



Faculty of Civil and Environmental Engineering
Universiti Tun Hussein Onn Malaysia

**FINAL YEAR PROJECT
COMPLEX PROBLEM SOLVING (CPS) IN PROJECT**

Instructions:

- (1) Complete Parts I, II and III after discussing with your supervisor, obtain verification from your supervisor (Part IV).
- (2) Submit the original copy to the Examination Panel during your FYP Seminar presentation.
- (3) Make a duplicate copy of this form and attach it in your FYP Logbook.

PART I: PROJECT DETAILS			
Student's Name:			
Matric Card No.:	FYP Code:	Semester / Session:	
Supervisor's Name:			
Department <i>(Please tick):</i> [<input type="checkbox"/>] JKAP [<input type="checkbox"/>] JKBP [<input type="checkbox"/>] JKIG [<input type="checkbox"/>] JKSB [<input type="checkbox"/>] JSKR			
FYP Title:			
PART II: INTEGRATION OF COMPLEX PROBLEM SOLVING (CPS) IN FYP			
It is hereby certified that this Final Year Project shall have the following Complex Problem Solving (CPS) attributes:			
Please provide a description of activities or work in your Final Year Project that exhibits each CPS attribute.			
Complex Problem Solving			
	Attribute		Characteristic
✓	CPS1	Depth of knowledge required	Cannot be resolved without in-depth knowledge
Description:			
What knowledge/topics will be covered?			
<i>Examination Panel's verdict:</i>			
		Accept	Reject
✓	CPS2	Range of conflicting requirements	Involve wide-ranging or conflicting technical, engineering and other issues
Description:			
What technical or engineering issues will be dealt with? Which standards/procedures/instruments will be used?			
<i>Examination Panel's verdict:</i>			
		Accept	Reject

Filled by the student

Filled by the student after discussing with the supervisor

✓	CPS3	Depth of analysis required	Have no obvious solution and require abstract thinking, originality in analysis to formulate suitable models						
Description: What type of analysis will be performed?									
<i>Examination Panel's verdict:</i>									
		Accept	Reject						
✓	CPS8	Consequences	Have significant consequences in a range of contexts						
Description: What is the impact or contribution of this study to the specified field of engineering?									
<i>Examination Panel's verdict:</i>									
		Accept	Reject						
✓	CPS9	Judgment	Require judgment in decision making						
Description: Which areas of the study will require engineering judgment? How will they be made?									
<i>Examination Panel's verdict:</i>									
		Accept	Reject						
PART III: DECLARATION BY STUDENT									
I hereby declare that the information provided in this form is true and based on discussions made with my supervisor.									
Student's Signature:		Date:							
PART IV: VERIFICATION BY SUPERVISOR									
I hereby verify that the information provided by the student is based on discussions that the student had with me.									
Supervisor's Signature: & Official Stamp		Date:							
PART V: EVALUATION BY EXAMINATION PANEL									
<table border="1"> <tr> <td>Number of CPS attributes approved (defined well)</td> <td></td> <td>x 1 mark</td> </tr> <tr> <td>Score (max. 5 marks)</td> <td colspan="2"></td> </tr> </table>		Number of CPS attributes approved (defined well)		x 1 mark	Score (max. 5 marks)			<i>Note: The score obtained here amounts to 5% of the total evaluation marks for the student's project.</i>	
Number of CPS attributes approved (defined well)		x 1 mark							
Score (max. 5 marks)									
Comments (if any):									
Examination Panel's Signature		Date:							

Filled by the student after discussing with the supervisor

Filled by the student

Filled by the supervisor

Filled by the panel during FYP 1 Seminar



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PART I: PROJECT DETAILS			
Student's Name: LEE MING HUI			
Matric Card No.: AF120192	FYP Code: BFC43402	Semester / Session: SEM 2 2016/2017	
Supervisor's Name: PROF. MADYA DR. CHAN CHEE MING			
Department (Please tick): [] JKAP [] JKBP [X] JKIG [] JKSB [] JSKR			
FYP Title: A STUDY OF GEOTECHNICAL AND ELECTROMAGNETIC (GEO-EM) PROPERTIES OF FINE-GRAINED SOILS WITH CONTAMINATION RISKS			
PART II: INTEGRATION OF COMPLEX PROBLEM SOLVING (CPS) IN FYP			
It is hereby certified that this Final Year Project shall have the following Complex Problem Solving (CPS) attributes:			
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Complex Problem Solving			
Attribute		Characteristic	
✓	CPS1	Depth of knowledge required	Cannot be resolved without in-depth knowledge
Description: The in-depth understanding of geotechnical engineering knowledge is important to conduct in this research, for example, to identify the laboratory test to determine the shear strength of fine-grained soils. The undrained shear strength is also closely related to the cone penetration into the soil. Besides that, the basic knowledge of electromagnetic field should also be required so that the electromagnetic properties like dielectric constant can be used to characterize the soils.			
<i>Examination Panel's verdict:</i> <input checked="" type="checkbox"/> Accept <input type="checkbox"/> Reject			
✓	CPS2	Range of conflicting requirements	Involve wide-ranging or conflicting technical, engineering and other issues
Description: The geotechnical laboratory procedure is based on BS 1377: 1990 and the soil classification is according to the Unified Soil Classification System. While in electromagnetic test, the experiment work involves operating device which requires technical and laboratory assistance from technicians.			
<i>Examination Panel's verdict:</i> <input checked="" type="checkbox"/> Accept <input type="checkbox"/> Reject			

✓	CPS3	Depth of analysis required	Have no obvious solution and require abstract thinking, originality in analysis to formulate suitable models						
<p>Description: The table and graphical analysis is required to analyze data obtained from the laboratory work. The results from EM test can be obtained directly from the computation graph analysis. The graphical method can clearly shows the relationship between the variables tested.</p>									
Examination Panel's verdict: <input checked="" type="checkbox"/> Accept <input type="checkbox"/> Reject									
✓	CPS8	Consequences	Have significant consequences in a range of contexts						
<p>Description: Fine-grained soils are easily contaminated by various substances. The research is going to test fine-grained soils under certain potential contamination risks such as oil contamination, salinity and pH effect by using geotechnical test and electromagnetic test. The shear strength and dielectric constant of soil are tested with influences of these contaminants. Hence, the results obtained from this research can be used site characterization in the future.</p>									
Examination Panel's verdict: <input checked="" type="checkbox"/> Accept <input type="checkbox"/> Reject									
✓	CPS9	Judgment	Require judgment in decision making						
<p>Description: The research requires an accurate and precise judgement and decision making. Every decision is made after discussion with supervisor. When conducting experiment, it is important to maintain the quality of specimen by handling the specimen carefully so that the data will be accurate. This process is crucial as data collecting and analyzing depends solely on results of laboratory works.</p>									
Examination Panel's verdict: <input checked="" type="checkbox"/> Accept <input type="checkbox"/> Reject									
PART III: DECLARATION BY STUDENT									
<p>I hereby declare that the information provided in this form is true and based on discussions made with my supervisor. Student's Signature: Lee Ming Hui Date: 15/5/17</p>									
PART IV: VERIFICATION BY SUPERVISOR									
<p>I hereby verify that the information provided by the student is based on discussions that the student had with me. Supervisor's Signature: Chan Chee Ming Date: 15/5/17 & Official Stamp</p>									
PART V: EVALUATION BY EXAMINATION PANEL									
<table border="1"> <tr> <td>Number of CPS attributes approved (defined well)</td> <td style="text-align: center;">5</td> <td>x 1 mark</td> </tr> <tr> <td>Score (max. 5 marks)</td> <td style="text-align: center;">5</td> <td></td> </tr> </table>		Number of CPS attributes approved (defined well)	5	x 1 mark	Score (max. 5 marks)	5		<p><i>Note:</i> The score obtained here amounts to 5% of the total evaluation marks for the student's project.</p>	
Number of CPS attributes approved (defined well)	5	x 1 mark							
Score (max. 5 marks)	5								
<p>Comments (if any): Examination Panel's: Mohd Hazreek Zainalabidin Date: 29/5/17 Signature</p>									