1. **Instructor:** Tao Pang  
   **Office:** SAS 4116  
   **Telephone:** 513-2110  
   **Email:** tpang@ncsu.edu  
   **Office hours:** Tu, Th 4-5pm, or by appointment.

2. **Prerequisites:**

   MA 421 or equivalent is preferred but not required. However, the student should be familiar with basic probability concepts and distributions. Knowledge of long-term models as developed in MA 412—Long-Term Actuarial Models is not assumed.

3. **Textbooks:**

4. **Course Objectives:**

   This course introduces students to risk management systems by developing some short-term probability models for potential losses. Short-term probability models are appropriate for most traditional property, liability, health and group insurance systems.

5. **Outline of Course:**
   - *Characterizing frequency distributions and loss distributions:* Characterize distributions in terms of their parameters and moments; techniques for creating new families of distributions; applications for which these distributions are used.
   - *Frequency and severity with coverage modifications:* Deductible, policy limits and coinsurances and their impacts on loss and frequency distributions.
   - *Aggregate loss models:* Probability distribution of an aggregate loss modeled as the sum of a random number of individual losses; compound distributions and their properties; tabulating a distribution by exact and approximate methods; applications; individual risk models.

6. **Grade Policy**
   - **Homework:** 20%
     - Homework will be assigned on weekly basis (total of five). Late homework will not be accepted.
     - Homework assignments will be given in course moodle.
- **Tests: 50%**
  - Two in-class 90-minute tests will be given on July 8th, Monday and July 19th, Friday.
  - Each test will cover the topics studied in classes before the test and after the previous test, if any.
  - **No make-up test will be given.**
- **Final Exam: 30%**
  - Exam time: July 30th, Tuesday, 8:00am-11:00am.
  - It will cover the work of the entire semester.

7. **Attendance Policy:**
The attendance policy is consistent with the Academic Regulations which can be found at [http://policies.ncsu.edu/regulation/reg-02-20-03](http://policies.ncsu.edu/regulation/reg-02-20-03)

8. **Disability Services for Students:**
Students with a disability must contact the NCSU Disability Services.
Additional information: [http://dso.dasa.ncsu.edu/](http://dso.dasa.ncsu.edu/)