

**Supervisor:** Dr Hermawan Nugroho  
**Moderator:** Prof T. Nandha Kumar  
**Project Code:** HN-BEng-23-01

**Legends:** Error Bars for Uncertainty:  Moderator Meeting Week:   
Submission Dateline:  Project Milestone: 

Tasks	Autumn Semester														Study Week				Exam		Sem Break		CNY Break			Spring Semester					HR Break				Study Week	
	Sept		Oct			Nov			Dec		Jan		Feb		Mar			Apr				May														
	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	WEEK 15	WEEK 16	WEEK 17	WEEK 18	WEEK 19	WEEK 20	WEEK 21	WEEK 22	WEEK 23	WEEK 24	WEEK 25	WEEK 26	WEEK 27	WEEK 28	WEEK 29	WEEK 30	WEEK 31	WEEK 32	WEEK 33	WEEK 34	WEEK 35	WEEK 36	WEEK 37		
<b>Project Planning</b>																																				
Hazard Identification, Risk Assessment, Risk Control Form (HIRARC) Form	*																																			
FYP Briefing and Discussion on Project Specification	*																																			
Hardware Inspection and Sensor Component Research	*																																			
Software, Tools and Application Research																																				
Finalising Project Objectives and Project Specification				*																																
Hardware and Software Research and Purchase Cost Estimation	*																																			
Purchase Requisition					*																															
Lab Space Booking					*																															
Obtaining Ethical Approval					*																															
Writing Project Outline and Planning Report			*																																	
Submission of Project Outline and Planning Report				*																																
<b>Research and Literature Review</b>																																				
Researching of Common Application of Edge Computing	*																																			
Literature Review of Emotion Recognition using ECG						*																														
Literature Review of Common Heart Disease					*																															
Literature Review of Heart Disease Detection using Machine Learning and Deep Learning					*																															
Literature Review of Heart Disease Prediction Model					*																															
Literature Review of STM32MP157F DK Edge Computing Device and Application					*																															
Literature Review of Software Tools, Model and Architecture for Edge Computing					*																															
<b>Design Solution/Application</b>																																				
Research and Learning the Function of STM32MP157F DK Edge Computer				*																																
Installing Virtual Machine to Set Up STM32 Software to Flash OS into the Edge Computer						*																														
Installing STM32 Cube Programmer in Ubuntu OS						*																														
Coding Program to Test Functions of Edge Computer						*																														
Integrating Heart Monitoring Sensor onto the Edge Computer						*																														
Coding Program to Test Sensors and Perform Experiments to Ensure Accurate Measurements of Sensors						*																														
Designing Wearables of that can be Integrated with Heart Disease Detection and Prediction Solution (Optional)						*																														
<b>Development of AI Model</b>																																				
Setting Up Environment to Deploy Heart Disease Detection and Prediction Model											*																									
Coding Program to Develop Emotion Recognition Model											*																									
Coding Program to Develop Heart Disease Prediction Model											*																									
Coding Program to Connect Sensor with AI Model											*																									
Coding Program to Display Prediction Output on the LCD Display (Optional)											*																									
Developing User Interface to Monitor Heart Disease and Data Collected from Sensor (Optional)											*																									
Debugging Code to Solve Bugs Found, Improvement of Code/Model											*																									
<b>Deployment of Model and Sensor into Edge and Cloud Computer</b>																																				
Combining both Software and Hardware Developed into Wearables (Optional)																																				
Integrating Intel OpenVINO Model Optimizer and Hardware Accelerator																																				
Deploying Heart Disease Prediction Model Developed onto Cloud Computer																																				
Deploying Emotion Recognition Model Developed onto Edge Computer																																				
Performing Testing on Real Live User																																				
Obtaining User Experience, Feedback and Model Prediction Result																																				
Performance Improvement and Solving Bugs																																				
<b>Thesis, Documents and Presentation</b>																																				
Writing Sections of Draft Thesis																																				
Draft Typed Thesis Submission																																				
Writing Sections of Final Thesis																																				
Final Thesis, Logbook, Code and Miscellaneous Submission																																				
Preparation of Presentation																																				
Presentation																																				
Return of Project Items																																				

