

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



SKEE 3742

SEKOLAH KEJURUTERAAN ELEKTRIK

FAKULTI KEJURUTERAAN

UNIVERSITI TEKNOLOGI MALAYSIA

POWER ELECTRONICS LABORATORY STUDENT PACK

Single-Phase Square Wave inverter

<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>Tarikh : 18 Julai 2019</p>
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1.	<p>Problem Guide:</p> <p>(a) Problem-solving Time-line</p> <table border="1" data-bbox="228 365 1456 793"> <thead> <tr> <th data-bbox="240 380 298 449"></th> <th data-bbox="298 380 1081 449">Activities</th> <th data-bbox="1081 380 1203 449">Week 1</th> <th data-bbox="1203 380 1325 449">Week 2</th> <th data-bbox="1325 380 1456 449">Week 3</th> </tr> </thead> <tbody> <tr> <td data-bbox="240 449 298 583">1.</td> <td data-bbox="298 449 1081 583"> 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. </td> <td data-bbox="1081 449 1203 583">√</td> <td data-bbox="1203 449 1325 583"></td> <td data-bbox="1325 449 1456 583"></td> </tr> <tr> <td data-bbox="240 583 298 741">2.</td> <td data-bbox="298 583 1081 741"> Present ideas to facilitator. Start working on solution and simulation design Run the simulation to obtain results. Validate simulation result with supervisor / hardware sample result </td> <td data-bbox="1081 583 1203 741"></td> <td data-bbox="1203 583 1325 741">√</td> <td data-bbox="1325 583 1456 741"></td> </tr> <tr> <td data-bbox="240 741 298 793">3.</td> <td data-bbox="298 741 1081 793"> Presentation with supervisor </td> <td data-bbox="1081 741 1203 793"></td> <td data-bbox="1203 741 1325 793"></td> <td data-bbox="1325 741 1456 793">√</td> </tr> </tbody> </table> <p>(b) Report Writing The report should be submitted after Week 3. Other than the general guide specified by the Laboratory Coordinator, your report for this laboratory must also include</p> <ul style="list-style-type: none"> ▪ Matlab/Simulink detail simulation results OR ▪ Pspice simulation results <p>(c) Questions That Can Help You Tackle The Problem</p> <ul style="list-style-type: none"> ▪ How can we convert ac to dc power? ▪ How can we obtain a variable dc power from a constant ac power input? 		Activities	Week 1	Week 2	Week 3	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. Validate simulation result with supervisor / hardware sample result		√		3.	Presentation with supervisor			√
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2.	<p>Software:</p> <p>(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.</p>																				
3.	<p>Additional resources:</p> <p>(a) Basic Simulink tutorial http://edu.levitas.org/Tutorials/Matlab/Simulink/</p> <p>(b) SimPowerSystems information http://www.mathworks.com/access/helpdesk_r13/help/toolbox/physmod/powersys/powersys.html</p> <p>(c) Aircraft electrical system http://www.aerospaceweb.org/question/electronics/q0219.shtml</p> <p>(d) Use Google for further search on related information. Choose relevant keywords from the given problem.</p>																				
4.	<p>References:</p> <p>(a) Introduction to Power Electronics, Daniel W. Hart, Prentice Hall International Inc., 1997</p> <p>(b) Power Electronics: Circuits, Devices & Applications. Muhammad H. Rashid, Prentice Hall, 2003.</p>																				