Fall 2018 - CS 100 - Exam 1 Review Suggestions

last modified: 2018-09-25

- CS 100 - Exam 1 will be given **during class** on **Friday, September 28**.
- You are responsible for material covered in reading assignments, class sessions, and homeworks; but, here's a quick overview of especially important material.
- You are responsible for the material covered in Chapters 1, 2, and 3 in the course text, and Homeworks 1, 2, 3, and 4.
  - (Since we have not yet had a homework for Chapter 9, you will be responsible for that material on Exam 2. But note that the basics of categorical syllogisms were covered in Chapter 3, and you are responsible for knowing those for Exam 1.)
- You are permitted to bring into the exam a single piece of paper (8.5" by 11") on which you have **handwritten** whatever you wish on one or both sides. This paper must include your name, it must be handwritten by you, and it will **not** be returned.
  - Other than this piece of paper, the exam is closed-note, closed-book, and closed-computer/closed-electronic-devices.
  - You are to work **individually** on **all** exams in this course.
- This will be a pencil-and-paper exam. You only need to bring something to write with, and, if you'd like, the page of notes mentioned above.
- Your studying should include careful study of assigned readings, posted examples and notes, and homeworks (and posted solutions) thus far.
- I expect that the exam questions will be a combination of short-answer and multiple choice.

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- Based on suggestions from Prof. Deb Pires from UCLA: Because of the research-supported learning potential when students study together and explain concepts to one another, you will receive (a maximum) ***5 POINTS BONUS*** on Exam 1 if you do the following:
  - set up and/or attend an exam study session with at least one other CS 100 student (but it can involve as many other CS 100 students as you would like!)
  - for **YOU** to receive the bonus, **YOU** SEND an e-mail to me, sent on the **same day** as the study session (which needs to take place **before you take Exam 1**) in which you:
    - use as the e-mail `Subject: CS 100 - Exam 1 bonus`
    - **briefly DESCRIBE (a sentence or two is fine) what** you **covered** at the exam study session
    - INCLUDE a **picture** of everyone involved in the study group (or at least yourself and at least one other CS 100 student)
    - (**EACH** person who wants the 5 point bonus **should send an e-mail message to me** containing this `Subject:` line AND these **TWO** parts.)
  - Please let me know if you have any questions about this, and I hope it encourages you to study together for Exam 1.

Chapter 1 - Intro to Critical Thinking

- What is meant by the term "critical thinking"?
- What are some reasons why critical thinking can be a useful ability to have?
- Consider the critical thinking standards discussed in Chapter 1 (clarity, precision, accuracy, relevance, consistency, logical correctness, completeness, fairness)
  - What is meant by each of these standards, within the area of critical thinking?
  - For each of these, why is a lack of that standard detrimental to critical thinking?
- What are some common barriers to critical thinking?

Chapter 2 - Recognizing Arguments

- EXPECT IT: You will have to tell whether natural language sentences are statements or not (in a logical sense).
- EXPECT IT: You will be asked to tell whether a given passage is an argument or not.
- EXPECT IT: You will be asked to identify the premise(s) and conclusion of given arguments.
- You could be asked questions about the concepts of a logical (natural language) statement, argument, premise, and conclusion;
- What is a "rhetorical question"? what is an "ought imperative"? You should be able to recognize these types of statements as well;
- You could be asked questions about the discussed 5 types of non-argumentative discourse that are sometimes confused with arguments (reports, unsupported assertions, conditional statements, illustrations, explanations)
  - You could also be asked to identify which of these 5 types a non-argument passage is;
  - For a conditional (if-then) statement: What is its antecedent? What is its consequent? You should be able to identify the antecedent and the consequent in an conditional statement.
  - What is the “Principle of Charity”? How might it be able to be used in distinguishing an illustration or explanation from an argument?
  - The 4 basic tests for distinguishing an argument from an explanation – Common Knowledge Test, Past Event Test, Author's Intent Test, Principle of Charity Test. You should be able to apply these tests to determine whether a non-argument fails any of these tests.

Chapter 3 - Basic Logical Concepts

- What are two key questions one should always ask in evaluating an argument?
- What is a syllogism? What is a hypothetical syllogism?
- EXPECT IT: Given a hypothetical syllogism, you should be able to identify if it is one of the "classic" types of syllogisms (*modus ponens*, *modus tollens*, chain argument). You should also be able to identify invalid forms such as "denying the antecedent" and "affirming the consequent".

- Given the first two steps of a valid hypothetical syllogism, you should be able to give a reasonable logical conclusion to the syllogism.
- EXPECT IT: Given a deductive argument, you should be able to give which common deductive pattern it uses: hypothetical syllogism (*modus ponens*, *modus tollens*, chain argument), categorical syllogism, argument by elimination, argument based on mathematics, argument from definition, etc.
- EXPECT IT: Given an inductive argument, you should be able to give which common inductive pattern it uses: inductive generalization, predictive argument, argument from authority, causal argument, statistical argument, argument from analogy, etc.
- EXPECT IT: Given an argument, you should be able to determine whether it is best interpreted as deductive or inductive; you might also be asked what common pattern it uses.
- EXPECT IT: For appropriate deductive arguments, you should be able to tell whether they are valid or invalid, AND whether valid arguments are sound or unsound.
- EXPECT IT: For appropriate inductive arguments, you should be able to tell whether they are strong or weak, AND whether strong arguments are cogent or non-cogent.
- The 4 tests we discussed for helping to determine whether an argument should be regarded as deductive and inductive: Indicate Word Test, Strict Necessity Test, Common Pattern Test, Principle of Charity Test. You could be asked questions about these tests or that use these tests!