English Writing Requirement **(7 credits)**
ENG 111 Composition I 4
ENG 226 Composition II 3

2. Math/Science Requirement **(8-9 credits)**
MTH 181[i] Mathematical Analysis (Must complete at WCC) 4
Complete one course* 4
*Choose from courses approved by WCC to satisfy the MACRAO lab science requirement.

3. Social Science Requirement **(9 credits)**
ECO 211 Principles of Economics I 3
ECO 222 Principles of Economics II 3
Complete one course: See note below 3
Choose from courses approved by WCC to satisfy the MACRAO Social Science requirement

4. Humanities Requirement **(9 credits)**
Complete one course: (WCC Speech Requirement) 3
COM 101, 102, 142, 183, 200 or 225
Complete one course: PHL 205 or 250 strongly recommended 3
Choose from courses approved by WCC to satisfy the MACRAO Humanities requirement
Complete one course: 3
Choose from courses approved by WCC to satisfy the MACRAO Humanities requirement

WCC Program Requirements **27 Credits**

Major/Area requirements **(18 credits)**
CIS 110 Intro to Computer Information Systems 3
CIS 121 Unix/Linux Fundamentals 3
CPS 171 Intro to Programming with C++ 4
CPS 271 Object Features of C++ 4
CPS 272 Data Structures with C++ 4

Support Courses: **(9 credits)**
BMG 106 Legal Basics in Business 3
BMG 140 Introduction to Business 3
BMG 200 Human Relations in Business 3

Total Program Hours **60-61 Credits**
[1] **Meets EMU's Learning beyond the Classroom requirement.**

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 Business Administration with a Major in Computer Information Systems. Undergraduates and graduates of CIS programs are prepared to create and maintain information systems for organizations, manage information systems projects, and develop strategies for effective use of enterprise information resources.
Program Information	**Accreditation/Licensure** - None **Advisors** – Clarence Hasselbach, Philip Geyer, Khaled Mansour **Advisory Committee** - CIS Advisory Committee **Admission requirements** - Students will need to achieve academic math level 4 to enroll in MTH 181. **Articulation agreements** – In progress with Eastern Michigan University **Continuing eligibility requirements** - None

Assessment plan:

Program outcomes to be assessed	Assessment tool	When assessment will take place	Courses/other populations	Number students to be assessed
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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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Office of Curriculum & Assessment

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)
Criminal Justice (AACJ)
Digital Video Production (AADVP)
Educaton, Elementary (AAELEM)
Education, Secondary (AASECO)
Exercise Science (ASESCI)
Human Services (AAHUST)
Liberal Arts Transfer (AALAT)
Math and Science (ASMSAS)

1. Pre-Medicine Concentration (BMED)
2. Mathematics/Computer Science Concentration (COMS)
3. 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.

Systems Development and Administration

Develop and manage computer systems using universal operating systems.

Information Systems Transfer (ASIST)

Associate in Science Degree

Program Effective Term: Fall 2009

This program prepares students to transfer to complete a bachelor's degree in business administration with a major in computer information systems. Undergraduates and graduates of CIS programs are prepared to create and maintain information systems for organizations, manage information systems projects, and develop strategies for effective use of enterprise information resources.

Program Admission Requirements:
Academic Math Level 4 or higher to enroll in MTH 181.

General Education Requirements		(33 credits)
ENG 111 and	Composition I	4
ENG 226	Composition II	3
Speech	Elective(s)*	3
MTH 181	Mathematical Analysis I**	4
Nat. Sci.	Elective(s)***	4
ECO 211 and	Principles of Economics I	3
ECO 222	Principles of Economics II	3
Arts/Human.	Elective(s)****	9

Major/Area Requirements		(18 credits)
CIS 110	Introduction to Computer Information Systems	3
CIS 121	Linux/UNIX I: Fundamentals	3
CPS 171	Introduction to Programming with C++	4
CPS 271	Object Features of C++	4
CPS 272	Data Structures with C++	4

Required Support Courses		(9 credits)
BMG 106	Legal Basics in Business	3
BMG 140	Introduction to Business	3
BMG 200	Human Relations in Business	3

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

Notes:

Program Information Report

**See the EMU Diverse World Requirement list.*
***MTH 181 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.*
****Students transferring to a 4-yr institution should choose a lab-based, MACRAO-approved science course.*
*****PHL 205 or PHL 250 are strongly recommended.*

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

Information Systems Transfer Degree

Associate Degree

Description:

This program prepares students to transfer to Eastern Michigan University to complete a bachelor's degree in Business Administration with a Major in Computer Information Systems. Undergraduates and graduates of CIS programs are prepared to create and maintain information systems for organizations, manage information systems projects, and develop strategies for effective use of enterprise information resources.

General Education and MACRAO Requirements: **33-34 Credits**

1. **English Writing Requirement (7 credits)**
   - ENG 111 Composition I 4
   - ENG 226 3

2. **Math/Science Requirement (8-9 credits)**
   - MTH 181[1] Mathematical Analysis (Must complete at WCC) 4
   - Complete one course* 4
     - Choose from courses approved by WCC to Satisfy the MACRAO lab science requirement

3. **Social Science Requirement (9 credits)**
   - ECO 211 Principles of Economics I 3
   - ECO 222 Principles of Economics II 3
   - Complete one course: See note below 3
     - Choose from courses approved by WCC to satisfy the MACRAO Social Science requirement

4. **Humanities Requirement (9 credits)**
   - Complete one course: (WCC Speech Requirement) 3
     - COM 101, 102, 142, 183, 200 or 225
   - Complete one course: PHL 205 or 250 strongly recommended 3
     - Choose from courses approved by WCC to satisfy the MACRAO Humanities requirement
   - Complete one course: See note below 3
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WCC Program Requirements **27 Credits**

Major/Area requirements (18 credits)

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- CPS 272 Data Structures with C++ 4

Support Courses: (9 credits)

BMG 106 Legal Basics in Business 3
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Total Program Hours **60-61 Credits**

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