UNION COUNTY COLLEGE MASTER COURSE SYLLABUS

COURSE NUMBER & NAME: CST 162 Computer Algorithms

LECTURE/LAB HOURS: 4 hours per week.

CREDITS 4 credits.

PREREQUISITES: CST 161.

COURSE DESCRIPTION: This course introduces students to the logic used to develop solutions to common problems in the computer science field. These step-by-step detail solutions are called algorithms and serve as the basic methods utilized in most computer problems. In the lab component of this course these algorithms are written and tested in a current programming language. Topics include number systems, logical operators, one and two-dimensional arrays and methods of sorting arrays, graphs of functions, and string manipulation.

COURSE LEARNING OUTCOMES:
Upon successfully completing this course the student should be able to:

1. Describe and effectively use several problem solving methods, including at least one tool and multiple techniques, to represent an algorithm in a computing environment.
2. Represent the solution to moderately complex problems using a higher-level computer language.
3. Explain the nature of data, how it may be represented in a higher-level language, stored and represented in a computing environment.
4. Identify and describe how the computing machine components support the execution of a program.
5. Develop algorithms that employ those common logic and data structures native to most higher-level computer languages.
6. Design, code, debug and document program using techniques of good pro9gramming style.
7. Identify the four core and five related areas of study within the Computer Science discipline.
8. Identify the objectives common to object-oriented problem solving and object-oriented languages;

Text:

We will use an eText (electronic text) this semester.

Sign up at zyBooks.com
Enter zyBook code **UCCCST162DzubackSpring2017**
Click Subscribe

UNION COUNTY COLLEGE MASTER COURSE SYLLABUS

The cost to subscribe is **$67**; any applicable returning student discounts will be applied automatically. The student subscriptions will be valid through **05/30/17**.

Materials:

1. **Required -** The text, the Sun/Oracle Java compiler (available at the Oracle website) and a text editor (Eclipse for example) or Integrated Development Environment. Details for downloading and installing the compiler and editor are available on the course website.
2. **Required -** flash/micro drive for laboratory -- 512Mb minimum.
3. **Optional -** "Draw" software (Visio from Microsoft or SmartDraw for example) available which contain flowchart symbols in their "Symbol Library" which can be used in place of a physical template. The costs for this type of software may run as little as $50 or as much as $200.

Union County College does not discriminate and prohibits discrimination, as required by state and/or federal law, in all programs and activities, including employment and access to its career and technical programs.

Experiential Learning:
Students must complete an experiential learning activity that connects course content to career applications. This activity may be a content specific assignment or practical skill that is applied within a course assignment. This assignment supports the general education learning outcomes of scientific/critical thinking and quantitative reasoning; oral and written communication; and information literacy/technological competency.

Americans with Disabilities Act (ADA):
Union County College offers reasonable accommodations and/or services to persons with disabilities. Any student who has a documented disability and wishes to self-identify should contact the Coordinator of Disability Support Services at (908) 709-7164, or email disabilitysvc@ucc.edu. Accommodations are individualized and in accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1992. In order to receive accommodations, students must be registered with Disability Support Services. Students should register with the office as soon as possible. Accommodations are not official until the Faculty Accommodations Alert Form(s) are issued from the student to his/her instructor(s).

Family Educational Rights and Privacy Act (FERPA):
The FERPA Statement can be found at https://www.ucc.edu/admissions/the-family-education-rights-and-privacy-act/

Course Grades & Grading Policy:

Evaluation Elements for Fall 2015 Semester

UNION COUNTY COLLEGE MASTER COURSE SYLLABUS

Evaluation Element	Weight
(3) 1 Hour examinations	45%
(1) Final examination	25%
Assigned Homework	05%
Laboratory Works	25%

Scoring Each Evaluation Element

The scoring systems employed for Examinations, Laboratory Assignments and Programming Projects all involve numeric conversions. I will record in the grade book a series of numeric values for each of the examinations, laboratory assignments and programming projects you complete. That "score" can be converted into an equivalent "letter" grade. The scores will be, according to the Instructor's Syllabus, averaged or accumulated and then “weighted” with the other elements of your grade to produce a numeric value that itself will be converted to a "letter" grade equivalent and (at the end of the semester) reported to the Registrar as your final course grade for this semester.

Examinations

Each examination will have between 1 and "N" points allocated to the internal parts (or sections). The sum of these parts will represent the total number of points for the examination. The number of points earned for each part will be summed and that sum then divided by the total number of points for the examination. The quotient will be multiplied by 100 (this represents the percentage of points earned out of the total number of points that you could have earned). That percentage will be recorded in my gradebook as your score for that examination. You may convert (for reference purposes) the percentage score into a letter grade using the UCC conversion system. The two highest examination scores will be averaged to produce a percentage that will be applied to the weight given for the in class examinations component of your final grade.

For Example: If the average of your two highest examination scores is 90% and the weight accorded to examinations is 40 points, you would earn 36 points (or 90%) out of a possible 40 points for examinations.

Homework Assignments

Each Assignment will have an announced value between 5 and 20. You will receive a numeric value between 0 and "n" (where "n" represents the full value of the assignment, in 1/2 point increments) that represents the "score" for that particular assignment. You can convert that score into a "letter" grade by dividing the assigned score by the announced value and multiplying by 100 to produce a percent. Your scores for all of the Assignments will be accumulated and divided by the total number of points you could have earned, to produce a percentage score of your Assignments. That Project and Assignment score will be “weighted” for your final grade.

For Example: If the sum of your Assignments is 38 points and a total of 8 Assignments valued at 40 points were given, you earned 38 of a possible 40 points or 95% of the possible points. That percentage will be scaled into the "weight" accorded to Project and Assignment Work. If the weight is 10% of your grade, then you will earn 9.5 points for Assignment and Project Work.

Please note that you may earn less than the total number of possible points for an Assignment for **any** of the following reasons:

1. Material requested turned in after due date (1/2 point for each class after due date).
2. Answers were incomplete - not all questions answered (not less than 1/2 point).
3. Answer were incorrect (not less than 1/2 point).
4. All materials requested not turned in (not less than 1/2 point).

Summing Up...

The values derived for each component will be added to produce a numeric "score" in the range of 0 through 100. That score will be converted to a final (letter) grade based on the UCC numeric scale system (< 60 = "F", 60-64 = "D", 65-69 = "D+", 70-74 = "C", 75-79 = "C+", etc. – consult the 2015-16 UCC Catalog for details).

Final Examination Exemption:

Students may earn a "waiver" from the Final Examination this semester. This exemption will be earned if:

1. You take all three scheduled class examinations **and**
2. You earn a score of 90 or greater on each of those three examinations **and**
3. You must have at least a 90 average in the post lab problems, homework and laboratory work.

Concluding thoughts...a "waiver" from the Final Examination implies you have maintained an "A" level work in every (gradable) portion of this course. I will make every effort to evaluate, grade and return each homework, laboratory and project assignment you submit in a timely fashion (1 or 2 classes after you submit it to me). Please keep your own records of these assignments should questions arise later about that component of your grade. I will try to maintain an "up-to-date" grade book throughout the semester and should be able, upon request, give you a summary of your grades. .Given the cumulative nature of the grading system used in this course, your grade may fluctuate quite a bit over the course of the semester, especially between the first and second examinations.

COURSE POLICIES

Preparing for Examinations
Attend lectures and laboratories. Typically one week in advance of an announced exam I will post a Study Guide for that examination on the course website. The Study Guide includes an outline of the topics to be tested, along with chapter references and suggested exercises to perform.

Appeals Policy
To appeal a grade, send an email to your instructor's email address within five days of the grade having been posted. Overdue appeals will not be considered.

Incomplete Policy
Students will not be given an incomplete grade in the course without sound reason and documented evidence as described in the *Union County Catalog*. In any case, for a student to receive an incomplete, he or she must be passing and must have completed a significant portion of the course.

Cheating Policy
Students are expected to uphold the school's standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. The guiding principle of academic integrity shall be that a student's submitted work, examinations, reports, and projects must be that of the student's own work. Students shall be guilty of violating the honor code if they:

1. Represent the work of others as their own.
2. Use or obtain unauthorized assistance in any academic work.
3. Give unauthorized assistance to other students.
4. Modify, without instructor approval, an examination, paper, record, or report for the purpose of obtaining additional credit.
5. Misrepresent the content of submitted work.

The penalty for violating the honor code is severe. Any student violating the honor code is subject to receive a failing grade for the course and may be subject to disciplinary action as described in the *Union County Catalog*. If a student is unclear about whether a particular situation may constitute an honor code violation, the student should meet with the instructor to discuss the situation.
Each student must develop his or her own solutions to the assigned homework and laboratory exercises. Students may not "work together" on graded assignments. Such collaboration constitutes cheating. A student may not use or copy (by any means) another's work (or portions of it) and represent it as his/her own. If you need help on an assignment, contact your instructor, not other classmates.