

# CISP300(10774)

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## 1 Course Information

- *Title:* Algorithm Design/Problem Solving
- *Description:* This course introduces methods for solving typical computer problems through algorithm design. Topics include assessing and analyzing computer problems in a top-down, divide-and-conquer approach that leads to a programming solution. It also covers programming plans and detailed design documents from which source code versions of programs are created.
- *Student Learning Objectives:*
  - define operators, including arithmetic, comparison, and logical operators.
  - differentiate control structures, including branches (conditional statements) and loops (pre-checking and post-checking loops).
  - deduce post condition from pre condition for control structures, including assignment statements, branches, and loops.
  - construct a trace table to emulate the execution of a program that utilizes variables, various control structures, data organizations, subroutines, and parameters.
  - contrast the lifespan limits and behaviors of local variables, by-value parameters, and by-reference parameters.
  - compare the two methods of passing results: by-reference parameters and return value.
  - compare in-line copy-and-paste coding with structured subroutines in terms of maintainability, defect containment, testability, and other metrics.
  - synthesize a subroutine to abstract one or more similar blocks of in-line code using local variables, parameters, and return values.
  - differentiate roles involved in software development, including developers, analysts, and test engineers.
- *Number of units:* 3.00 lecture
- *Meeting hours:* 54 lecture hours

## 2 About the Instructor

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### 3 Section information

- *Meetings:* TuTh 1030-1150 rm 121
- *Final exam:* 05/15/2014 1015-1215

### 4 Class Policies and Rules

All policies of this class are extensions to the ones already imposed by the Los Rios Community College District and American River College. You are expected to have read College Enrollment Basics when you acknowledge having read this syllabus.

#### 4.1 Acceptable Excuses

- Sickness of self with doctor's note, dated and signed.
- Jury duty with a copy of the summon.
- Military duty with a copy of the notice.

#### 4.2 Attendance (quoted from the college catalog)

College students are expected to attend all sessions of their courses. Excessive absence may result in the student being dropped from class by the instructor. *A student may be dropped from any class when that students absences exceed six percent (6%) of the total hours of class time.*

If a student is absent because of illness verified by the Health Center or personal physician, the absence must be excused and the student allowed to make up work missed.

##### 4.2.1 The source

Refer to the regulations regarding attendance of the Los Rios Community College for more details.

##### 4.2.2 How soon to report an excuse?

As soon as possible. I take roll in class and act on absences with a lag time of a day or so. Reporting an excuse too late may result in getting dropped despite the excuse being legitimate. This will incur unnecessary paperwork and loss of access to Moodle.

##### 4.2.3 What about the other unexcused reasons?

What if a child is sick? What if a vehicle has broken down? What if a vehicle gets a flat tire?

There are surprises in life, and that's why each student is allowed a 6% unexcused absence.

##### 4.2.4 Attendance for Online Classes

Attendance for an online class is determined by online access frequency. Absence is defined as the lack of observable activity. For example, in a 16-week full semester class, the duration is  $16 \times 7 \times 24 = 2688$  hours. 6% of that is 161 hours, or roughly 6 days. As a result, an interval of at least 6 days between activities is considered excessive absence.

##### 4.2.5 Attendance for Face-to-face/Hybrid Classes

Attendance for a face-to-face or hybrid class that has mandatory face-to-face time is determined by roll taking by a variety of means. Roll can be taken by a roll sheet, an in-class quiz, an exam or other means.

### 4.3 Classroom and Lab Behavior

- Classrooms and labs are facilities provided only for the scheduled and intended course work.
- Any behavior in a classroom or lab that interferes with teaching or learning is not tolerated. This includes disruption, bullying, excessive chatting and etc. The following is a list of examples.
  - Chatting. If there are any class related questions, ask me instead of another student.
  - Pets. Unless it is a legitimate helper dog, please do not bring any pets to a class.
  - Cell phones ringing, especially those with “interesting” ring tones.
- No eating or drinking is permitted in the classroom or lab. Food and drink items are to be sealed or closed during a lecture or lab session.
- Non-compliant participants will be asked to leave the classroom or lab. Further non-compliance will result in the involvement of security personnel, and will be reported to the Student Discipline Officer. This can result in suspension or expulsion.

### 4.4 Conduct code

- Refer to the section “Standards of Student Conduct” of the college catalog for a full description. You are expected to read and understand that section prior to the beginning of the second class meeting for a face-to-face class, or 3 days after the beginning for an online class.
- Academic dishonesty is an act of deception in which the student claims credit for work or effort of another person or uses unauthorized material or fabricated information in any academic work. It occurs when students (participate in any activity to) attempt to show possession of a level of competency, knowledge or skill that they do not possess.
- Any academic dishonesty may be reported to administration. An accumulation of reported attempts, possibly from multiple classes, will lead to expulsion from the college.
- All participants involved in academic dishonesty do not receive points for the worked submitted, this includes the person or people who originate the material, but willingly, actively or otherwise knowingly involve in an attempt.
- Activities involving academic dishonesty do not count for attendance.
- The instructor may ask suspects to do additional work or explain submitted work in order to determine the legitimacy of submitted work.
- By default, all work (assignments, quizzes, exams) are expected to be completed as follows:
  - Independently: this means without the aide (specific to the work) of anyone during or prior to the activity. This means that acquiring questions or test banks prior to an exam or quiz is considered an act of academic dishonesty.
  - Originally: this means without copying from or significantly deriving from the work of others.
- I can retroactively reexamine submitted *and* graded work for evidence of academic dishonesty. As a result, I can also adjust the grade accordingly.

## 5 Grading

### 5.1 Letter Grade Equivalence

- F:  $x < 1/8 = 12.5\%$
- D:  $1/8 = 12.5\% \leq x < 3/8 = 37.5\%$
- C:  $3/8 = 37.5\% \leq x < 5/8 = 62.5\%$
- B:  $5/8 = 62.5\% \leq x < 7/8 = 87.5\%$
- A:  $7/8 = 87.5\% \leq x$

## 5.2 Components and Proportions

- Homework or in-class assignments (20%).
  - Mostly homework.
  - Mostly without any time limit.
  - A chance to practice learned material.
  - Answers disclosed when it is due.
- Final exam (40%):
  - Proctored or in person.
  - Time limit of 2 hours.
  - Comprehensive.
  - As scheduled in the class schedule.
- Exam 1 or Project 1 (20%)
  - Occurs at about 1/3 through the class.
  - First formal assessment, proctored if it is an exam.
- Exam 2 or Project 2 (20%)
  - Occurs at about 2/3 through the class.
  - Second formal assessment, proctored if it is an exam.

## 5.3 Grading FAQs

- Score is assigned based on *observable academic competence*, not effort.
- Multiple choice questions are balanced, this means the total score of correct answers equal the total score of incorrect answers of the same question.
- Some questions are graded based on “key indicators”, which are objective observable characteristics of the submitted work.
- This is no late submission. Submissions after due date/time do not count or are not permitted, unless covered by an excuse (see the accepted excuses section).

## 6 Tips

These are not rules for this class, just tips from your instructor.

### 6.1 Helping a fellow student

I don't have any problem with students helping out each other. Frequently, the helper and helpee both benefit. However, helping is not letting a friend copy answers, or completing assignments/test questions for someone else.

When does helping a friend become academic dishonesty? Let's say Pat helped Sam with an assignment. If the instructor determines that Sam's submission shows a competency that Sam does not have, then it is considered a case of academic dishonesty.

But isn't this a gray line? Not exactly. Sam's true competency can be re-assessed by a similar but different assignment, completed under supervision. If Sam's result of the two assignments are significantly different, then the first submission shows a competency that Sam does not have.

What does this mean when you want to help a friend? Make sure the helpee truly understands the concepts and develops the necessary skills. Make sure your helpee can get a similar score if the instructor is to reassess the helpee's competency using a different assignment.

## 6.2 Study habit

First, attend classes. Many of my classes require the attendance of every class to keep up with the topics. Missing one class can make subsequent class difficult to follow. Furthermore, missing 6% or more class meetings (unexcused) will lead to being dropped.

Second, pay attention in class. Bring *something* to take notes. Just because I may record my lectures doesn't mean there is nothing to do. There may be something that you realize that I do not actually say, write that down!

Reading what I will be covering before a lecture will help you prepare for a lecture. Even if you don't fully understand what you read, at least you can prepare questions to ask me during the lecture. A pre-exposure to concepts and topics can help you prime your mind for discussions in a lecture.

Study again after a lecture. Revisit tricky topics, review notes, repeat examples, etc. Do this as soon as possible so that memory of the lecture does not fade away.

Start on assignments as soon as possible. Starting early does not create additional work. You have more time to ask questions, and more buffer in case anything happens before the due date.

After an assignment is due, study my solution. You may get full points for an assignment, but you may still learn something important from my solution. Do this as soon as possible so that you can use my solution to better understand course topics.

I use a lot of examples in a class that are not in my notes. Review and study them. Anything that I present in a lecture is in the scope of assessments.

## 7 Schedule

Topic	begin date
Lecture: Introduction to the networking and security fundamentals of a Linux/UNIX client operating system. Lab: Introduction to services, processes and their network ports.	03/18/14
Lecture: Define and categorize basic networking services and functions, such as Internet Control Message Protocol (ICMP) and others. Lab: Disabling unnecessary services and processes.	03/20/14
Lecture: Configure client-side operating system services and optimize them to allow performance of necessary job functions vs. security considerations. Lab: Optimize services and test client-side security.	03/25/14
Lecture: Configure networking services, such as web browsing and E-mail access, to allow performance of necessary job functions vs. security considerations. Lab: Configure web browsing and E-mail security.	03/27/14
Lecture: Apply client side file sharing security and file system permissions for users and groups to insure correct access to resources. Lab: Configure file sharing and file permissions for users and groups.	04/01/14
Lecture: Construct group and other policies on the local workstation to insure maximum security without preventing access to necessary resources and programs. Lab: Configure group and other policies.	04/03/14
Lecture: Assess security issues, ethical considerations and privacy considerations and regulations. Lab: Configure PC for privacy and compliance with regulations.	04/17/14
Lecture: Set up file sharing and implement data security on the local workstation. Lab: Implement file sharing and data security.	04/22/14
Lecture: Arrange and implement multiple-user security settings for a shared workstation. Lab: Configure PC for multiple users and set up security appropriately.	04/24/14
Lecture: Evaluate file system security and encryption methods for a shared workstation. Lab: Implement and test different encryption methods.	04/29/14
Lecture: Analyze network security fundamentals and their application to the local workstation to prevent unauthorized access. Lab: Test the ability of the workstation to prevent unauthorized access.	05/01/14
Lecture: Assemble and configure a network intrusion detection system (IDS). Lab: Configure and test an IDS.	05/08/14