CIS 842:
Specification and Verification of Reactive Systems

Lecture ADM:
Course Administration

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CIS 842 People

- Instructor
  - John Hatcliff
    Responsible for lectures, making up assignments and exams, running laboratory sections and answering your questions
- ...with assistance from
  - Matthew Dwyer
  - Robby
    Will help with lecture preparation and projects. Please do not ask them questions about the course. It’s not their responsibility, and their time is valuable.
Course Resources

- This course will be taught using a variety of resources
  - an extensive web-site
  - Yahoo news group
  - on-line lectures
  - laboratory sections w/ quizzes and exercises
  - readings and course notes
  - model-checking tools
  - homework assignments
  - mid-term and final exams

Course Web-site

- The web-site collects all of the relevant information for the course
  - http://www.cis.ksu.edu/~hatcliff/842
- Schedule of lectures
  - Links to slides and streaming video at K-State Online
- Background reading requirements
- Daily life
  - Notices of homeworks, lectures, assignments, discussions, etc.
  - Updated during semester (flush your cache)
News Group

- Yahoo News Group
- www.yahoogroups.com/group/cis842
- All group correspondence for the course will be carried on this group, so you must sign up and check it daily
- Typically...
  - send mail to cis842@yahoogroups.com
  - set up your profile so that group messages come to preferred email account

Online Lectures

- Lectures are self-contained modules
  - Meant to cover a single topic or theme
  - May vary in length
- Some lectures will
  - Be demonstrations of tools
  - Be presentation of significant examples
  - Be presentations of homework assignments
- All lectures will have “For You To Do” exercises where you stop the lecture, do a simple exercise, and then return to the lecture
  - These ensure that you are “engaged” in the lecture
- Material for weekly quizzes will often be based on the “For You To Do” activities
  - So be sure that you do these
- You can (re)watch the lectures as often as you like
Laboratory Sections

- Online lectures do not allow for feedback
  - I need to know if you understand
- Format for Laboratory Sections
  - Short question/answer time
    - You ask me questions (on the spot, send me email)
  - 20 minute quiz
    - based on lecture material
    - if you have watched the lectures carefully, you will not have any trouble with the quizzes
  - Examples/exercises worked through together
    - often this will be material that people are having trouble with
- Once per week (during the Thursday time slot)

Readings

- There is no textbook for this class
- We will attempt to write some notes that supplement the slides (but no promises!)
  - This may eventually turn into a text book (but again, no promises!)
- You will have some additional assigned readings (research papers)
- Read before the lecture
  - Re-read again after the lecture if needed
- There are additional readings that we can provide if you feel your background is weak
Model-checking Tools

- People learn best by thinking then doing
  - Then thinking some more and doing some more
- We emphasize tool-based verification methods
  - Spin, Bandera, BIR
- You’ll build your own simple model-checking tool as well
  - This will really help you understand the fundamental principles of the techniques that we are using
- Tools will be installed at K-State
  - Most students will want to install them on their own machines

Homework Assignments

- For each tool you learn to work with (Spin, Bandera)
  - An introductory homework
  - A significant “mini-project”
- Significant implementation assignments (2-3) that involve implementing the main functions of a simple model-checker
- 5-8 homeworks in total
- Homeworks are to be solved individually
  - Talk to your friends about how to solve abstract problems
  - Do not share parts of your solutions
Examinations

- We believe that you really learn when you study a topic more than once
- Examinations are a mechanism that forces you to do this
  - Mid-term exam, 1.5 hours
  - Final exam, 2.0 hours
- Exams are closed book/notes

Grading

- The following weightings will be used to calculate your final grade
  - Homeworks (45%)
  - Quizzes (20%)
  - Mid-term Exam (15%)
  - Final Exam (20%)
- Final grades are not curved
  - A: 90%-100%, B: 80%-89%, ...
    - To a grade of A in the course, you must obtain a grade of B on at least one of the exams (for B, you must obtain C, etc.)
    - If you do not satisfy this condition, the fixed grading scale does not apply, and I will assign a grade that I feel is appropriate
- There will probably be some extra credit
Late Work

- Due dates should be taken seriously
  - Students who fall behind in this course tend to fail
- The following policy applies
  - 1% reduction in your score for each hour after the due date/time
- Assignments are turned in on-line
  - Time stamps will be used to determine lateness

Make-up Work

- In general there will be no make up quizzes, exams or assignments
- If you have an emergency that prevents you from completing work
  - Contact us prior to the due date
Surviving This Course

- You will learn a lot in this course
  - It will require a significant amount of time
  - You will need to manage your time
- To get an A you will probably spend
  - 4-6 hour/week : lecture/lab
  - 2-5 hours/week : reading
  - 20-30 hours/tool : learning to use the tool
  - 10-30 hours/assignment : homework
  - 10-20 hours/exam : studying

More Survival Tips

- Don’t be afraid to ask questions
  - Use my office hours
  - Use email
- The better your preparation, the more inclined I will be to help
  - If you haven’t watched the lecture, done the reading, or played with the tool then I’ll have you go away and do those things before answering your questions