Advanced Methods in Probabilistic Risk Assessment

COURSE INFORMATION

1. **Instructor**:   Dr. Mihai A. Diaconeasa

   E-mail (typical response within 12 hours): madiacon@ncsu.edu
   Office hours: by appointment (use e-mail to request a time)

2. **Schedule:**   TBD on **https://ncsu.zoom.us/j/8292985327**.

3. **Course structure:** This is a reading class. Each session will be structured as follows:

   - Each student presents in 5-10 minutes a review of the journal paper that has been read during the previous week. Emphasize the methods of the modeling and simulations, as well as describe the advantages of the approach. Discuss how a model is developed and what is done to verify and validate it. Critically describe what else could be done to improve the presented research.
   - A one-page summary (about 500 words) for the journal paper is submitted and uploaded as a pdf document to Moodle a day before the meeting time.
   - Each student proposes 3 new journal papers to select during the class for the next week's reading.

4. **Topics to cover**: 10 journal papers will be reviewed and critiqued by each student. In particular, the following areas must be covered:

   - Development of a full scope PRA study.
   - Demonstration of a dynamic PRA application.
   - Modeling of one PRA element in detail.
   - Implementation of a dynamic PRA approach.
   - Risk-informed licensing approach.
   - Each student should include:
     i.   At least 2 "classic" papers in their set, e.g., from 1970-1990 that introduce some fundamental concepts.
     ii.   At least 2 "new" papers from 2010 until present time that present state-of-the-art techniques and results in the field.
     iii. At least 1 comprehensive review paper.

5. **Attendance:** Required; Active class participation is strongly encouraged. University policy on definition of excused absences:

   https://policies.ncsu.edu/regulation/reg-02-20-03-attendance-regulations/

   Personal Problems: We understand that sometimes life makes it difficult to focus on schoolwork. If you are having a personal problem that affects your participation in this course, please talk to us to create a plan. Please do not wait until the end of the semester to share any challenges that have negatively impacted your engagement and academic performance. The sooner we connect, the more options we will have available to us to support your overall academic success. If you are not comfortable speaking with us directly, please utilize the other student resources provided below in order to understand how to best approach success in this course given your personal needs as soon as possible.

Providing feedback to us: We encourage your feedback at any time throughout the semester about things that are helping you learn, or things that aren't helping. Please let us know if there are ways that we can improve the course to better support your learning.

6. **Grading**:

NE 795-652	
Critiques	60%
Review Paper	40%

A+ ≥ 96%*   A 92 – 95%   A- 89 – 91%
B+ 86 – 88%   B 82 – 85%   B- 79 – 81%
C+ 76 – 78%   C 72 – 75%   C- 69 – 71%
D+ 65 – 68%   D 61 – 64%   D- 56 – 60%
                   F < 56%

*Must be top 5% student in the class as well to earn the "A+".

7. **Makeup Work Policy:** We understand that sometimes life makes it difficult to focus on schoolwork. If you are having a personal problem that affects your participation in this course, please talk to us as early as possible to create a plan.

8. **Academic Integrity**:

- University policy on academic integrity: **Code of Student Conduct Policy** https://policies.ncsu.edu/policy/pol-11-35-01/
- Collaboration on homework assignments is allowed, but the submitted work must be your own individual work. Homework assignments must not be treated as group assignments. Zero grade will be assigned for particular homework for the first offence. Second offense will be reported to the Office of Student Conduct.
- Alternatives to Academic Dishonesty:
  i. Seek out help – connect with your instructor and teaching assistant, ask if there is special tutoring available.
  ii. Drop the course – can you take it next semester it is offered when you might feel more prepared and less pressured?
  iii. Ask for an extension – if you explain your situation to your instructor, an extended deadline may be granted.
  iv. See a counselor at the Counseling Center, and/or your school, college or department – NC State has many resources for students who are feeling the stresses of academic and personal pressures.

9. **Supporting Fellow Students in Distress:** As members of the NC State Wolfpack community, we each share a personal responsibility to express concern for one another and to ensure that this classroom and the campus as a whole remains a safe environment for learning. Occasionally, you may come across a fellow classmate whose personal behavior concerns or worries you. When this is the case, I would encourage you to report this behavior by making a referral on the **NC State Cares** website: https://prevention.dasa.ncsu.edu/nc-state-cares/about/. Although you can report anonymously, it is preferred that you share your contact information so they can follow-up with you personally.

10. **Accommodations for Disabilities:** Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the **Academic Accommodations for Students with Disabilities Regulation** (https://policies.ncsu.edu/regulation/reg-02-20-01/).

11. **Digital Course Components:** Students may be required to disclose personally identifiable information to other students in the course, via digital tools, such as email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course. All Moodle deliverables will have their originality automatically evaluated with the Turnitin software. You are not allowed to share any course materials with anyone or upload to any websites without instructor's written approval.

12. **Use of electronic devices in class:** Communication devices are to be turned on silent prior to entering the classroom. No exceptions. Use of electronic devices during class for purposes other than taking notes is prohibited. Tablets may be used in the lay-flat position on the desk for following the posted lecture materials or taking electronic notes only.

13. **Health and Well-Being Resources:** These are difficult times, and academic and personal stress are natural results. Everyone is encouraged to take care of themselves and their peers. If you need additional support, there are many resources on campus to help you:

    - Counseling Center (NCSU Counseling Center)
    - Student Health Services (Health Services | Student)
    - If the personal behavior of a classmate concerns or worries you, either for the classmate's well-being or yours, we encourage you to report this behavior to the NC State CARES team: (Share a Concern).
    - If you or someone you know are experiencing food, housing, or financial insecurity, please see the Pack Essentials Program (Pack Essentials).

14. **Non-Discrimination Policy:** NC State provides equal opportunity and affirmative action efforts, and prohibits all forms of unlawful discrimination, harassment, and retaliation ("Prohibited Conduct") that are based upon a person's race, color, religion, sex (including pregnancy), national origin, age (40 or older), disability, gender identity, genetic information, sexual orientation, or veteran status (individually and collectively, "Protected Status"). Additional information as to each Protected Status is included in NCSU REG 04.25.02 (Discrimination, Harassment and Retaliation Complaint Procedure). NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at https://policies.ncsu.edu/policy/pol-04-25-05 or https://oied.ncsu.edu/divweb/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.