Syllabus

BIS-346: Java Programming

Course Description

This course provides an introduction to object-oriented Java programming concepts and fundamental techniques such as program development, compile, and debugging for Java programming. Students will learn fundamentals of Java programming, including variables, operators, basic input and output, control logic, looping, object-oriented programming concepts, Methods, Class, Composition, and Inheritance. These are programming fundamentals widely used in today's software development in the business environment. Critical thinking and problem solving skills are developed through program design, coding, debugging, and development delivery.

This course concentrates on Java and exposes students to object-oriented programming concepts. This course adds to the student's knowledge base acquired in the preceding Visual BASIC 2017 programming course in the BISO degree program. These two courses and the upcoming Web Application Development course together provide the student with a solid foundation in contemporary business programming development.

Credit Hours: 3
Prerequisite Courses: BIS-220: Analytical Thinking and Problem Solving and BIS-344: Visual Basic Programming.

Course Outcomes

Upon completion of this course you should be able to:

1. Demonstrate a working knowledge of the Java programming language syntax, including its keywords, operators, and data types in order to write simple Java applications.
2. Design basic algorithms and draw flowcharts and pseudo-code, which lead to developing new Java programs.
3. Explain and use Java selection and repetition control structures in Java applications and applets.
4. Write programmer-defined methods for use in Java programs.
5. Create and use abstract data types (objects) from a class in Java programs.
6. Develop advanced classes and methods in Java programming.
7. Construct programs combining advanced Java classes and methods with programmer-defined classes and methods.
8. Explain inheritance and encapsulation for software reuse.
9. Manipulate String and expressions.

Course Textbook

Note: This course utilizes Online Educational Resources that are displayed in Student Resources within each workshop (or module). OER is a free resource. No textbook need to be purchased in this course. Some of the OER is listed below.

Downey, A. B., & Mayfield, C. (2017). *Think Java, how to think like a computer scientist* (Version 6.6.0). Needham, MA: Green Tea Press.

- PDF download of Version 6.6.0 is available
- PDF and other formats of the draft second edition available at https://greenteapress.com/wp/think-java-2e/
- Hardcopy, published version of Second Edition is expected to be available for purchase sometime in 2020.
    - **ISBN-13:** 978-1492072508
    - **ISBN-10:** 1492072508

Java Programming Example Source code is available from http://tinyurl.com/ThinkJavaCode2

Java software - Java SE Development Kit 8 is found and downloaded from http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

DrJava Integrated Development Environment (IDE) is downloaded from http://www.drjava.org/

Important Notes

1. All software used in BIS346 is supported by Microsoft Windows operating systems, not Apple OS.
2. You must determine whether your PC is running the Windows 32 bit or 64 bit version before you download and install any software. The Windows x86 version software is for the 32 bit version of Windows and Windows x64 is for the 64 bit version of Windows.
3. Any link to the software above is subject to be changed or removed by the owners without any notice. If you cannot find any of the web sites above, please use Google to search for the new web site.
4. Refer to Workshop One, 1.1 Setup: Java Software Installation for details regarding workstation setup required by the course.

Grading Scale

Grade	Quality Points Per Credit	Percentage	Score
A	4.0	95% - 100%	950 - 1000

A-	3.7	92% - 94.9%	920 - 949
B+	3.3	89% - 91.9%	890 - 919
B	3.0	85% - 88.9%	850 - 889
B-	2.7	82% - 84.9%	820 - 849
C+	2.3	79% - 81.9%	790 - 819
C	2.0	75% - 78.9%	750 - 789
C-	1.7	72% - 74.9%	720 - 749
D+	1.3	69% - 71.9%	690 - 719
D	1.0	65% - 68.9%	650 - 689
F	0	0% - 64.9%	0 - 649

Grading Policies

Your grading policy for your course is dependent on your school and program. Your grading policies can be found in the IWU Catalog.

Letter Grade Equivalencies

Grade	Description of Work
A	Clearly stands out as excellent performance. Has unusually sharp insights into material and initiates thoughtful questions. Sees many sides of an issue. Articulates well and writes logically and clearly. Integrates ideas previously learned from this and other disciplines. Anticipates next steps in progression of ideas. Example "A" work should be of such nature that it could be put on reserve for all cohort members to review and emulate. The "A" cohort member is, in fact, an example for others to follow.
B	Demonstrates a solid comprehension of the subject matter and always accomplishes all course requirements. Serves as an active participant and listener. Communicates orally and in writing at an acceptable level for the degree program. Work shows intuition and creativity. Example "B" work indicates good quality of performance and is given in recognition for solid work; a "B" should be considered a good grade and awarded to those who

	submit assignments of quality less than the exemplary work described above.
C	Quality and quantity of work in and out of class is average. Has marginal comprehension, communication skills, or initiative. Requirements of the assignments are addressed at least minimally.
D	Quality and quantity of work is below average. Has minimal comprehension, communication skills, or initiative. Requirements of the assignments are addressed at below acceptable levels.
F	Quality and quantity of work is unacceptable and does not qualify the student to progress to a more advanced level of work.

Course Summary

Workshop	Discussion*	Assignment*	Total Points per Workshop
Workshop One	3/95	1/105	200
Workshop Two	2/50	1/100	150
Workshop Three	2/50	1/100	150
Workshop Four	2/50	1/100	150
Workshop Five	2/50	1/100	150
Workshop Six	2/50	1/150	200
Course Totals	**13/345**	**6/655**	**1000**

Course Assignments

Workshop One Outline

Title	Due Dates	Time	Points

1.1 Setup: Java Software Installation	Due by the end of the fourth day of the workshop.	2.5 hours	50
1.2 Exercise: Reading	Suggested to be completed before beginning other assignments.	3 hours	0
1.3 Discussion: Reading & Concepts	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	25
1.4 Discussion: Programming Help	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	20
1.5 Assignment: Programming Exercises	Due by the end of the workshop.	7.5 hours	105
Totals		**17 hours***	**200**

Workshop Two Outline

Title	Due Dates	Time	Points
2.1 Exercise: Reading	Suggested to be completed before beginning other assignments.	3 hours	0
2.2 Discussion: Reading & Concepts	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	20
2.3 Discussion: Programming	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	30

2.4 Assignment: Programming Exercises	Due by the end of the workshop.	7 hours	100
	Totals	**14 hours***	**150**

Workshop Three Outline

Title	Due Dates	Time	Points
3.1 Exercise: Reading	Suggested to be completed before beginning other assignments.	3 hours	0
3.2 Discussion: Reading & Concepts	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	20
3.3 Discussion: Programming	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	30
3.4 Assignment: Programming Exercises	Due by the end of the workshop.	7 hours	100
	Totals	**14 hours***	**150**

Workshop Four Outline

Title	Due Dates	Time	Points
4.1 Exercise: Reading	Suggested to be completed before beginning other assignments.	4 hours	0
4.2 Discussion: Reading & Concepts	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	20

4.3 Discussion: Programming	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	30
4.4 Assignment: Programming Exercises	Due by the end of the workshop.	7 hours	100
	Totals	**14 hours***	**150**

Workshop Five Outline

Title	Due Dates	Time	Points
5.1 Exercise: Reading	Suggested to be completed before beginning other assignments.	3 hours	0
5.2 Discussion: Reading & Concepts	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	20
5.3 Discussion: Programming	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	30
5.4 Assignment: Programming Exercises	Due by the end of the workshop.	7 hours	100
	Totals	**14 hours***	**150**

Workshop Six Outline

Title	Due Dates	Time	Points

6.1 Exercise: Reading	Suggested to be completed before beginning other assignments.	3 hours	0
6.2 Discussion: Reading & Concepts	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	20
6.3 Discussion: Programming	Post your initial response by the end of the fourth day of the workshop and a minimum of two responses by the end of the workshop.	2 hours	30
6.4 Assignment: Programming Exercises	Due by the end of the workshop.	9 hours	150
6.5 End of Course Survey	Due by the end of the workshop.	-	10 Extra Credit
	Totals	**16 hours***	**200**

Expectations, Policies, and Important Student Information

School/Division	Link
DeVoe School of Business Division of Liberal Arts School of Services and Leadership	View School/Division Expectations, Policies, and Student Information
School of Educational Leadership	View School/Division Expectations, Policies, and Student Information

School/Division	Link
Wesley Seminary @ IWU	View School/Division Expectations, Policies, and Student Information
Nursing - Undergraduate	View School/Division Expectations, Policies, and Student Information
Nursing - Graduate	View School/Division Expectations, Policies, and Student Information