HCMC UNIVERSITY OF TECHNOLOGY
Faculty of Transportation Engineering
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SOCIALIST REPUBLIC OF VIETNAM
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MIDTERM REPORT OF THESIS/CAPSTONE PROJECT
SEMESTER __222__

1. Thesis title: Analyse the changes of steering feel in various speed in Toyota VIOS.

2. Advisor's fullname: PhD. Ngô Đắc Việt

PhD. Trần Đăng Long

3. Student's fullname: Trịnh Tiến Long **- ID:** 1852047

4. Thesis content:

4.1. Type: ☐ A product design ☐ A technical evaluation
☒ A scientific research ☐ Other:

4.2. Objectives & Technical requirements:

_ Analysis of the complete system dynamics of EPS, and implementation of the EPS simulation model on Matlab/Simulink, with simulation results analysis using Simscape Multibody.

4.3. Core problems to be solved & Solving ideas/methods:

_Build EPS model on Simscape to determine the torque acting on steering wheel with certain steering angle

4.4. Works to be done & Required results:

No.	Works to be done	**Required results** *(Ex: data, equations, models, diagrams, parameters, charts, findings…)*
1	Dynamic formula for EPS system	Equation
2	Solidwork model for simscape simulation	Model

4.5. Requested products:

☒ Technical report ☒ Poster ☐ Scientific paper

☐ Software ☐ Firmware ☒ Numerical model

☐ General layout drawings ☐ Detailed drawing ☒ Assembly drawings

☐ Others:

4.6. Scope of Thesis:

_Components that are not related to the EPS system are ignored.

4.7. Tasks of each team member:

No.	Member's full name	Works assigned
1	Trịnh Tiến Long	Summary the dynamic equation, simulate using simscape multibody

5. Achievements by midterm:

No.	Works done	Required results	Actual results	Degree of completion (0-100%)
1	Dynamic equation for EPS	Equation	Equation	100%
2	Solidwork model	Full model	Part of model	50%

6. Current technical errors (if any) & Proposed solutions:

No.	Works done	Current errors	Causes	Solutions to overcome
1	Solidwork model	Wrong kinematic movement	Wrong parameter for model	Re-draw with VIOS parameter

7. Threats and causes lead to completion delay (if any) & Proposed solutions:

No.	Works & Corresponding threats	Causes	Degree of risk of completion delay *(Low/Medium/High)*	Solutions to overcome
1				

No.	Works & Corresponding threats	Causes	Degree of risk of completion delay *(Low/Medium/High)*	Solutions to overcome

8. Updated working plan for 15+1 weeks: *(including the degree of completion of each task, and additional works to finish the Thesis/Project on time (if any))*

No.	Works	Week														
		1	2	3	4	5	6	7	8	9	X	11	12	13	14	15	16
1	**Introduction of project**	x															
2	**Summarize theory**		x	x													
3	**Choose plan and prepare technical paper for reference**				x	x	x										
4	**Summarize dynamic equation, get VIOS steering system parameter**							x	x				x				
5	**Draw solidwork model**								x	x		x	x				
6	**Build EPS model on MATLAB**													x	x	x	
7	Make poster												x				x
8	Make presentation slides																x
9	Write full report																x

Student: Trịnh Tiến Long **-ID:**1852047 **- Signature:**Long

Date (dd/mm/yyyy):

ADVISOR