

The appropriate rubric MUST be printed and submitted with the matching submission. If the rubric is missing, marks will be deducted.

Team Presentation: Initial Mechanical Design – Takes place Tuesday, Nov. 3 (8-Stream) and Thursday, Nov. 5 (4-Stream) (Graded for MTE 100)

If your group requires additional hardware that is not part of the base NXT kit, have this list ready to present to your TA(s), including justification. Extra equipment will be granted based on greatest need.

Team Presentation Rubric	
Task List (1 marks): <ul style="list-style-type: none">Contains 5+ items, listed sequentially in order of execution	/ 1
Constraints (2 marks): <ul style="list-style-type: none">Accurately describes what the robot “must” do given the problem definitionContains 4+ plausible things that the robot must do to satisfy the problem definition	/ 2
Criteria (2 Marks): <ul style="list-style-type: none">Contains 2-4 plausible things that it “would be nice” if the robot could doCriteria list fits with design problem definition	/ 2
Mark:	/ 5

Design Problem Definition – Due Friday, Nov. 6 at 8:20am, Submitted to the boxes outside WEEF (Graded for MTE100)

Design Problem Definition Rubric (Group Submission)	
Title of project is descriptive <ul style="list-style-type: none"> Not just “GENE121/MTE 100 Final Project” or similar 	
Description of design problem is clear: <ul style="list-style-type: none"> A classmate should not require prior knowledge of project topic to understand There are no terms/acronyms used that are not defined 	
Description of design problem is concise: <ul style="list-style-type: none"> Between 1 and 2 paragraphs No unnecessary information present “Doesn’t tell a story” 	
Does not discuss the solution to the problem, only the problem itself	
No personal pronouns	
Mark:	/ 5

Freehand Sketch Rubric (Individual Submission)	
Clear depiction of mechatronic system <ul style="list-style-type: none"> Use appropriate and concise labelling Include enough detail to explain the system pictorially Follows general graphics freehand guidelines 	
Quality and effort	
Mark:	/ 5

Design Report – Due Monday, Nov. 16 at 8:20am, submitted to the boxes outside WEEF (Graded for MTE 100)

Design Report Rubric	
Introduction and Background (1 marks)	/ 1
Design Problem Definition (2 marks)	/ 2
Goals and Objectives (1 marks)	/ 1
Constraints (4 marks): <ul style="list-style-type: none"> • Accurately describes what the robot “must” do given the problem definition • Contains 4+ plausible things that the robot must do to satisfy the problem definition 	/ 4
Criteria (4 Marks): <ul style="list-style-type: none"> • Contains 2-4 plausible things that it “would be nice” if the robot could do • Criteria list fits with design problem definition 	/ 4
Mechanical Design & Evaluation (10 marks): <ul style="list-style-type: none"> • Several mechanical design alternatives presented • Mechanical designs evaluated against criteria and constraints • Decision matrix used to justify your selection (See Dr. Melek’s Design Process II lecture, slides 18-35) 	/ 10
Task List (5 marks): <ul style="list-style-type: none"> • Matches problem definition and given constraints • Contains 5+ items, listed sequentially in order of execution 	/ 5
Project Plan (10 marks) <ul style="list-style-type: none"> • Gantt chart or critical path method present 	/ 10
References (3 marks)	/ 3
Communication (10 marks): <ul style="list-style-type: none"> • Correct grammar, spelling • Clear and professionally written • Written in paragraph form • No Personal Pronouns • Body of report between 2 and 5 pages, including diagrams • Figures and Tables labelled/captioned correctly, meaningfully 	/ 10
Mark:	/ 50

Team Presentation: Software Design and Physical Mock-up – Takes place Monday, Nov. 16 (8-Stream) and Tuesday, Nov. 17 (4-Stream) (Graded for GENE 121)

Team Presentation Rubric	
Software Design (3 marks): <ul style="list-style-type: none"> • Attains minimum number of non-trivial functions (6, not including main()) • One function must return something • One function must have parameters • Functions must be <u>well-chosen and well-named</u> • Program testing procedure outlined (how are you going to test all these functions? Whole program?) • Who is responsible for writing each function? 	/ 3
Mechanical System/Mock-up (1 mark):	/ 1
Flow Chart (1 marks): <ul style="list-style-type: none"> • Matches with Software Design • Matches with Task List (<u>Bring to presentation</u>) • Fits on one page • Is legible, understandable 	/ 1
Mark:	/ 5

Final Report – Due Friday, Dec. 4 at 8:20am – Submitted to the boxes outside WEEF

The most innovative aspect, difficult aspect, and memorable aspect of our project is:
Innovative:
Difficult:
Memorable:

Final Project Rubric – MTE 100	
Introduction Section <ul style="list-style-type: none"> • Summary (1 marks) • Design Problem Definition (2 marks) • Goals and Objectives (2 marks) • Constraints and Criteria (3 marks) <ul style="list-style-type: none"> ○ Changes from initial report(s) noted, explained 	/ 8
Mechanical Design: <ul style="list-style-type: none"> • Explanation of design(s) and implementation • Design tradeoffs/what didn't work • Includes clear diagrams and/or photos • Sturdy and durable – appropriate use of parts 	/ 12
Project Management: <ul style="list-style-type: none"> • Project Timeline (2 marks) • Explanation of who did what (1 mark) 	/ 3
Conclusions/Recommendations: <ul style="list-style-type: none"> • Conclusion (2 marks) • Recommendations (5 marks) 	/ 7
Communication: <ul style="list-style-type: none"> • Written in paragraph form • Proper spelling and grammar • No awkward wording, rambling text, too wordy • No Personal Pronouns • Acronyms defined appropriately 	/ 8
Appropriate IEEE-style references	/ 2
Format: <ul style="list-style-type: none"> • Page Limit: 12 pages excluding diagrams and code • Appropriate table/figure headings • Correct section headings • Preliminary pages follow prescribed format • Formatting instructions followed 	/ 10
MTE100 Final Report Mark:	/ 50

Software Design Rubric	
Software Design Section (5 marks): <ul style="list-style-type: none"> • 1-2 pages • Attains minimum number of non-trivial functions (4, if 3 person group, 6 if 4 person group, not including main()) • One function must return something • One function must have parameters • Functions must be <u>well-chosen and well-named</u> • Program testing procedure outlined 	/ 4
Software Recommendations (1 Mark)	/ 1
Flow Chart (2 marks): <ul style="list-style-type: none"> • Matches with Software Design description • Matches with Task List • Fits on one page • Is legible, understandable 	/ 2
Mark:	/ 7

Final Project Rubric – GENE 121					
Code (in Appendix)	Use of at least 3 motors				
	Use of 4 sensors				
	Use of Timers				
	6 Non-trivial functions with appropriate parameter passing including one which returns a value and one which has a parameter				
	Format: <ul style="list-style-type: none">• Consolas font• Single Spaced with proper indentation and <u>no word wrap</u>				
	Deductions for: <ul style="list-style-type: none">• Hard to follow code• Inappropriate commenting (not enough, too many, or too long)• Glaring inefficiencies in code• Bad Code (global variables, infinite loops, etc)				
Software Code Mark:			/ 10		
Project Demo Mark:			/ 8		
Appropriate Code Complexity:			-2 -1 0 +1 +2 (marker will circle one)		

Software Design Mark:			/ 7		

GENE121 Final Report Mark:			/ 25		