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Hesston College
BuCS 138 – Computer Programming I
Fall 2020 ONLINE Course
(Meets ONLINE during regular class time starting August 17, 2020)

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MISSION STATEMENT
Hesston College, a college of Mennonite Church USA, educates and nurtures each student within Christ-centered community, integrating thought, life, and faith for service to others in the church and the world.

COURSE INFORMATION
Faculty: Bob Harder
Office: K102 (Kropf Center)
Office Hours: Daily 1:00-3:00pm or by appointment
Telephone: 620.327.8322
Email: bobh@hesston.edu
Class Times: MWF 3:20-4:10pm ONLINE
Credit Hours: 3 credits
Classroom: K130 CIT Computer Lab (Kropf Center)

REQUIRED TEXTBOOKS/INSTRUCTIONAL RESOURCES
Exploring Wonderland: Java Programming Using Alice and Media Computation, Dann/Cooper/Ericson, 2010, Pearson Prentice Hall.

TECHNOLOGY REQUIRED FOR ONLINE ACCESSS
You will need a computer with internet access, audio, microphone and an internal or external webcam. Our program development environment requires a Windows-based operating system (Win 10 preferred).

CATALOG DESCRIPTION
BuCS 138 Computer Programming I focuses on structured programming techniques and introduces object-oriented programming. Topics include data types, calculations, control structures, arrays, classes, inheritance, input/output and files. This introductory programming course is taught using Alice and Java. Prerequisite: BuCS 112 or consent of instructor.

HESSTON COLLEGE OUTCOMES ADDRESSED IN THIS COURSE
1. Persons with intellectual and practical skills
   c – media and information literacy

COURSE STUDENT LEARNING OUTCOMES
1. Define computer programming terms.
2. Apply basic computer programming concepts and principles.
3. Analyze, design, diagram, write and document computer algorithms and programs.
4. Identify and resolve computer program syntax and logic errors.

COURSE ASSESSMENTS

Hesston College Outcome	Course Outcomes	Assessment Activity
1c	1, 2, 3, 4	Assignment 1
1c	1, 2, 3, 4	Assignment 2
1c	1, 2, 3, 4	Assignment 3
1c	1, 2, 3, 4	Assignment 4
1c	1, 2, 3, 4	Midterm Exam
1c	1, 2, 3, 4	Assignment 5
1c	1, 2, 3, 4	Assignment 6
1c	1, 2, 3, 4	Assignment 7
1c	1, 2, 3, 4	Final Exam

EVALUATION POLICY / GRADING SCALE

Assignments	70%	100 – 90%	A
Professionalism	10%	89 – 80%	B
		79 – 70%	C
Final Exam	20%	69 – 60%	D
		less than 60%	NC

Late assignments will not be accepted unless approved in advance. All non-group assignments are to be completed individually. Midterm grades will be evaluated based on the current class grade.

Professionalism is a vital trait in the business community. All Computer Science/Computer Information Technology students are assumed to be professionals and will start with 100 points (10% of the final grade). A first instance of unprofessional behavior will result in a verbal warning. A second instance will result in a written warning and the loss of the 100 professionalism points. The class instructor has the option of returning some or all of the professionalism points if consistent professional behavior is subsequently exhibited.

ATTENDANCE POLICY

Students are excused for college-approved group activities such as scheduled games for athletic teams, scheduled music and drama programs and trips, Student Life RA retreats, and academic activities including professional conferences and field trips. Students are not excused for practice in any sport; for music or drama rehearsals; or for service activities not part of a class-organized experience for credit. Doing so would count as an unexcused absence.

Students are responsible for class work regardless of the type of absence and should normally complete missed work in the week following the absence. Students are responsible to initiate contact with each instructor whose class the students will miss or have missed. For planned absences, this should occur in the week prior to the absence. For absences due to college-approved group activities, students must complete and submit all assignments on or before the due dates for all classes that will be missed.

Attendance will be taken at the beginning of each class period. After one absence week, each additional absence week not approved in advance may result in a one-letter grade reduction. Unless approved in advance, two late arrivals will count as one absence for grading purposes. The Hesston College Vice President of Academics, and the college's Student Support Team all have weekly knowledge of your class attendance records.

ADMINISTRATIVE COURSE WITHDRAWAL

Students are expected to attend all classes, complete assignments on time and behave in a manner appropriate for a college classroom. A student who fails to complete assignments, repeatedly disrupts class and/or misses class sessions for a course may be administratively withdrawn from the course. If opportunity remains for a student to pass the course, an instructor may initiate a request to the Student Success Team (SST) for a plan of improvement. Should the conditions of the plan not be met, the registrar may withdraw the student from the course in consultation with the instructor, academic advisor and the financial aid office. This action may occur at any point during the term. The student will be contacted prior to such action.

Students missing 20% or more of the scheduled meetings of a course, regardless of the number of excused/unexcused absences, may be subject to administrative course withdrawal. The grade assigned will be a W prior to the withdrawal deadline or a NC after the withdrawal deadline.   Instructors are responsible for documenting individual attendance records online, warning students with excessive absences, and communicating actions with the registrar. Instructors still have discretion to allow a minimal number of unexcused absences and to adjust letter grades according to their own course policy.

STUDENTS WITH DISABILITIES

Students who have qualified disabilities covered through the Americans with Disabilities Act and who desire special assistance should contact Kristin Kaufman (x8213), Disability Coordinator, for assistance at the earliest possible time. While the coordinator will contact the instructor concerning requests for assistance, the instructor would appreciate if you would notify him/her that you have made a request for assistance, so that your needs may be accommodated.

STATEMENT ON ACADEMIC DISHONESTY AND PLAGARISM

Academic dishonesty, including plagiarism and cheating, will not be tolerated. Students are responsible for knowing what constitutes these offenses and must not engage in them in their work. Any student committing such offenses will be referred to the Student Success Coordinator and reported to the Vice President of Academics. Penalties for such activities include: a zero for the assignment (first offense), an NC for the course to dismissal from Hesston College for subsequent offenses. For further information regarding this policy, refer to the *Hesston College Course Catalog*.

STATEMENT ON CONFIDENTIALITY AND MANDATORY REPORTING

As a professor, one of my responsibilities is to help create a safe learning environment on our campus. I also have a mandatory reporting responsibility related to my role as a professor. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. However, I am required to share with the Title IX coordinator information regarding sexual misconduct or information about an incident that may have occurred while at Hesston College. Students may speak to someone confidentially by contacting our non-mandatory reporters: *Campus Counselor* and *Campus Pastor*. Information on keeping our campus safe can be found on the *Hesston College website*.

CLASSROOM EXPECTATIONS

Texting, Internet browsing, messaging, emailing, or gaming during class is inappropriate and unprofessional. Your behavior becomes part of your final grade.

OTHER COURSE REQUIREMENTS AND INFORMATION

Before each class, students are expected to:

1. Check the course schedule for assignment due dates.
2. Go over the assigned reading from the text.
3. Complete assignments and homework by the due date.
4. Notify your instructor in advance if you can't attend or will be late. Otherwise, be on time.

The ACCESS lab (x8213) is located in the library and is available for study and learning support. Tutors are available to you at no charge. Contact your instructor if you would like to use this excellent service.

Prepare yourself to invest an average of 6 hours per week in additional study. The following table shows the approximate time by week you should expect to spend on various classroom activities:

Total study time estimate for this class: 90 hours

Total	Week	Read	Program	Other	Exercises		Pages
6.9	1	2.9	3.0		1.0		43
5.2	2	1.7	3.0		0.5		25
6.2	3	2.7	3.0		0.5		40
4.7	4	1.2	3.0		0.5		18
5.7	5	2.2	3.0		0.5		33
5.6	6	2.1	3.0		0.5		32
5.3	7	2.3	3.0				35
4.6	8	1.1	3.0		0.5		16
8.6	9	4.6	3.0		1.0		69
4.6	10	1.6	3.0				24
5.6	11	2.1	3.0		0.5		32
4.3	12	1.3	3.0				20
5.3	13	1.8	3.0		0.5		27
6.0	14		6.0				
5.0	15		3.0	2.0			
6.0	16		3.0	3.0			

DISCLAIMER
The dynamics of the course or a change in certification may necessitate a change in the syllabus or schedule at the discretion of the instructor.

COURSE OUTLINE/CALENDAR

1 – Aug 17   Course introduction to syllabus, course outline, CIT Computer Lab
Chapter 1 – Getting Started with Alice
Chapter 2 – Program Design and Implementation
Program development life cycle, algorithm, coding, testing
Code editors, sequential vs simultaneous action, nesting, properties, comments
Bugs and debugging
Read: 1 - 43
Review Chapter 1 and 2 Exercises
Assignment 1 – p 41 #7, or p 42 #9, or p 42 #10

2 – Aug 24   Chapter 3 – Classes, Objects, Methods, and Parameters
Chapter 4 – Introduction to DrJava (start)
Object-oriented programming introduction
Wrote and compiled a simple Java program
Read: 44 - 68
Review Chapter 3 Exercises
Assignment 1 – due Wed, Sep 2

3 – Aug 31   Chapter 4 – Introduction to DrJava (finish)
Chapter 5 – Drawing in Java (start)
Object creation, methods, parameters, strings, variables
Binary numbering system
Read: 68 - 107
Review Chapter 4 Exercises
Assignment 1 – due Wed, Sep 2

4 – Sep 7   Chapter 5 – Drawing in Java, Java API (finish)
Java programming example – GasPrice (in class)
Read: 107 - 124
Review Chapter 5 Exercises
Assignment 1 redo – due Wed, Sep 9
Assignment 2 – Payroll due Wed, Sep 16

5 – Sep 14   Chapter 6 – Functions and Conditionals
Functions and if/else conditionals
Chapter 7 – Repetition: Loops (start)
For loops, nested loops, infinite loops
Read: 125 - 157
Review Chapter 6 Exercises
Assignment 2 – Payroll due Wed, Sep 16
Assignment 3 – p 143 #6 due Mon, Sep 28

6 – Sep 21   Chapter 7 – Repetition: Loops (finish)
While loops and lists
Read: 157 – 188
Review Chapter 7 Exercises
Assignment 2 redo – due Wed, Sep 23
Assignment 3 – p 143 #6 due Mon, Sep 28

7 – Sep 28   Chapter 10 – Modifying Pictures Using Loops (start)
Picture encoding, color representation
Arrays, for loops, while loops
Read: 260 – 294
Assignment 3 – p 143 #6 due Mon, Sep 28
Assignment 4 Grades1 – due Wed, Oct 7

8 – Oct 5   **Midterm Exam** (Assignment 4)
Chapter 10 – Modifying Pictures Using Loops (finish)
Chapter 11 – Modifying Pixels in a Matrix (start)
Nested loops, two-dimensional arrays
Read: 294 - 309
Review Chapter 10 Exercises
Assignment 3 redo – due Wed, Oct 7
Assignment 4 Grades1 – due Wed, Oct 7
Assignment 4 Grades2 algorithm and program – due Fri, Oct 9

Oct 7   **Midterm**

9 – Oct 12   Chapter 11 – Modifying Pixels in a Matrix (finish)
Chapter 12 – Conditionally Modifying Pixels
if and if/else statements and boolean expressions
Read: 310 - 378
Review Chapter 11 Exercises
Review Chapter 12 Exercises
Assignment 4 redo – due Wed, Oct 14
Assignment 5 – Package1 due Wed, Oct 21

10 – Oct 19   Chapter 13 – Creating Classes (start)
Classes, UML diagrams, public and private fields
Constructors, accessors
Inheritance, parent class, child class, overriding inherited methods
Debuggers, breakpoints, step-over, step-into
Read: 379 – 402
Assignment 5 – Package1 due Wed, Oct 21
Assignment 6 – Package2 algorithm due Wed, Oct 28
Assignment 6 – Package2 due Wed, Nov 4

11 – Oct 26   Chapter 13 – Creating Classes (finish)
Modifiers, inheritance, runtime binding, Javadoc comments
Chapter 14 – Creating and modifying text (start)
Unicode, string methods, delimited strings, parsing strings, exception handling
Read: 402 - 434 *(except 430)*
Review Chapter 13 Exercises
Assignment 5 redo – due Wed, Oct 28
Assignment 6 – Package2 algorithm due Wed, Oct 28
Assignment 6 – Package2 due Wed, Nov 4

12 – Nov 2   Chapter 14 – Creating and modifying text (continue)
Reading and writing text files
Read: 430, 435 - 453
Assignment 6 – Package2 due Wed, Nov 4
Assignment 7 – Contest due Wed, Nov 18

13 – Nov 9   Chapter 14 – Creating and modifying text (finish)
Reading data from an Internet web site
Started creating a structured Game program as an in-class exercise
Read: 453 - 479
Review Chapter 14 Exercises
Assignment 6 redo – due Wed, Nov 11
Assignment 7 – due Wed, Nov 18
Assignment 8 – Game (done in-class but practice for the Final Exam)

14 – Nov 16   Finished the structured Game program
Rewrote the Game program using objects
Assignment 7 – due Wed, Nov 18
Assignment 8 – Game (done in-class but practice for the Final Exam)

15 – Nov 23   Review for the **Final Exam on Tue, Dec 8**

Thanksgiving   **Thanksgiving Break is Wed, Nov 25 through Mon, Nov 30, 2020.**
Class resumes ONLINE on Wed, 2 Dec 2020.

16 – Dec 2   **ONLINE** classes
Review for the **Final Exam on Tue, Dec 8**
Review both versions of the Game program
Assignment 7 redo – due today
Assignment 8 – Game (done in-class but practice for the Final Exam)
Final Exam Practice

Dec 4 (Wed)   Reading Day (no class)

Dec 8 (Tue)   **ONLINE Final Exam 3:00-4:50pm**