

# EOSC 433: OPEN ENDED DESIGN PROBLEM 1 – WEDGES AND ROCK BOLTING

## Grading Rubric

Name: .....

	<b>EXCELLENT</b> (90 – 100%)	<b>GOOD</b> (89 – 72%)	<b>SATISFACTORY</b> (71 – 60%)	<b>NEEDS IMPROVEMENT</b> (≤59%)	<b>PTS.</b>
<b>OVERALL CONTENT</b>	Maximum 60 points				
<b>INTRODUCTION</b>	Very clearly and concisely: ○ Identifies the problem AND ○ States the purpose of the report	Adequately: ○ Identifies the problem AND ○ States the purpose of the report	Vaguely: ○ Identifies the problem OR ○ States the purpose of the report	Inadequately: ○ Identifies the problem AND ○ States the purpose of the report	___/5
<b>PROJECT DESCRIPTION</b>	Clearly describes the project in detail, taking into account the: ○ Site geology AND ○ Other given parameters/restrictions	Describes the project in detail, taking into account the: ○ Site geology OR ○ Other given parameters/restrictions	Describes some details of the project (but misses key aspects) in: ○ Site geology OR ○ Other given parameters/restrictions	Lacks to describe the project in detail	___/5
<b>MODELING AND INPUT PARAMETERS</b>	Clearly identifies all the information needed to run the model: ○ States the software and describes the model used ○ States and briefly <i>justifies</i> the input parameters (rock mass/discontinuity properties) ○ Describes any other assumptions	Identifies the information needed to run the model: ○ States the software and describes the model used ○ States and briefly <i>justifies some</i> input parameters (rock mass/discontinuity properties) ○ Describes any other assumptions	Identifies basic information needed to run the model: ○ States the software and describes the model used ○ <i>Only states</i> the input parameters (rock mass/discontinuity properties) ○ Lacks to describe any other assumptions	Lacks to identify basic information needed to run the model: ○ Does not state the software or describe the model used ○ States a few or no input parameters (rock mass/discontinuity properties) ○ Does not describe any other assumptions	___/10
<b>KINEMATIC ANALYSIS</b>	Effectively considers the main aspects in the analysis, such as: ○ Assessment of all the possible discontinuity combinations ○ Concise description of all the relevant wedge properties (volume, weight, FoS without support) AND ○ Effectively interprets the critical wedges formed	Considers certain points in the analysis, such as: ○ Assessment of some possible discontinuity combinations ○ Concise description of some relevant wedge properties (volume, weight, FoS without support) AND ○ Adequately interprets the critical wedges formed	Considers certain points in the analysis, such as: ○ Assessment of some possible discontinuity combinations ○ Description of one or two wedge properties (volume, weight, FoS without support) AND ○ Vaguely interprets the critical wedges formed	Considers basic points in the analysis, such as: ○ Assessment of one discontinuity combination ○ Description of one wedge property (volume, weight, FoS without support) or no description. AND ○ Does not interpret the critical wedges formed	___/15
<b>ROCK BOLT PATTERN</b>	Incorporates a reasonable support mechanism based on the analysis and effectively justifies design choice: ○ States the bolt properties and justifies all assumptions (if any) ○ Clearly identifies and <i>explains</i> the controlling factor on the bolt properties ○ Describes the bolt pattern design (i.e. spacing) and any other considerations ○ Achieves the design FoS after support	Incorporates a support mechanism based on the analysis and adequately justifies design choice: ○ States the bolt properties and justifies some assumptions (if any) ○ Only identifies the controlling factor on the bolt properties ○ Describes the bolt pattern design (i.e. spacing) and any other considerations ○ Somewhat achieves the design FoS after support	Incorporates a support mechanism based on the analysis but only states/vaguely justifies design choice: ○ States the bolt properties but does not justify the assumptions (if any) ○ Only implies the controlling factor on the bolt properties ○ Describes the bolt pattern design (i.e. spacing) ○ Does not achieve the design FoS after support	Incorporates a support mechanism based on the analysis but does not state/justify design choice: ○ States the bolt properties but does not justify the assumptions (if any) ○ Does not state the controlling factor on the bolt properties ○ Does not state the bolt pattern design (i.e. spacing) ○ Does not achieve the design FoS after support	___/15

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<b>RECOMMENDATION</b>	Clearly gives a final recommendation AND <ul style="list-style-type: none"> <li>○ Acknowledges the limitations of the analysis</li> <li>○ Identifies and accounts for applicable safety codes</li> <li>○ Recommends other factors to consider for future analysis</li> </ul>	Gives a final recommendation BUT misses one of the following: <ul style="list-style-type: none"> <li>○ Acknowledges the limitations of the analysis</li> <li>○ Identifies and accounts for applicable safety codes</li> <li>○ Recommends other factors to consider for future analysis</li> </ul>	Only gives a final recommendation based on results	Does not give or clearly state a final recommendation based on the results	___/10
<b>TECHNICAL COMMUNICATION</b> Maximum 25 points					
<b>ORGANIZATION</b>	<ul style="list-style-type: none"> <li>○ Report is clearly organized in a logical manner</li> <li>○ Report contains headings and subheadings, which contribute to clarity</li> </ul>	<ul style="list-style-type: none"> <li>○ Report is adequately organized in a logical manner</li> <li>○ Report has headings and subheadings</li> </ul>	<ul style="list-style-type: none"> <li>○ Report is organized but contains some weak sections</li> <li>○ Report has headings and subheadings</li> </ul>	<ul style="list-style-type: none"> <li>○ Report is poorly organized</li> <li>○ Report might have headings and subheadings, but do not contribute to clarity</li> </ul>	___/5
<b>MECHANICS</b>	<ul style="list-style-type: none"> <li>○ Well-written. Excellent grammar, spelling, and punctuation</li> <li>○ All numerical values have the appropriate number of significant figures</li> </ul>	<ul style="list-style-type: none"> <li>○ Report is easy to read but may contain a few errors in grammar, spelling, and punctuation</li> <li>○ Most numerical values have the appropriate number of significant figures</li> </ul>	<ul style="list-style-type: none"> <li>○ Report is somewhat difficult to follow due to errors in grammar, spelling, and punctuation</li> <li>○ Some numerical values have the appropriate number of significant figures</li> </ul>	<ul style="list-style-type: none"> <li>○ Report is difficult to follow due to many errors in grammar, spelling, and punctuation</li> <li>○ All numerical values do not have the appropriate number of significant figures</li> </ul>	___/10
<b>FIGURES AND TABLES</b>	All figures/tables selected contribute to meaning of the report. Also: <ul style="list-style-type: none"> <li>○ All tables/figures are legible and well-placed on the page</li> <li>○ All table/figure captions are descriptive</li> <li>○ All tables/figures clearly link to the text</li> </ul>	Figures/tables selected generally contribute to meaning of the report, and misses one of the following: <ul style="list-style-type: none"> <li>○ All tables/figures are legible and well-placed on the page</li> <li>○ All table/figure captions are descriptive</li> <li>○ All tables/figures link to the text</li> </ul>	Figures/tables selected slightly contribute to meaning of the report, and misses two of the following: <ul style="list-style-type: none"> <li>○ All tables/figures are legible and well-placed on the page</li> <li>○ All table/figure captions are descriptive</li> <li>○ All tables/figures link to the text</li> </ul>	Figure/tables selected slightly contribute to meaning of the report and misses the following: <ul style="list-style-type: none"> <li>○ All tables/figures are legible and well-placed on the page</li> <li>○ All table/figure captions are descriptive</li> <li>○ All tables/figures link to the text</li> </ul>	___/5
<b>REFERENCES</b>	<ul style="list-style-type: none"> <li>○ Report includes relevant references using appropriate format</li> <li>○ All references are appropriately cited within the text</li> </ul>	<ul style="list-style-type: none"> <li>○ Report includes some relevant references appropriate format</li> <li>○ Might use appropriate format AND/OR citation within the text</li> </ul>	Includes irrelevant references	Does not include references (0 points)	___/3
<b>REPORT PRESENTATION</b>	Report contains a: <ul style="list-style-type: none"> <li>○ Title page</li> </ul> AND <ul style="list-style-type: none"> <li>○ Page numbers</li> </ul>	Report contains a: <ul style="list-style-type: none"> <li>○ Title page</li> </ul> OR <ul style="list-style-type: none"> <li>○ Page numbers</li> </ul>	Report lacks a (0 points): <ul style="list-style-type: none"> <li>○ Title page</li> </ul> AND <ul style="list-style-type: none"> <li>○ Page numbers</li> </ul>		___/2
<b>LAB 3</b>	In-lab Design Problem Exercise (10 Points)				___/10
<b>TA'S DISCRETION</b>	Maximum of 5 points given for exemplary work and effort				___/5
<b>TOTAL</b>					___/100

Additional Comments: