

**\*\*Disclaimer\*\***

This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class. Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be from a previous semester and are subject to change. Please refer to your instructor for the most recent version of the syllabus.



# SYLLABUS

## Course Information

<b>Course Title &amp; Number:</b>	EEE 598 – Power System Reliability.
<b>Course Term:</b>	Fall 2019.
<b>Meeting Time &amp; Location:</b>	Monday, Wednesday and Friday, 2:00 PM – 2:50 PM, ECG G237.
<b>Course Website:</b>	Canvas Course Website.
<b>Course Topics:</b>	<p>This course focuses on quantitative methods for evaluating power system reliability. Students are expected to understand how to use analytical methods and Monte Carlo simulation methods to evaluate various reliability metrics for multi-area power systems, considering load and weather fluctuations.</p> <p>This course covers the following topics (tentative, subject to change):</p> <ol style="list-style-type: none"><li>1) Introduction to quantitative reliability analysis;</li><li>2) Probability theory and stochastic processes;</li><li>3) Frequency balance approach for reliability analysis;</li><li>4) Methods of quantitative reliability analysis;</li><li>5) Generation system reliability;</li><li>6) Multi-area power system reliability;</li><li>7) Composite power system reliability evaluation;</li><li>8) Impact of integrating renewable energy source on the grid reliability.</li></ol>
<b>Prerequisite:</b>	EEE 471 – Power System Analysis (or equivalent) and probability theory, or permission from the instructor.
<b>Software Usage:</b>	Matlab programming is required for completing the course project.

## Instructor Information

<b>Instructor Name:</b>	Meng Wu (Email: <a href="mailto:mwu@asu.edu">mwu@asu.edu</a> , Phone: 480-965-8706, Office: ERC 527)
<b>Instructor Office Hours:</b>	Monday 3:00 PM – 4:00 PM Wednesday 3:00 PM – 4:00 PM

## Textbook & References

<b>Textbook:</b>	C. Singh & R. Billinton, System Reliability Modelling and Evaluation, Hutchinson, London, 1977.
<b>Other References:</b>	<ol style="list-style-type: none"><li>1. J. Endrenyi, Reliability Modeling in Electric Power Systems, John Wiley, 1978</li><li>2. R. Billinton &amp; R. Allan, Reliability Evaluation of Power Systems, Plenum Press, 1984</li></ol>

## Evaluation Policies

<b>Grading:</b>	Homework (20%) Project (30%) Mid-term Exam (25%) Final Exam (25%)
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