

CIS 890: High-Assurance Systems

Spring 2021

Lecture 0: Course Administration

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CIS 890 People

- Instructors
 - John Hatcliff (hatcliff@ksu.edu)
- Teaching Assistant
 - (none)
- Helpers
 - Hari Thiagarajan (PhD student working in the SAnToS Research Group)
 - Jason Belt (Research Associate working in the SAnToS Research Group)
 - Brian Larson (collaborator with decades of experience in safety-critical systems)

Course Resources

- Course web-site
- Online lectures
- Software development tools
- Homework assignments
- Course project resources

Course Web-site

- The URL for the course web-site is...
 - <http://highassurance.santoslal.org>
- The **Syllabus** link provides the official policies of the course
- The **Course Schedule** link provides the schedule of lectures, quizzes, assignments, and exams for the course. You will need to monitor this page closely.
- The **Lectures** links provides links to all the content artifacts (video, slides, examples, etc.) for the course.
- We may also make use of the K-State Online web-based infrastructure as explained on the following slide...

K-State Canvas

- K-State Canvas will be used primarily to manage homework submissions for the course
 - <http://canvas.ksu.edu/>
- You will interact with Canvas primarily for assignment submission and viewing recording grades.
- Announcements via the Canvas mail list facility will be the primary means for the instructors to communicate with students outside of class.
- *You must closely monitor the email address that you have registered with Canvas.*

Google Docs

- To facilitate collaborative development, several aspects of course projects will be carried out using Google Docs.
- I will share a Google Docs folder with you later when we start using it.

Classroom Sessions

- This course will be run with a mixture of
 - Online recorded content
 - Live Zoom meetings
 - Group class meetings
 - Individual meetings between instructor and student
 - In person class meetings (may not happen very often for the first few weeks)
- Live Zoom meetings during the allocated classroom time will be used for
 - Guidance to recorded content
 - Demonstrations of tools
 - Coordination of course project
 - Student project reports
- Typically, we will only have one live Zoom or in person group meeting a week.
- I am going to try to have a brief Zoom check-in with each student individually each week

Lectures

- Lectures are self-contained teaching sessions (usually with PowerPoint slides and/or recorded video)
 - Meant to cover a topic
 - May vary in length
- Some lectures will
 - Seem like traditional classroom lectures
 - Be demonstrations of tools
 - Be presentation of significant examples
 - Be presentations of homework assignments
- Most lectures may be recorded and posted online

Teaching Approach

- First half of semester
 - “traditional” lectures with weekly homeworks
 - a few quizzes
 - project planning
- Second half of semester
 - project work and reports to instructor and class
- We emphasize tool-based system modeling and implementation methods
 - Modeling language – AADL supported by the OSATE Eclipse-based IDE
 - Programming language for components -- Slang (a safety-critical subset of the Scala programming language) supported by the Sireum IVE IntelliJ-based IDE

Assignments

- Individual assignments will include...
 - Modifying/Enhancing existing AADL models
 - Running automated analyses on AADL models
 - Performing code generation from AADL models using HAMR
 - Implementing AADL component code skeletons using Slang
- Project
 - Implement part of prototype safety-critical system, including both AADL models and Slang component implementations

Quizzes

- Some weeks, we will have an in-class quiz covering topics from recent lectures

Grading

- Evaluated Course Activities
 - Individual Assignments – 35%
 - Quizzes – 15%
 - Project -- 50%
- Grading Scale
 - 90%+ A
 - 80%+ B
 - 70%+ C
 - 60%+ D
 - Below 60% F

Schedule

- The schedule on the course web page will be the primary page that you will look at to organize your activities
- Weekly schedule lists and links lecture materials (slides, videos), homework assignments
- Conventional lectures and assignments until late March
- Project activities for the rest of the class
- No final exam, but we will use the final exam week for final project presentations

- Good luck in the course,
and we hope you enjoy it!