

Course Syllabus	EECS 4490 – Electronic Energy Processing II
Credits & Contact Hours	3 credit hours & two 75-minute lecture contact hours per week
Coordinator	Dr. Raghav Khanna
Textbook	R. W. Erickson, D. Maksimovic, "Fundamentals of Power Electronics," 2 nd edition, Kluwer 2001, ISBN: 0-7923-7270-0
Course Information	<p>Small signal analysis of DC-DC converters, transfer functions in DC-DC converter and frequency response, analytical semiconductor device models, control in power electronics, soft switching techniques, sinusoidal pulse width modulation (SPWM), and isolated DC-DC converters.</p> <p>Prerequisite: EECS 4480 Electronic Energy Processing I</p> <p>Elective course</p>
Specific Goals - Student Learning Objectives	<p>The student will be able to</p> <ol style="list-style-type: none"> 1. Understand how the dynamics of DC-DC converters effect their transient response. 2. Understand which converters have right and left-hand plane zeros. 3. Analyze and design an inverter using SPWM. 4. Analyze and design isolated DC-DC converters.
Topics	<ol style="list-style-type: none"> 1. Small signal analysis of non-isolated DC-DC converters 2. Isolated DC-DC converters 3. Small signal analysis of isolated DC-DC converters 4. SPWM inverter design 5. Analytical semiconductor device modeling