ANNUAL PROGRAMME ASSESSMENT REPORT (APAR) B(O)-QRiM-APAR.21

MAKLUMAT PINDAAN

Pindaan	Tarikh	Butiran	Disediakan	Diluluskan
0	01.01.2021	Keluaran Pertama		
1				
2				
3				
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10				

IMPORTANT: If the programme has more than one active curricula running simultaneously, please provide separate PAR.

1. PROGRAMME INFORMATION	
Faculty:	Engineering
Programme Name:	Bachelor of Engineering (Mechanical-Aeronautics)
Programme Cluster: (Please ✔ one)	**UG Eng** ✓ **UG SS &ST** **PG (Course work)** **PG (R)**
Programme Code:	SKMF
NEC :	522 (MOTOR VEHICLES, SHIPS AND AIRCRAFT)
Programme Owner (State the name & position):	Prof. Ir. Dr. Pakharuddin Bin Mohd Samin
Session:	20202021
The first Intake for this curriculum (Semester/Session):	1/20112012
Accrediting Body (If any)	The Engineering Accreditation Council Board of Engineers Malaysia
Year/Date of Last Programme Review:	2018
Year/Date of Next Programme Review:	2023

2. Programme Learning Outcomes (PLO)

(Please list the Programme Outcomes and assessment tool used)

PLO/GA	Statement of PLO
PLO1-KW	Acquire and apply fundamental knowledge of mathematics, science and engineering principles to solve complex mechanical and aeronautics engineering problems; Keywords: **Engineering knowledge**
PLO2-THPA	Ability to identify, formulate and analyse complex mechanical and aeronautics engineering problems; Keywords: Problem analysis
PLO3-THDS	Ability to design solutions for complex mechanical and aeronautics engineering problems that fulfil health, safety, societal, cultural and environmental needs; Keywords: **Design/ development of solutions**
PLO4-THI	Ability to investigate complex mechanical and aeronautics engineering problems using research-based knowledge and methods to produce conclusive results; Keywords: **Investigation**
PLO5-SCMT	Ability to use modern engineering and information technology (IT) tools in complex mechanical and aeronautics engineering activities, with an understanding of the limitations; Keywords: **Modern tool usage**
PLO6-GCAD	Ability to apply complex professional mechanical and aeronautics engineering problems and practice related to societal, health, safety, legal and cultural issues with full responsibility and integrity; Keywords: **The Engineer and Society**
PLO7-GCS	Ability to identify the impact of complex mechanical and aeronautics engineering problems and solutions on sustainability and demonstrate the needs for sustainable development in societal and environmental contexts; Keywords: **Environmental and sustainability**
PLO8-GCE	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice; Keywords: **Ethics**
PLO9-CS	Ability to communicate effectively on complex mechanical and aeronautics engineering activities both orally and in writing; Keywords: **Communication**
PLO10-TW	Ability to work productively as an individual, and as a member or leader in a team that may involve multi-disciplinary settings; Keywords: **Team Working**
PLO11-SC	Ability to undertake lifelong learning and manage information including conducting literature study; Keywords: **Life Long learning**

PLO12-ES	Ability to demonstrate and apply knowledge on finance and management principles and acquire entrepreneurship skill; Keywords: **Project management, finance and entrepreneurship**

*GA- Graduate Attribute

3. State the changes made to the programme (if any)			
FINDINGS FROM THE PREVIOUS SESSION (Please describe the PLO achievement issues)			
Issues on PLO/GA achievement (Indicate the associated PLO/GA)	**Specific action taken**	**Used Resources** (Financial or others)	**Impact based on action taken** (Please provide evidence)
Targeted PO: PO1 (SKMA3333 and SKMA4143) - Lack of self-study examples and exercises.	The lecturer uploaded tutorial videos in YouTube.	-	This cohort performed better than pervious cohort 20192020 (from 22% to 34% for SKMA3333 and 34% to 66.67% for SKMA4143).

4. Provide achievements of the PLO for each cohort for the current session (Direct assessment only)
Please refer to Attachment 1

Note:

- Part-time programmes must be reported too.
- Only one assessment is required for each Master and PhD research programme.

5. Comparison of PLO Achievement to the Previous Session
(Graduated Student Achievements Only)

SESSION	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
2020/2021	66.67	100	93.2	63	100	100	79.41	100	100	100	83.33	96.6
2019/2020	58.10	58.0	93.1	58.1	83.9	86.83	63.85	75.7	86.75	61.15	100	96.4
2018/2019	74.07	90.48	97.78	100	80.0	97.67	72.50	97.37	100	97.67	82.4	100
2017/2018	100	70.6	95.7	85.7	95.2	100	85.7	100	100	100	93.8	100

6. State the Indirect measurement findings for the Programme

Exit Survey:

SESSION	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
2017/2018 (Graduated Cohort)	97	97	93	97	97	93	97	100	93	97	100	97

Referring to: Question C : Ability upon Graduation

Responses to all 12 PLOs gave values of more than 90%, indicating that the target KPI were achieved.

External Examiner Report:

1. **Recommendations/Corrective action :**

   There are in total 17 suggestions for improvements as stated in the appropriate section above.

Overall and other comments on the Quality and Output of the Bachelor Degree Programme being assessed:

In summary, the Bachelor of Engineering (Mechanical-Aeronautics) programme is of quality equivalent to other similar programme offered by renowned universities.

See for the complete report https://drive.google.com/drive/folders/1vk7cr2QSgqt1tj4fJz1KtPz75ISAZKQV?usp=sharing

Industrial Advisory Panel (IAP):

1. Have to keep the core courses as there are but need to embed more real industrial problems for assignment, work projects and case examples
2. SKM shall engage anthropology and humanities department to enhance the method in stimulating the students problem solving capabilities.
3. To be 'in' industry, lecturer should strengthen their relationship with industry through long-term engagement and in-kind project participation
4. Use reverse engineering approach to understand the aircraft design concept and solve real/related industrial problems
5. Enhance students coding skills through the given case study/project

See for the complete report https://people.utm.my/mnazri/files/2020/09/Minutes-of-meeting-IAP.docx

Related Audits:

7. FINDINGS ON THE CURRENT SESSION

(Do consider analysis of findings from direct and indirect assessments. Please describe the PLO achievement issues, action plan to be taken, time line and person in-charge at course or/and programme level)

Issues on PLO/GA achievement	**Action Plan****	**Implications on Resources** (Financial or others)	**Implementation Time Line**	**Person in-charge**
The students have difficulty learning using the online method. Propose face to face method. Both 20% for PO1 and PO2 for course Aircraft Structure 1 (SKMA3132) Session 2020/2021 semester 2.	Students will be briefed by the course owner on how to execute online T&L during the first week of the semester effectively.	-	Next semester	Programme owner
For online teaching mode, need to teach students on how and where to search right information via internet and method to solve (problem/assignment/project) with combination of lecture notes and textbooks. The achievement was 51% for PO1 for Flight mechanics (SEMT3212) Session 2019/20 Semeter 1	Students will be briefed by the course owner on how to execute online T&L during the first week of the semester effectively.	-	Next semester	Programme owner

Note:

**See possible programme change action plan in Attachment 1

Report Task	**PIC**	**Signature**	**Date**
Prepared by	**Director**		

	Prof. Ir. Dr. Pakharuddin Bin Mohd Samin		
Verified by	**Deputy Dean (Academic) or Assoc. Chair Academic** Prof. Dr. Izman Bin Sudin		

Attachment 1

(Please provide result for all cohorts)

COHORT 2017/2018 (No of credits to graduate :139)

Cohort : 2017/2018 (Year 1)

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
Course	SKMM 1203	SKMM 1113			SKMM 1503	SKMM 1922		SKMM 1922	SKMM 1512	SKMM 1912		
Score	66.67	24.44			100	100		100	16.7	100		
KPI*	50% Students Achieved 65% Marks											
Achievement (YES or NO)	YES	NO			YES	YES		YES	NO	YES		

Cohort : 2018/2019 (Year 2)

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
Course	SKMM 2313	SKMM 2433					SKMM 2713				SKMM 2613	
Score	36.36	100					79.414				83.33	
KPI*	50% Students Achieved 65% Marks											
Achievement (YES or NO)	NO	YES					YES				YES	

Cohort : 2019/2020 (Year 3)

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
Course	SKMT 3212	SKMT 3333	SKMM 3033			SKMM 3915		SKMM 3915	SKMM 3915			SKMT 3812
Score	53.3	93.3	93.2			100		100	100			96.6
KPI*	50% Students Achieved 65% Marks											
Achievement (YES or NO)	YES	YES	YES			YES		YES	YES			YES

Cohort : 2020/2021 (Year 4)

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
Course	SKMT 4143	SKMT 4523		SKMT 4523	SKMT 4223	SKMM 4902	SKMT 4523	SKMM 4902		SKMM 4902		SKMT 4822
Score	66.67	100		63	30	100	62.5	100		100		NA
KPI*	50% Students Achieved 65% Marks											
Achievement (YES or NO)	YES	YES		YES	NO	YES	YES	YES		YES		

*To be determined by Programme Owner

e.g. 0.65 indicates 65% of the student population obtained at least grade B.

Overall PO attainment

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO 11	PLO 12
Score	66.67	100	93.2	63	100	100	79.41	100	100	100	83.33	96.6
Overall PO Attainment (YES or NO)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

COHORT 2018/2019

Cohort : 2020/2021 (Year 3)

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
Course	SEMT 3212	SEMT 3333	SEMM 3033			SEMM 3915		SEMM 3915	SEMM 3915			SEMT 3812
Score	51.02	85.7	90.32			NA		NA	NA			NA
KPI*	50% Students Achieved 65% Marks											
Achievement (YES or NO)	NO	YES	YES									

COHORT 2019/2020

Cohort : 2020/2021 (Year 2)

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
Course Code	SEMM 2313	SEMM 2433					SEMM 2713				SEMM 2613	
Score	80	100					100				96	
KPI*	50% Students Achieved 65% Marks											
Achievement (YES or NO)	YES	YES					YES				YES	

COHORT 2020/2021

Cohort : 2020/2021 (Year 1)

PLO/GA code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
Course Code	SEMM 1203	SEMM 1113			SEMM 1503	SEMM 1921		SEMM 1921	SEMM 1513	SEMM 1911		
Score	82.14	NA			79.16	100		100	100	NA		
KPI*	50% Students Achieved 65% Marks											
Achievement (YES or NO)	YES				YES	YES		YES	YES			

***Possible Programme Change Actions	
Changes to the Assessment Plan	● Revision of Intended Learning Outcomes ● Revision of measurement approaches ● Changes in data collection methods ● Changes in targets/standards ● Changes in the sampling
Changes to the Curriculum	● Changes in teaching techniques ● Revision of prerequisites ● Revision of course sequence ● Revision of course content ● Addition of courses ● Deletion of courses
Changes to the Academic Process	● Revision of admission criteria ● Revision of advising standards or processes ● Improvements in technology ● Changes in personnel ● Changes in frequency or schedule of course offering