SO6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

PI#	Performance Indicators [Weight]	Unsatisfactory	Developing	Satisfactory	Outstanding	Score
		1 Point	2 Points	3 Points	4 points	Max.
			Independently and/or	Independently and/or	Independently and/or as	
		Inability; 1- to identify	as a part of a team;	as a part of a team;	a part of a team;	
		experimental	1- to identify	1- to identify	1- to identify	
		objective (problem	experimental objective	experimental objective	experimental objective	
		statement); 2- to	(problem statement);	(problem statement);	(problem statement); 2-	
		describe the	2- to describe the	2- to describe the	to describe the	
PI1	Develop Experiment [20%]	experimental process	experimental process	experimental process	experimental process	4
		and methods; 3- to	and methods; 3- to	and methods; 3- to	and methods; 3- to	
		specify procedures,	specify procedures,	specify procedures,	specify procedures,	
		equipment, tools and	equipment, tools and	equipment, tools and	equipment, tools and	
		materials (0-24%	materials;	materials;	materials;	
		achievement)	with major errors (25-	with moderate errors	with minor/no errors	
			49% achievement)	(50-74% achievement)	(75-100% achievement)	
			Independently and/or	Independently and/or	Independently and/or as	
		Inability; 1- to follow	as a part of a team 1-	as a part of a team; 1-	a part of a team 1- to	
	Conduct Experiment [20%]	the procedure; 2- to	to follow the	to follow the	follow the procedure; 2-	
PI2		set-up the	procedure; 2- to set-up	procedure; 2- to set-up	to set-up the	
		experiment; 3- to	the experiment; 3- to	the experiment; 3- to	experiment; 3- to	
		systematically and	systematically and	systematically and	systematically and	4
		accurately collect data	accurately collect data	accurately collect date	accurately collect date	
		while conducting the	while conducting the	while conducting the	while conducting the	
		experiment (0-24%	experiment; with	experiment; with	experiment; with	
		achievement)	major errors (25-49%	moderate errors (50-	minor/no errors (75-	
			achievement)	74% achievement)	100% achievement)	

PI#	Performance Indicators [Weight]	Unsatisfactory	Developing	Satisfactory	Outstanding	Score
		1 Point	2 Points	3 Points	4 points	Max.
PI3	Analyze Data [20%]	Inability; 1- to report raw data properly, 2- to calculate measurement errors systematically, 3-to process raw data by incorporating errors analysis, 4- to illustrate processed data** relevant to the	Independently and/or as a part of a team; 1-to report raw data properly, 2- to calculate measurement errors systematically, 3-to process raw data by incorporating errors analysis, 4- to illustrate processed data** relevant to the questions given in the problem statement using appropriate tools (tables, figures, etc.); with minor errors (25-49% achievement)	Independently and/or as a part of a team; 1-to report raw data properly, 2- to calculate measurement errors systematically, 3-to process raw data by incorporating errors analysis, 4- to illustrate processed data** relevant to the questions given in the problem statement using appropriate tools (tables, figures, etc.); with moderate errors (50-74% achievement)	Independently and/or as a part of a team, 1- to report raw data properly, 2- to calculate measurement errors systematically, 3-to process raw data by incorporating errors analysis, 4- to illustrate processed data** relevant to the questions given in the problem statement using appropriate tools (tables, figures, etc.); with minor/no errors (75-100% achievement)	4
PI4	Interpret Data [20%]	Inability; 1-to evaluate data, 2- to discuss data in reference to previous works/related literature (0-24% achievement)	Independently and/or as a part of a team; 1- to evaluate data, 2- to discuss data in reference to previous works/related literature; with an ordinary perspective (25-49% achievement)	Independently and/or as a part of a team; 1- to evaluate data, 2- to discuss data in reference to previous works/related literature; with a scientific perspective (50-74% achievement)	Independently and/or as a part of a team; 1-to evaluate data, 2- to discuss data in reference to previous works/related literature; with a scientific and creative perspective (75-100% achievement)	4

PI#	Performance Indicators [Weight]	Unsatisfactory	Developing	Satisfactory	Outstanding	Score
		1 Point	2 Points	3 Points	4 points	Max.
PI5	Use engineering judgement* to draw conclusions [20%]	Inability; 1-to describe the key finding(s), 2-to identify implications (effects and/or possible consequences), 3- to compose a "(1-sentence) take-home message/concluding remark" from the experimental work using engineering judgement* (0-24% achievement)	Independently and/or as a part of a team; 1-to describe the key finding(s), 2-to identify implications (effects and/or possible consequences), 3-to compose a "(1-sentence) take-home message/concluding remark" from the experimental work using engineering judgement* with an ordinary perspective (25-49% achievement)	Independently and/or as a part of a team; 1-to describe the key finding(s), 2- to identify implications (effects and/or possible consequences), 3- to compose a "(1-sentence) take-home message/concluding remark" from the experimental work using engineering judgement* with a scientific perspective (50-74% achievement)	Independently and/or as a part of a team; 1-to describe the key finding(s), 2- to identify implications (effects and/or possible consequences), 3- to compose a "(1-sentence) take-home message/concluding remark" from the experimental work using engineering judgement* with a scientific and creative perspective (75-100% achievement)	4
Overall Performance		Unsatisfactory	Developing	Satisfactory	Outstanding	TOTAL
POINTS REQUIRED		0-5	6-10	11-15	16-20	20
		0-24%	25-49%	50-74%	75-100%	100%