

Industrial Statistics (MSM4213)

<b>Course Code</b>	MSM4213								
<b>Course Name</b>	Industrial Statistics								
<b>Credit Hour</b>	3								
<b>Prerequisite Course</b>	None								
<b>Contact Hours</b>	Lecture:	2	units	(2 hour(s) per week)					
	Tutorial:	0	unit	(0 hour(s) per week)					
	Laboratory:	2	units	(2 hour(s) per week)					
<b>Rationale for the Inclusion</b>	This course is primarily focused on the applications of various statistical techniques and measurement system analysis that are applicable to industries. The students will be able to apply the statistical knowledge in solving problems in industries or real life.								
<b>Course Objective</b>	To equip students with the statistical techniques and measurement system analysis in solving problems in industries or real life using statistical softwares such as Microsoft Excel and R Language.								
<b>Course Synopsis</b>	The course will focus primarily on statistical techniques and measurement system analysis. The statistical techniques include descriptive and graphical summaries, statistical inferences for one and two populations, regression analysis, and ANOVA. The measurement system analysis discusses five elements which are stability, bias, linearity, repeatability and reproducibility in assessing measurement quality. In measurement system analysis, it integrates the statistical techniques in interpreting the data from various fields of industry and real life. Appropriate software such as Microsoft Excel and R Language will be used in this course to implement these techniques in practice.								
<b>Program Outcomes</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
	/	/	/		/		/		
<b>Soft Skills</b>	<b>Code</b>		<b>CTPS</b>	<b>CS</b>	<b>TS</b>	<b>LL</b>	<b>ES</b>	<b>EM</b>	<b>LS</b>
	<b>KIM</b>		5		4		1		
<b>Course Outcomes</b>	By the end of semester, students should be able to:								
	<b>CO1</b>	Recommend a conclusion or suggestion based on the statistical techniques and measurement system analysis used in various applications.							
	<b>CO2</b>	Manipulate statistical techniques and measurement system analysis in solving various applications using appropriate statistical software.							
	<b>CO3</b>	Organise real life data to solve related problems in various fields using appropriate statistical techniques and measurement system analysis.							
	<b>CO4</b>	Display the ability to work collaboratively as part of a team to solve given problem.							
	<b>CO5</b>	Display entrepreneur skills in assigned task.							

<b>Assessment Methods</b>	<b>Methods</b>	<b>Weighting</b>	<b>CO1</b>	<b>CO2</b>	<b>CO3</b>	<b>CO4</b>	<b>CO5</b>
	Assignment/Project	35%		/	/	/	/
	Test	25%	/		/		
	Final Exam	40%	/		/		
	<b>Total</b>	<b>100%</b>					
<b>Learning References</b>	1	Automotive Industry Action Group (AIAG), Measurement System Analysis, 4th Edition, AIAG, 2010 (Latest version-Main Reference)					
	2	Montgomery D. C and Runger G. C, Applied Statistics and Probability for Engineers, 6th edition, Wiley, 2015					
	3	Navidi W., Statistics for Engineers and Scientists, 3rd edition, McGraw-Hill, 2011 (latest version)					
	4	Gerald J.H. and Necip D., The Role of Statistics in Business and Industry, Wiley, 2008 (latest version)					
	5	Automotive Industry Action Group (AIAG), Statistical Process Control, 2nd Edition, AIAG, 2005 (latest version)					