

**Program Information Report**

**Program in Java (CVJVPR)**

**Advanced Certificate**

**Program Effective Term: Fall 2013**

This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.

**Program Admission Requirements:**

Prior programming experience is recommended. Students who have no programming experience should consider taking CPS 120.

CPS 161	An Introduction to Programming with Java	4
CPS 261	Advanced Java Concepts	4
Elective	Select two of the following courses: CPS 251, CPS 255, CPS 278.	8

**Minimum Credits Required for the Program: 16**

**PROGRAM CHANGE OR DISCONTINUATION FORM**

Program Code: CVJAV Program Name: Programming in Java

Effective Term: Fall 2012

Division Code: BCT Department: CPS CISD

**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:**

<input type="checkbox"/> Review	<input type="checkbox"/> Program admission requirements
<input type="checkbox"/> Remove course(s): _____	<input type="checkbox"/> Continuing eligibility requirements
<input type="checkbox"/> Add course(s): _____	<input type="checkbox"/> Program outcomes
<input type="checkbox"/> Program title (title was _____)	<input type="checkbox"/> Accreditation information
<input type="checkbox"/> Description	<input type="checkbox"/> Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
<input type="checkbox"/> Type of award	<input checked="" type="checkbox"/> Other Admission Requirements _____
<input type="checkbox"/> Advisors	
<input type="checkbox"/> Articulation information	

Show all changes on the attached page from the catalog.

**Rationale for proposed changes or discontinuation:**  
 Remove the requirement for completion of the Foundations of Information Systems. It was a mistake to have this as a requirement as the 2 certificates have very little to do with each other.

**Financial/staffing/equipment/space implications:**

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

**Signatures:**

Reviewer	Print Name	Signature	Date
Initiator	Clarence Hasselbach	<i>Clarence Hasselbach</i>	2/1/12
Department Chair	Clarence Hasselbach	<i>Clarence Hasselbach</i>	2/1/12
Division Dean/Administrator	Rosemary Wilson	<i>Rosemary Wilson</i>	2/1/12
Vice President for Instruction	Stuart Blacklow	<i>Stuart Blacklow</i>	3-12-12
President			

Do not write in shaded area. Entered in: Banner \_\_\_\_\_ C&A Database 4/5/12 Log File 4/5/12 Board Approval \_\_\_\_\_

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

*for none logged 2/1/12 sjv*

**Program Information Report**

**School of Information Technology**

The School of Information Technology gathers the diverse areas that make up the computer technology of today. From basic programming languages to systems development through networking, these programs provide the core of information technology. Develop skills in computer networking or programming in the growing field of applied information technology.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate (if it exists) and General Education requirements.

**Programming**

Learn the foundation of computer programming or specialize in a programming language through these programs.

**Programming in Java (CVJAV)**

**Advanced Certificate**

**Program Effective Term: Fall 2012**

This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.

**Program Admission Requirements:**

Prior programming experience is recommended. Students who have no programming experience should consider taking CPS 120.

CPS 161	An Introduction to Programming with Java	4
CPS 261	Advanced Java Concepts	4
CPS 251 or CPS 278	Android Programming Using Java Java Server Programming	4

**Minimum Credits Required for the Program: 12**

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code:                      Program Name: **Programming in Java (CVJAV)**                      Effective Term: **Fall 2011**  
 Division Code:                      Department: **CPS**

**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:**

- |  |   |
|--|---|
| <input type="checkbox"/> Review<br><input checked="" type="checkbox"/> Remove course(s): <u>CIS121, CIS221, CIS282, CPS120, CPS171, CPS271, CPS293, INP150</u><br><input checked="" type="checkbox"/> Add course(s): <u>      cps251 or cps278</u><br><input type="checkbox"/> Program title (title was _____)<br><input type="checkbox"/> Description<br><input type="checkbox"/> Type of award<br><input type="checkbox"/> Advisors<br><input type="checkbox"/> Articulation information | <input type="checkbox"/> Program admission requirements<br><input type="checkbox"/> Continuing eligibility requirements<br><input type="checkbox"/> Program outcomes<br><input type="checkbox"/> Accreditation information<br><input type="checkbox"/> Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)<br><input type="checkbox"/> Other _____ |
|--|---|

Show all changes on the attached page from the catalog.

**Rationale for proposed changes or discontinuation:**

The Programming in Java(CVJAV) certificate should have 3 courses required. The first 2 are CPS161 and CPS261. The third course is either CPS251 or CPS278 (previous name CIS278). Remove the previous choice for the third course which was a pick from the list(CIS121, CIS221, CIS282, CPS120, CPS171, CPS271, CPS293, or INP150)

When we created this certificate we didn't have a Java-related third course that received consistent enrollment. CPS278 and CPS251 are java courses that we believe should receive sufficient enrollment to work for this certificate.

**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	Clarence Hasselbach	<i>Clarence Hasselbach</i>	11/24/10
Department Chair	Clarence Hasselbach	<i>Clarence Hasselbach</i>	11/24/10
Division Dean/Administrator	Rosemary Wilson	<i>Rosemary Wilson</i>	11/29/10
Vice President for Instruction	Stuart Blacklaw	<i>Stuart Blacklaw</i>	1/18/11
President			

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*3/4/11*

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# Certificates & Degrees

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## Programming in Java (CVJAV)

Advanced Certificate

Program requirements shown below are for catalog year: 2010 - 2011 [Change Year](#)

### Description:

This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.

### Contact Information:

Division: Business and Computer Technologies  
 School: [School of Information Technology](#)  
 Department: [Computer Instruction](#)  
 Advisors: [Philip Geyer](#), [Clarence Hasselbach](#), [Khaled Mansour](#)

### Admission Requirements:

Completion of the Foundations of Information Systems certificate or equivalent.

### Major/Area Requirements

**(11 - 12 Credits)**

CPS 161 \* An Introduction to Programming with Java 4

CPS 261 \* Programming Data Structures in Java 4

Complete one course from the following: ~~CPS 121, CPS 221, CPS 287, CPS 120, CPS 171, CPS/271, CPS/293 or IMP 150.~~ 3-4

CPS 251 Android Java ~~Program~~ OR CPS 278 Server Side Java 4

**Minimum Credits Required for the Program: 11 - 12 Credits**

### Footnotes:

\*See the Eastern Michigan University Web site for transfer equivalency: <http://it.emich.edu/service/online/tranequiv/>

This website is for informational purposes only and is not to be construed as a binding offer or contract between WCC and the student. The information presented here is believed accurate, but is NOT guaranteed and is subject to change without notice.

For official information, [see an Advisor](#).

**Program Information Report**

**School of Information Technology**

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After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate and General Education requirements.

**Programming**

Learn the foundation of computer programming or specialize in a programming language through these programs.

**Programming in Java (CVJAV)**

**Advanced Certificate**

**Program Effective Term: Fall 2011**

This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.

**Program Admission Requirements:**

Completion of the Foundations of Information Systems certificate or equivalent.

<b>Major/Area Requirements</b>		<b>(12 credits)</b>
CPS 161	An Introduction to Programming with Java*	4
CPS 261	Programming Data Structures in Java*	4
CPS 251 or	Android Programming Using Java	4
CPS 278	Java Server Programming	4

**Minimum Credits Required for the Program: 12**

**Notes:**

\*See the Eastern Michigan University Web site for transfer equivalency: <http://it.emich.edu/service/online/tranequiv/>.

**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.

<b>Program Name:</b>	<u>Programming in Java</u>		<b>Program Code:</b>  <u>CVJAY</u>  <b>CIP Code:</b>  <u>11.0202</u>
<b>Division and Department:</b>	<u>BCT - CISD</u>		
<b>Type of Award:</b>	<input type="checkbox"/> AA <input type="checkbox"/> AS <input type="checkbox"/> AAS <input type="checkbox"/> Cert. <input checked="" type="checkbox"/> Adv. Cert. <input type="checkbox"/> Post-Assoc. Cert. <input type="checkbox"/> Cert. of Comp.		
<b>Effective Term/Year:</b>	<u>200901</u>		
<b>Initiator:</b>	<u>Clarence Hasselbach and Neil Gudsen</u>		
<b>Program Features</b> 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 an effort to consolidate and streamline certificate offerings of the CIS Department. It replaces the Java Developer Advanced Certificate.		
<b>Need</b> Need for the program with evidence to support the stated need.	<p>“Research from <b>Robert Half International</b> 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....”</p> <p>Source: CIO Magazine, October 24, 2008</p> <p><a href="http://www.cio.com/article/456568/IT_Salaries_Expected_to_Rise_in_">http://www.cio.com/article/456568/IT_Salaries_Expected_to_Rise_in_</a></p>		
<b>Program Outcomes/Assessment</b> 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.	<u>Outcomes</u>	<u>Assessment method</u>	
	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ol>	Common departmentally created final exam.	

Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to [sjohn@wccnet.edu](mailto:sjohn@wccnet.edu) for posting on the website.

<p><b>Curriculum</b></p> <p>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.</p>	<p><b>Major/Area Requirements</b> <span style="float: right;">(11-12 Credits)</span></p> <table border="0"> <tr> <td>CPS 161*</td> <td>An Introduction to Programming with Java</td> <td style="text-align: right;">4</td> </tr> <tr> <td>CPS 261 **</td> <td>Programming Data Structures in Java</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Complete one course:</td> <td></td> <td style="text-align: right;">3-4</td> </tr> <tr> <td></td> <td>CIS 121 Unix/Linux Fundamentals (3)</td> <td></td> </tr> <tr> <td></td> <td>CIS 282 Relational Database Concepts &amp; Application (3)</td> <td></td> </tr> <tr> <td></td> <td>CPS 120 Intro to Computer Science (3)</td> <td></td> </tr> <tr> <td></td> <td>CPS 293 C# .Net (4)</td> <td></td> </tr> <tr> <td></td> <td>CPS 171 Introduction to Programming with C++ (4)</td> <td></td> </tr> <tr> <td></td> <td>CPS 271 Object Feature of C++ (4)</td> <td></td> </tr> <tr> <td></td> <td>CIS 221 Linux/Unix Programming/Scripting I (3)</td> <td></td> </tr> <tr> <td></td> <td>INP 150 Web Coding I (3)</td> <td></td> </tr> </table> <p><b>Minimum Credits Required for the Program:</b> <span style="float: right;">(11-12) Credits</span></p> <p>*Transfers to Eastern Michigan University as COSC 111</p> <p>**Transfers to Eastern Michigan University as COSC 211</p>			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 Object Feature of C++ (4)			CIS 221 Linux/Unix Programming/Scripting I (3)			INP 150 Web Coding I (3)	
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<p><b>Budget</b></p> <p>Specify program costs in the following areas, per academic year:</p>	<table border="1"> <thead> <tr> <th></th> <th>START-UP COSTS</th> <th>ONGOING COSTS</th> </tr> </thead> <tbody> <tr> <td><b>Faculty</b></td> <td>No new costs</td> <td>No new costs</td> </tr> <tr> <td><b>Training/Travel</b></td> <td>No new costs</td> <td>No new costs</td> </tr> <tr> <td><b>Materials/Resources</b></td> <td>No new costs</td> <td>No new costs</td> </tr> <tr> <td><b>Facilities/Equipment</b></td> <td>No new costs</td> <td>No new costs</td> </tr> <tr> <td><b>Other</b></td> <td>No new costs</td> <td>No new costs</td> </tr> <tr> <td style="text-align: center;"><b>TOTALS:</b></td> <td>No new costs</td> <td>No new costs</td> </tr> </tbody> </table>				START-UP COSTS	ONGOING COSTS	<b>Faculty</b>	No new costs	No new costs	<b>Training/Travel</b>	No new costs	No new costs	<b>Materials/Resources</b>	No new costs	No new costs	<b>Facilities/Equipment</b>	No new costs	No new costs	<b>Other</b>	No new costs	No new costs	<b>TOTALS:</b>	No new costs	No new costs												
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<p><b>Program Description for Catalog and Web site</b></p>	<p>This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.</p>																																			
<p><b>Program Information</b></p>	<p><b>Accreditation/Licensure</b> - None</p> <p><b>Advisors</b> – Clarence Hasselbach, Philip Geyer, Khaled Mansour</p> <p><b>Advisory Committee</b> - CIS Advisory Committee</p> <p><b>Admission requirements</b> - Completion of Foundations of Information Systems Certificate of equivalent degree or experience.</p> <p><b>Articulation agreements</b> - Eastern Michigan University in progress</p> <p><b>Continuing eligibility requirements</b> - None</p>																																			

**Assessment plan:**

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,	Common final examination to be prepared by the CIS department	Beginning Fall 2011 and every three years thereafter	All sections of CPS 261	Random sample of 50% of students



exceptions, overloading, etc.				
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	Beginning Fall 2011 and every three years thereafter	All sections of CPS 261	Random sample of 50% of 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	Beginning Fall 2011 and every three years thereafter	All sections of CPS 261	Random sample of 50% of 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	Beginning Fall 2011 and every three years thereafter	All sections of CPS 261	Random sample of 50% of 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 blind-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.

The department will review the program if the standard of success is not met.

REVIEWER	PRINT NAME	SIGNATURE	DATE
Department Chair/ Area Director	Clarens Hasselbach	Clarens Hasselbach	11/13/2008
Dean	Rosemary Wilson	Rosemary Wilson	11/14/08
Vice President for Instruction <input type="checkbox"/> Approved for Development <input checked="" type="checkbox"/> Final Approval	Roger M. Palay	Roger M. Palay	12/22/08
President	Larry Whitworth	Larry Whitworth	4/28/09
Board Approval			04/28/09

logged 11/17/08 sjv  
Office of Curriculum & Assessment 1/6/09 jn

**Program Information Report**

**School of Information Technology**

The School of Information Technology gathers the diverse areas that make up the computer technology of today. From basic programming languages to systems development through networking, these programs provide the core of information technology. Develop skills in computer forensics or learn how to run a successful e-business, the growing field of applied information technology is waiting for you.

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Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate and General Education requirements.

**Programming**

Learn the foundation of computer programming or specialize in a programming language through these programs.

**Programming in Java (CVJAV)**

**Advanced Certificate**

**Program Effective Term: Fall 2009**

This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.

**Program Admission Requirements:**

Completion of the Foundations of Information Systems certificate or equivalent.

Major/Area Requirements		(11 credits)
CPS 161	An Introduction to Programming with Java*	4
CPS 261	Programming Data Structures in Java*	4
	Complete one course from the following: CIS 121, CIS 221, CIS 282, CPS 120, CPS 171, CPS 271, CPS 293 or INP 150.	3-4

**Minimum Credits Required for the Program: 11**

**Notes:**

\*See the Eastern Michigan University Web site for transfer equivalency: <http://it.emich.edu/service/online/tranequiv/>.

## Programming in Java

Advanced Certificate

Program requirements shown below are for catalog year: 2009-2010

### Description:

This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.

### Contact Information:

Division: Business and Computer Technologies

School: School of Information Technology

Department: Computer Instruction

Advisors: Clarence Hasselbach, Khaled Mansour

### Major/Area Requirements

(11-12 Credits)

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 Object Feature of C++ (4)	
	CIS 221 Linux/Unix Programming/Scripting I (3)	
	INP <sup>150</sup> Web Coding I (3)	

### Minimum Credits Required for the Program:

(11-12) Credits

\*Transfers to Eastern Michigan University as COSC 111

\*\*Transfers to Eastern Michigan University as COSC 211