

Module code	SS-4313	
Module Title	Machine Perception	
Degree/Diploma	Bachelor of Science (Computer Science)	
Type of Module	Major Option	
Modular Credits	4	Total student Workload 10 hours/week
		Contact hours 4 hours/week
Prerequisite	SS-2202 Algorithms and Data Structures SS-2207 Introduction to Artificial Intelligence and Soft Computing	
Anti-requisite	None	
Aims		
<p>This module covers the principles, approaches and techniques of machine perception, encompassing the different sensing mechanisms including motion capture.</p> <p>This module is a compulsory module for Soft Computing stream.</p>		
Learning Outcomes		
<i>On successful completion of this module, a student will be expected to be able to:</i>		
Lower order :	20%	<ul style="list-style-type: none"> - understand machine perception using sensors and vision - discuss different sensing mechanisms, vision/ motion capture/ tracking systems used - understand data acquiring and pre-processing using sensors and motion capture/tracking system - understand 3-dimensional multi-model sensing mechanisms
Middle order :	60%	<ul style="list-style-type: none"> - evaluate and appreciate the performance of machine perception using sensors and vision
Higher order:	20%	<ul style="list-style-type: none"> - design simple bio-interfacing devices in laboratory environment - apply machine perception real world applications
Module Contents		
<ul style="list-style-type: none"> - Introduction to Machine Perception and its applications; Wired and wireless Sensor integration for perception - Motion capture/tracking systems integration for perception; Wearable sensing mechanisms; Sensor/vision data acquisition and pre-processing - 3-dimensional modelling for perception; Bio-Interfacing Devices using sensors and vision; Information fusion using sensors and vision; Real world applications: machine and human perception 		
Assessment	Formative assessment	Interactive Quizzes and Feedback
	Summative assessment	Examination: 50% Coursework: 50% <ul style="list-style-type: none"> - 2 class tests (20%) - 1 written assignment (15%) - 1 laboratory exercise (15%)