

TEACHING PLAN
ENG1003 FRESHMAN SEMINAR FOR ENGINEERING - FRESHMAN PROJECT

DESIGN OF PATH PLANNING ALGORITHM FOR AIRCRAFT OPERATION
(ONLINE TEACHING)

Instructors:

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Sem. Week	Topics Taught	Planned Learning Outcomes	Assessment	Timetable, Venue Staff
Wk 3 (Sep 25)	<ul style="list-style-type: none"> Introduction to the importance of path planning in aviation and aerospace industries. Instruction on the installation of <i>Python</i> and the <i>Visual Studio Code</i> (a popular compiler of <i>Python</i> in Windows 10) Instruction on the installation of <i>GitHub Bash</i> and the collaborative function in online platform GitHub website. 	<ul style="list-style-type: none"> Understand the principle and applications of path-planning Global outlook Basic code programming Project management Work collaboration 		LEC/TUT: Friday 15:30-18:20, MS Team Li-Ta HSU Weisong WEN
Wk 4	Public Holiday			
Wk 5 (Oct 9)	<ul style="list-style-type: none"> Introduction to A* path planning algorithm. Introduction to the open-source code, Python Robotics, with path planning capability. Project management and collaboration 	<ul style="list-style-type: none"> Project management Hands-on coding experience Work collaboration Problem-solving skills Learning to learn skills 		LEC/TUT: Friday 15:30-18:20, MS Team Li-Ta HSU Weisong WEN

	<ul style="list-style-type: none"> Discussing the use of \$200 HKD budget to design and develop the path planning algorithm 			
Wk 6 (Oct 16)	<ul style="list-style-type: none"> Design the path planning algorithm considering different factors, distance, safety and economic cost. Idea on how to determine the factors in each location. (to extend the relationship of the study path in AE programme) 	<ul style="list-style-type: none"> Hands-on coding experience Work collaboration Problem-solving skills Learning to learn skills Creativity in engineering solution 	Log sheet	LEC/TUT: Friday 15:30-18:20, MS Team Li-Ta HSU Weisong WEN
Wk 7 (Oct 23)	<ul style="list-style-type: none"> Each group must finish their path planning algorithm before the end of next week. Introduction on the preparation of the manual of the code designed and developed by students 	<ul style="list-style-type: none"> Hands-on coding experience Work collaboration Problem-solving skills Learning to learn skills Creativity in engineering solution 		LEC/TUT: Friday 15:30-18:20, MS Team Li-Ta HSU
Wk 8 (Oct 30)	<ul style="list-style-type: none"> Presentation on the designed (15 minutes for each group) – You can also design even harder route. Discussion and outlook of the path planning for aviation and aerospace industries. 	<ul style="list-style-type: none"> Project management Problem-solving skills Technical Report and presentation (every student must present) Global Outlook 	<ul style="list-style-type: none"> Presentation Report includes code manual and reflective essay Confidential peer evaluation 	LEC/TUT: Friday 15:30-18:20, MS Team Li-Ta HSU