1. **Course number and name**  
EE 493: Protection of Power Systems I

2. **Credits and contact hours**  
3.0 (three lecture hours per week)

3. **Instructor’s or course coordinator’s name**  
Saeed Lotfifard

4. **Text book, title, author, and year**  
*Other supplemental materials*  
Instructor notes will be provided.

5. **Specific course information**  
   a. **Catalog description:** Analysis and equipment fundamentals of power system protection; symmetrical components, fault calculations; fuses; and relays including burden calculations.  
   b. **Prerequisites or co-requisites:** EE 361 with a C or better; Certified major in Electrical Engineering, Computer Science, or Computer Engineering.

6. **Specific goals for the course**  
At the end of this course, students must be able to understand the principal and functionalities of the following topics:  
- Symmetrical fault current calculations (1,6)  
- Symmetrical components (1,6)  
- Unsymmetrical fault calculations (1,6)  
- Introduction to protective relaying (1,6)  
- Relay operating principles (1,6)  
- Current and voltage transformers (1,6)  
- Over-current line protection (1,6)  
- Distance protection of lines (1,6)  
- Rotating machine protection (1,6)  
- Transformer protection (1,6)  
- Bus protection (1,6)  
- Distribution feeder protection (1,6)

7. **Brief list of topics to be covered**  
   - Overcurrent protection,  
   - Fuse-Recloser-sectionalizer,
• Symmetrical faults,
• Symmetrical components, and sequence networks,
• Unsymmetrical faults,
• Distance protection, line protection and related issues,
• Differential protection for transformer and rotating machine,
• Bus bar protection,
• CT and VT selection and sizing.