

1.	Title of the course	Advanced Power Electronics
2.	Course number	EE552L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To EE5058/19
6.	To be offered by	Department of Electrical Engineering
7.	To take effect from	January 2022
8.	Prerequisite	CoT for UG
9.	Course Objective(s): To introduce different practical applications of power electronics in DC-DC, DC-AC and AC-DC power conversions through modeling and control of power electronic converters. To introduce new converters for high power applications.	
10.	Course Content: Modeling and control of single phase and three phase AC-DC converters, power factor correction in single phase and three phase AC-DC converters, modeling and control of grid connected single phase and three phase DC-AC inverters, multilevel converters for high power drives, dual active bridge and triple active bridge converters and control, modeling and control of resonant converters, design of magnetics, design of EV chargers, machine analysis and control.	
11.	Textbook(s): 1. Rashid M, <i>Power Electronics: Devices, Circuits and Applications</i> , 4th Edition, Pearson Education (2017). 2. Umanand L, <i>Power Electronics: Essentials and Applications</i> , 1st Edition, Wiley (2009).	
12.	Reference(s): 1. Bhimbra P S, <i>Power Electronics</i> , 6th Edition, Khanna (2018). 2. Mohan N, Undeland T, <i>Power Electronics: Converters Applications and Design</i> , 3rd Edition, Wiley (2013).	