

SEKOLAH KEJURUTERAAN ELEKTRIK	
Nama Matapelajaran: Makmal Tahun 3 (PBL)	Semakan : 3
Kod Matapelajaran : SKEE 3742	Tarikh Keluaran : 2008
	Pindaan Terakhir : 2019
	No. Prosedur : PK-UTM-FKE-(0)-10




**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

## SKEE 3742

**SEKOLAH KEJURUTERAAN ELEKTRIK**  
**FAKULTI KEJURUTERAAN**  
**UNIVERSITI TEKNOLOGI MALAYSIA**

### POWER ELECTRONICS LABORATORY STUDENT PACK

#### Adjustable DC Power Supply using Full-Wave Controlled AC-DC Converter

<p>Disediakan oleh:</p> <p>PM. Dr. Nik Rumzi Nik Idris PM. Dr. Naziha Ahmad Azli PM. Dr. Awang Jusoh PM. Dr. Junaidi Abdul Aziz PM. Dr. Shahrin Md. Ayob PM. Ir. Dr. Tan Chee Wei Dr. Mohd. Rodhi Sahid Dr. Norjulia Mohammad Nordin En. Nik Din Muhammad En. Zaki Daud</p> <p>Tarikh : 18 Julai 2019</p>	<p>Disahkan oleh:</p> <p>Pengarah Program Dr. Jasrul Jamani Jamian</p> <p>Tandatangan Cop</p> <p></p> <p><b>DR. JASRUL JAMANI BIN JAMIAN</b> Senior Lecturer Electrical Power Eng. Dept. (POWER) Faculty of Electrical Engineering Universiti Teknologi Malaysia 81310 UTM Johor Bahru Johor Darul Takzim</p> <p>Tarikh : 18 Julai 2019</p>
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<b>1. Problem Guide:</b>				
(a) <b>Problem-solving Time-line</b>				
	<b>Activities</b>	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>
1.	Understand the given problem. Identify what you already know and what you need to know. Brainstorming for ideas. Identify the tools that will be used.	√		
2.	Present ideas to facilitator. Start working on solution and simulation design Run the simulation to obtain results.		√	
3.	Set-up hardware and run experiment. Validate the simulation result.			√
(b) <b>Report Writing</b>	The report should be submitted <b>ONE WEEK</b> after Week 3. Other than the general guide specified by the Laboratory Coordinator, your report for this laboratory must also include			
	<ul style="list-style-type: none"> <li>▪ Matlab/Simulink detail simulation results <i>OR</i> Pspice simulation</li> </ul>			
(c) <b>Questions That Can Help You Tackle The Problem</b>	<ul style="list-style-type: none"> <li>▪ How can we convert ac to ac power?</li> <li>▪ How can we get variable and higher dc output from constant ac input</li> </ul>			
<b>2. Software:</b>				
(a)	Matlab/Simulink are available in most PCs at the laboratory. Please ask the Laboratory technician for assistance. Use the help file within the software to understand the functions of the Simulink blocks.			
<b>3. Additional resources:</b>				
(a)	Basic Simulink tutorial <a href="http://edu.levitas.org/Tutorials/Matlab/Simulink/">http://edu.levitas.org/Tutorials/Matlab/Simulink/</a>			
(b)	SimPowerSystems information <a href="http://www.mathworks.com/access/helpdesk_r13/help/toolbox/physmod/powersys/powersys.html">http://www.mathworks.com/access/helpdesk_r13/help/toolbox/physmod/powersys/powersys.html</a>			
(c)	Aircraft electrical system <a href="http://www.aerospaceweb.org/question/electronics/q0219.shtml">http://www.aerospaceweb.org/question/electronics/q0219.shtml</a>			
(d)	Use Google for further search on related information. Choose relevant keywords from the given problem.			
<b>4. References:</b>				
(a)	Introduction to Power Electronics, Daniel W. Hart, Prentice Hall International Inc., 1997			
(b)	Power Electronics: Circuits, Devices & Applications. Muhammad H. Rashid, Prentice Hall, 2003.			