



### Sample Brief Course Description

<b>Course title</b>	Power System Analysis
<b>Course code</b>	ECE 332
<b>College</b>	Engineering
<b>Department / Program</b>	Engineering / Renewable Energy
<b>Year/ Level</b>	4/8
<b>Course Type</b>	<b>A.</b> <input type="checkbox"/> University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Program <input type="checkbox"/> Others <b>b.</b> <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective
<b>Credited Hours</b>	3 credit hours
<b>Contact Hours</b>	(LT:2, LB:2 ,TR:0)
<b>Pre-requisites (if any)</b>	ECE 331/PHYS276
<b>Co-requisites (if any)</b>	None
<b>Course description</b>	Basic principles, Per-unit system, Power generation, Transmission and sub transmission, Distribution, Loads, Power factor correction, , Generator and transformer models, line model, Power flow analysis, Power dispatch problem, Transient stability, Dynamic stability, Symmetrical components and unbalanced faults, Load frequency



	control, Automatic generation control, Reactive power and generation control, Power system stabilizer (PSS) design.
<b>Course Main Objectives</b>	<ul style="list-style-type: none"><li>- Review three-phase AC circuits and the basic concepts of magnetic circuits and transformers.</li><li>- Outline the behaviour of the basic components of power systems.</li><li>- Outline major types of components used in electrical power systems.</li><li>- Analyze different types of short-circuit faults.</li><li>- Understand Power flow problem.</li><li>- Understand transient stability problem.</li><li>- Understand power system control.</li><li>- Use reactive compensation to change a load's apparent power factor to any specified value.</li><li>- Discuss the selection of PSS parameters.</li></ul>
<b>Learning Outcomes</b>	<b>Knowledge and Understanding</b>
	<b>Skills:</b>
	<b>Values:</b>

References:

-Hadi Saadat, Power system analysis, McGraw-Hill, WCB .

2- Stanley H. Horowitz, Arun G. Phadke, Power system relaying (3rd Edition), John Wiley & Sons, Ltd.

3- Electromechanical Energy Devices and Power Systems, Zia A. Yamayee..., John Wiley and Sons (WIE).