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or give the completed form back to Ariel Wai
(Duke 381) or Dr. Terry Xu (Duke 256).

The William States Lee College of Engineering

Graduate Student Learning Outcomes

Student Name _____

SLO #1: Students analyze and evaluate advanced topics in engineering.					
Score Written Reports	Criteria	1 Does Not Meet Expectations	2 Meets Expectations	3 Exceeds Expectations	Score Oral Presentations
	<i>Describes the scope and context of the defined problem.</i>	Does not adequately describe the scope and context of the problem; important details are missing.	Adequately describes the scope and context of the problem; sufficient level of detail is provided.	Comprehensively describes the scope and context of the problem; level of detail offers additional breadth, depth, and/or new insights.	
	<i>Demonstrates existing knowledge and emerging research on the topic.</i>	Does not adequately demonstrate knowledge of existing and emerging research on the topic; important details are missing.	Adequately demonstrates knowledge of existing and emerging research on the topic; sufficient level of detail is provided.	Comprehensively describes existing and emerging research on the topic; level of detail offers additional breadth, depth, and/or new insights.	
	<i>Compares and contrasts relevant aspects of the topic.</i>	Does not adequately compare/contrast relevant aspects of the topic; important similarities or distinctions are missing.	Adequately compares/contrasts relevant aspects of the topic; sufficient level of similarities and distinctions are provided.	Comprehensively compares/contrasts relevant aspects of the topic; level of detail in similarities and distinctions offers additional breadth, depth, and/or new insights.	
	<i>Evaluates scope of analytical methods/tools and selects the most appropriate one (s).</i>	Does not adequately evaluate the scope of analytical methods/tools and/or did not select the most appropriate one; some viable options were not considered or the best was not chosen.	Adequately evaluates the scope of analytical methods/tools and selected the most appropriate one; all obvious options were considered and the best was chosen.	Comprehensively evaluates the scope of analytical methods/tools and selected the most appropriate one; new or optional analytical tools were also considered and the best was chosen.	
	<i>Identifies assumptions and constraints relevant to the analytical methods/tools selected.</i>	Does not adequately identify assumptions and constraints relevant to the analytical method selected; important assumptions or constraints are missing.	Adequately identifies assumptions and constraints relevant to the analytical method selected; all obvious assumptions and constraints are identified.	Comprehensively identifies assumptions and constraints relevant to the analytical method selected; assumptions and constraints beyond the obvious offer additional breadth, depth, and/or new insights.	
	<i>Develops an appropriate model for analysis.</i>	Does not adequately develop an appropriate model for analysis; important aspects of the model are missing or extraneous aspects are included.	Adequately develops an appropriate model for analysis; all obvious aspects of the model are included and justified.	Comprehensively develops an appropriate model for analysis; new and relevant aspects of the model offer additional breadth, depth, and/or new insights.	
	<i>Analyzes topic beyond the previous level of coursework (BS or MS).</i>	Does not adequately analyze topic at the MS/PhD level; important aspects of analysis are missing.	Adequately analyzes topic at the MS/PhD level; sufficient level of analysis is provided.	Comprehensively analyzes topic at the MS/PhD level; level of analysis offers additional breadth, depth, and/or new insights.	
	<i>Evaluates topic beyond the previous level of coursework (BS or MS).</i>	Does not adequately evaluate topic at the MS/PhD level; important aspects of evaluation are missing.	Adequately evaluates topic at the MS/PhD level; sufficient level of evaluation is provided.	Comprehensively evaluates topic at the MS/PhD level; level of evaluation offers additional breadth, depth, and/or new insights.	
	<i>Interprets results within the scope and context of the defined problem.</i>	Does not adequately interpret results within the scope and context of the defined problem; interpretation is incomplete or lacks rationale.	Adequately interprets results within the scope and context of the defined problem; interpretation is complete and rational.	Comprehensively interprets results within the scope and context of the defined problem; interpretation is complete, rational, and offers additional breadth, depth, and/or new insights.	

Score Written Reports	Criteria	1 Does Not Meet Expectations		2 Meets Expectations		3 Exceeds Expectations		Score Oral Presentations
	<i>Makes appropriate recommendations and/or identifies next steps.</i>	Does not make recommendations or identify next steps or recommendations and next steps are not justified based on results.		Makes recommendations and identifies next steps that are commensurate with results.		Makes recommendations and identifies next steps beyond the scope of the project but which have other relevance.		
SLO #1 TOTAL SCORE: Written Reports _____ / 30 Performance Target: 20/30				SLO #1 TOTAL SCORE: Oral Presentations _____ / 30 Performance Target: 20/30				
SLO #2: Students communicate technical information.								
Written Communication				Oral Presentations				
Score Written Reports	Criteria	1 Does Not Meet Expectations	2 Meets Expectations	Score Oral Presentations	Criteria	1 Does Not Meet Expectations	2 Meets Expectations	
	<i>Document conforms to format specified by the Graduate School (style, font size and type, margins, spacing, pagination, numbering, and organization).</i>	Does not conform to format specified by the Graduate School.	Conforms to format specified by the Graduate School.		<i>Delivery follows a logical sequence.</i>	Lacks a logical sequence; key aspects of the project are unclear and/or lack a unified rationale.	Follows a logical sequence; key aspects of the project are understood and present a unified rationale.	
	<i>Referencing format conforms to discipline standards.</i>	Does not conform to referencing format of the discipline.	Conforms to referencing format of the discipline.		<i>Delivery is appropriately paced.</i>	Does not engage audience; pace too fast or too slow.	Engages the audience at an appropriate pace.	
	<i>Quality of content, organization, and coherence of writing is at a level expected of professional publications.</i>	Is not at a level expected of professional publications; needs extensive revision.	Is at a level expected of professional publications with minor or no revision.		<i>Delivery presents a convincing argument.</i>	Does not offer a convincing case; lacks substance and rationale based on scientific method.	Offers a convincing case; substantive and rational based on identified method.	
SLO #2 TOTAL SCORE: Written Reports _____ / 6 Performance Target: 6/6				SLO #2 TOTAL SCORE: Oral Presentations _____ / 6 Performance Target: 6/6				
TOTAL SCORE: Written Reports _____ / 36 Performance Target: 26/36 (72%)				TOTAL SCORE: Oral Presentations _____ / 36 Performance Target: 26/36 (72%)				
COMMENTS (required for total score < 26/36 or for any criterion with a score of 1):				COMMENTS (required for total score < 26/36 or for any criterion with a score of 1):				
SLO #3 (for Ph.D. Students Only): Students discover and create new knowledge.								
Effectiveness Measure: _____ # of accepted publications upon graduation.								
Performance Target: 90% of students have at least one accepted publication upon graduation.								