



# **CS 428**

# **MIDTERM REVIEW**

Winter 2022

Bruce F. Webster

- On-line via Learning Suite – you can take it anywhere, but you will have a 3-hour limit once you start
- Test will open at 0005 on 03/28 and will close at 2359 the same day (~24 hrs)
- Open book, open note, open device – but your own work (no group tests, no asking others for help)
- Questions will typically call for citations from readings and/or lectures
- Expect some questions to deal with lifecycle deliverables
- Test will be five questions, each worth 25 points
- Total test score will be 125 points (25% of your class grade)

## **THE TEST ITSELF**

- *The Mythical Man-Month* (Brooks)
- *Peopleware* (DeMarco & Lister)
- *Facts and Fallacies of Software Engineering* (Glass)
- “The Five Orders of Ignorance” (Armour)
- “System-Level Heuristics” (Meier & Rechtin)
- Webster readings #1 through #6 (though #7 can be used also)
- All my in-class lectures (and accompanying slides)
- Podcasts

## **CLASS SOURCES FOR THE MIDTERM**

- *The Mythical Man-Month* (Brooks): Chapter 18 (“Propositions of *The Mythical Man-Month*: True or False?”)
- *Peopleware* (DeMarco & Lister): Table of contents
- *Facts & Fallacies of Software Engineering* (Glass): Table of contents
- Webster #6 (pitfalls) (<http://bfwa.com/pitfalls/>)
- Online readings list (<http://cs428.cs.byu.edu/index.php/readings-and-podcasts/> )
- All lecture slides (<http://cs428.cs.byu.edu/index.php/class-lecture-videos-slides/>)
  - Download, index for searching, have handy
- Your own notes

# GREAT MIDTERM STUDY GUIDES/CHEAT SHEETS

- **IMPORTANT: always write your answers first in a local editor, and *then* copy-and-paste each into Learning Suite**
- You must cite from at least one of the class sources when a citation is asked for.
- Feel free to cite to my lecture slides (but if the point is simply restating a class source, you must cite the source instead).
- Feel free to use ‘omitted’ chapters/articles if you feel them relevant.
- Form of citation varies by source, but should be sufficient to identify ***specifically*** what you are relying upon
- Basic score for a brief correct answer and an appropriate citation is 80% (4 of 5 points)
  - To get 5 points, you need to add some real detail to your answer, reflecting your grasp of the issue and the material

## ON GIVING ANSWERS

- For a given answer:
  - Missing: 0 points
  - Inappropriate answer and/or irrelevant citation: 1 to 2 points (my call)
  - Unspecific citation (“Brooks, chapter 2”) or correct explanation with no/wrong citation (“Brooks Law”): 3 points
  - Citation with some detail (1-2 sentences): 4 points (this is the ‘default’ score)
    - **Adding people to a late project makes it later. Brooks Law, TMMM, Chapter 2**
  - To get 5 points, you need to *explain in detail* (2 to 5 sentences) with a correct citation:
    - **Not having enough programming time is a huge risk here. The devs will likely be rushed. Peopleware says “People under time pressure don’t work better—they just work faster. In order to work faster, they may have to sacrifice the quality of the product and of their own work experience” (DeMarco, Chapter 3). When the devs don’t have the time that they need, they will feel rushed. When that happens they will make mistakes. This will inevitably lower the quality of the product as well as risk the devs quitting because they aren’t happy with working at MidCo anymore.**
- For the entire test: up to 5 points extra credit granted by me based on how impressed I was with your grasp of the materials and concepts.

# GRADING CRITERIA

# SAMPLE QUESTION #1

- Two of your undergrad CS classmates approach you with an idea for a software startup, developing a mobile device app that would make use of recently announced emerging technology on the intended target platform.
- Leaving aside issues of employment, financing, and intellectual property, for five (5) points each, identify five (5) different concerns, risks, or issues that you would consider essential to answer, or at least address, before deciding to join this venture. Provide at least one (1) citation for each concern/issue/risk.

# SAMPLE QUESTION #2

- You are now the project manager of the development team at this start-up company, and it's going through some tough times. You still believe in the software under development (which hasn't shipped yet), but some of your developers are beginning to wonder if they shouldn't find jobs elsewhere.
- For up to five (5) points each, list and explain up to five (5) proactive steps (with at least one [1] citation for each) that you can take to strengthen the team and encourage all your developers to stay for a while longer. Assume that you have a decent (though not extravagant) budget to work with.



# SAMPLE QUESTION #3

- You are part of an IT team at MidCo working on developing (from scratch) custom accounting software for MidCo. The project is at least two months behind schedule, but the CEO, CFO, and CIO all agree that it absolutely must be in production on time. To that end, they are implementing the following changes:
  - The development staff will be doubled in size (from 6 to 12).
  - All developers will be required to put in 20 hours overtime/week.
  - All developers need to be at the office at 8 am each morning -- including Saturday -- for a mandatory 1-hour staff meeting.
  - The schedule time allocated to testing will be cut in half.
  - All year-end bonuses will be canceled if the project isn't on time
- For up to five (5) points each, explain why each of these five (5) proposals will not help, giving at least one (1) citation each.