



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**INTRODUCTION TO COMPUTER SCIENCE
CIS1715 3 Credit Hours**

Student Level:

This course is open to students on the college level in either Freshman or Sophomore year.

Catalog Description:

CIS1715 - INTRODUCTION TO COMPUTER SCIENCE (3 hrs)

An introductory course to give computer science majors an overview of the history, architecture, typical algorithms, and various managerial aspects of computer information systems.

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge concerning to introducing computer science majors to the history, architecture, typical algorithms, programming, managerial aspects, and current trends of computer information systems.

Learner Outcomes:

Upon completion of the course, the student will be able to gain a comprehensive overview of computer information systems.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.
- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.

- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

UNIT 1: An Introduction to Computer Science

Outcomes: The student will gain an overview of the Internet and the world wide web along with designing basic web pages using HTML

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be able to discuss and explain basic definitions of computer science.
						Understand algorithms and how to develop them.
						Discuss and explain the importance of algorithmic problem solving.
						Discuss the various careers available in information technology.

UNIT 2: The Internet and the Web

Outcomes: The student will gain an overview of the study of computer science.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Be able to discuss the Internet's history and how it works.
						Be able to discuss the Web's history and how it works.
						Write Basic Web Pages in HTML
						Write simple programs in JavaScript

UNIT 3: Computer Programming Techniques / Algorithmic Foundations

Outcomes: The student will gain an overview of the study of basic programming constructs

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Use the following techniques of Programming: <ul style="list-style-type: none"> • Variables and expressions • Input / Output • Functions • Event-Driven Programming • Conditional Execution • Conditional Repetition • Strings and Arrays
						Use the following basic techniques of object oriented programming: <ul style="list-style-type: none"> • Classes, Objects, Methods, and Parameters • Inheritance • Abstraction
						Discuss and understand the following algorithms: <ul style="list-style-type: none"> • Sequential Search • Binary Search • Data Cleanup • Selection Sort • Bubble Sort • Insertion Sort • Quicksort • Heapsort • Mergesort

UNIT 4: Hardware

Outcomes: The student will gain an understanding of the logic of computer circuitry, the Von Neumann architecture, and a historical overview of the development of computer systems.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Use the binary number system and binary storage devices.
						Use Boolean logic and gates.
						Use Circuit design and algorithms.
						Discuss the Von Neumann architecture.
						Discuss the historical development of computer systems.

UNIT 5: System Software and Virtual Machines

Outcomes: The student will learn how to interface with the computer through the low level languages and operating systems.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Use system software.
						Discuss assemblers and assembly language
						Use the Windows operating system.
						Use the Unix operating system.

UNIT 6: Computing Topics

Outcomes: The student will learn how to interface with the computer through high level languages.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Discuss topics in computer security.
						Discuss concepts of artificial intelligence and expert systems.
						Discuss network fundamentals.
						Discuss databases concepts and be able to use simple SQL commands.
						Discuss various programming languages and their uses.
						Use Word Processors.
						Use Spreadsheets.
						Discuss current topics in the computer industry.

Projects Required:

Projects will vary according to the instructor.

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

As per the instructor

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time, The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability which may impact work in this class which requires accommodations, contact the Disability Services Coordinator