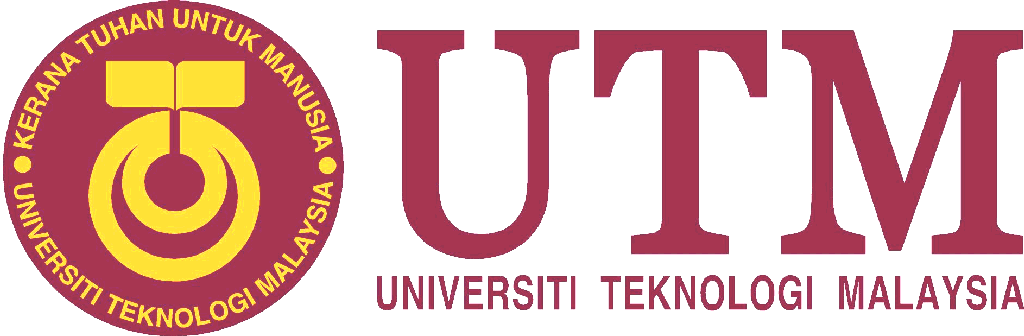
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| **ANNUAL PROGRAMME ASSESSMENT REPORT**  **(APAR)**  \*(If the programme has more than one active curricula running simultaneously, please provide separate PAR) |



|  |  |
| --- | --- |
| **1. PROGRAMME INFORMATION** | |
| School: | Mechanical 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 : | 525 (MOTOR VEHICLES, SHIPS AND AIRCRAFT) |
| Programme Owner  (State the name & position): | Prof. Ir. Dr. Pakharuddin Bin Mohd Samin |
| Session: | 2019/2020 |
| The first Intake for this curriculum (Semester/Session): | 1-2011/2012 |
| 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 |

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| **2. Programme Learning Outcomes (PLO)**  (Please list the Programme Outcomes and assessment tool used) | |
| **PLO/GA** | **Statement of PLO** |
| PLO-KW | Acquire and apply fundamental knowledge of mathematics, science and engineering principles to solve complex mechanical and aeronautics engineering problems;  Keywords: **Engineering knowledge** |
| PLO-THPA | Ability to identify, formulate and analyse complex mechanical and aeronautics engineering problems;  Keywords: **Problem analysis** |
| PLO-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** |
| PLO-THI | Ability to investigate complex mechanical and aeronauticsengineering problems using research-based knowledge and methods to produce conclusive results;  Keywords: **Investigation** |
| PLO- SCMT | Ability to use modern engineering and information technology (IT) tools in complex mechanical and aeronauticsengineering activities, with an understanding of the limitations;  Keywords: **Modern tool usage** |
| PLO- 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** |
| PLO- 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** |
| PLO- GCE | Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice;  Keywords: **Ethics** |
| PLO-CS | Ability to communicate effectively on complex mechanical and aeronauticsengineering activities both orally and in writing;  Keywords: **Communication** |
| PLO-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** |
| PLO-SC | Ability to undertake lifelong learning and manage information including conducting literature study;  Keywords: **Life Long learning** |
| PLO-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) |
|  |  |  |  |

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

**Note:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |
| 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 |
| 1. **State the Indirect measurement findings for the Programme** | | | | | | | | | | | | |
| **Exit Survey:**   |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **SESSION** | **PLO1** | **PLO2** | **PLO3** | **PLO4** | **PLO5** | **PLO6** | **PLO7** | **PLO8** | **PLO9** | **PLO10** | **PLO11** | **PLO12** | | 2019/2020 (Graduated Cohort) | 100 | 100 | 96 | 100 | 96 | 96 | 96 | 100 | 100 | 98 | 100 | 100 |   Referring to: Question C: Ability upon Graduation  Responses to all 12 PLOs gave values of more than 90%, indicating that the target were achieved.  **IAP Report:**  **Exit Survey:**  Referring to: Question C: Ability upon Graduation  Responses to all 12 PLOs gave values of more than 90%, indicating that the target were achieved.  **External Examiner Report:**  **Associate Professor Abu Hanifah Haji Abdullah**   1. Recommendations/Corrective Action:   The program is excellent, it requires several improvements to ensure the programme to continue to be excellent and sustainable. Please refer to the above recommendations.   1. Overall Comments on the Quality and Output of the Bachelor Degree Programme being assessed:   The programmes must be aligned with the industry, it is recommended that the program review is conducted with the industry across the whole industry spectrum (design, production, operation, maintenance, airworthiness). These industries are invited to physically invited or request their comments through questionnaires.  **Associate Professor Ir. Dr. Abd. Rahim Abu Talib**   1. Recommendations/Corrective Action :   Recommendations for continuous quality improvement are listed in the relevant section above   1. Overall Comments on the Quality and Output of the Bachelor Degree Programme being assessed:   The programme offered is equivalent in quality and output compared to other international institution.  **Industrial Advisory Panel (IAP): RUMUSAN 24 September**  **Mr. Mohd Izhar Harun**   * 1. The course owner should embed industrial case study in their syllabus which include self-learning activities and systematic decision-making process.   2. The program owner should maintain the core subjects to ensure good fundamental engineering knowledge of the students   3. The course owner should include problem-based learning in their T&L activities and lecturers act as coaches and not as a teacher.   4. The lecturers should continuously improve themselves with the latest technology in particular that related to IR 4.0.   5. The lecturers as solution providers should maintain good networking and relationship with industries and keep themselves at the “shopfloor of company” to ensure industrial problems can be channelled directly to university.   **Mr. Naguib Mohd Nor**   * 1. The lectures should regularly communicate with industry higher management staffs such as CEO to inform themselves about the direction of industries particularly that related to post Covid-19 pandemic.   2. Since Malaysia is not a leading product-design country, the course owner should expose students with reverse engineering, technology duplication and train them to utilize the available resources. Then, lecturers can expose the student with the existing product or technology advancement and further exploit it for different applications.   3. In most of the courses, lecturers should motivate students to solve problem using programming, codes, and automations especially things that related with repetitive tasks or calculations. | | | | | | | | | | | | |
| **Related Audits:**  None | | | | | | | | | | | | |

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| **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** |
|  |  | No | 20202021 semester 1 | 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 |  | 12 October 2020 |
| **Verified by** | **Deputy Dean (Academic) or Assoc. Chair Academic**  **(Name)** |  |  |

**Attachment 1**

(Please provide result for all cohorts)

**COHORT 2016/2017 (No of credits to graduate :137)**

Session : 2016/2017 (YEAR 1)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PLO/GA code | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 | PLO12 |
| Course Code | SKMM 1203 | SKMM 1113 | NA | NA | SKMM 1503 | SKMM 1922 |  | SKMM  1922 | SKMM  1512 | SKMM 1912 | NA | NA |
| Score | 73.2 | 27.7 |  |  | 83.9 | 64.8 |  | 68.9 | 73.5 | 78.5 |  |  |
| KPI\* | 50% Students Achieved 65% Marks | | | | | | | | | | | |
| Achievement  (YES or NO) | YES | NO |  |  | YES | YES |  | YES | YES | YES |  |  |

Session : 2017/2018 (YEAR 2)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PLO/GA code | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 | PLO12 |
| Course Code | SKMM 2313 | SKMM 2433 |  |  |  |  | SKMM 2713 |  |  |  | SKMM 2613 |  |
| Score | 25.0 | 83.3 |  |  |  |  | 60.0 |  |  |  | 100 |  |
| KPI\* | 50% Students Achieved 65% Marks | | | | | | | | | | | |
| Achievement  (YES or NO) | NO | YES |  |  |  |  | YES |  |  |  | YES |  |

Session : 2018/2019 (YEAR 3)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PLO/GA code | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 | PLO12 |
| Course Code | SKMA 3212 | SKMA 3333 | SKMM 3033 |  |  | SKMM 3915 |  | SKMM 3915 | SKMM 3915 |  |  | SKMA 3812 |
| Score | 82.6 | 53.3 | 93.1 |  |  | 95.7 |  | 95.7 | 100 |  |  | 96.4 |
| KPI\* | 50% Students Achieved 65% Marks | | | | | | | | | | | |
| Achievement  (YES or NO) | YES | YES | YES |  |  | YES |  | YES | YES |  |  | YES |

Session : 2019/2020 (YEAR 4)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PLO/GA code | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 | PLO12 |
| Course Code | SKMA 4143 | SKMA 4523 |  | SKMA 4523 | SKMA 4223 | SKMM 4902 | SKMA 4523 | SKMM 4902 |  | SKMM 4902 |  | SKMA 4822 |
| Score | 51.5 | 67.7 |  | 58.1 | NA | 100 | 67.7 | 62.5 |  | 43.8 |  | NA |
| KPI\* | 50% Students Achieved 65% Marks | | | | | | | | | | | |
| Achievement  (YES or NO) | YES | YES |  | YES | NA | YES | YES | YES |  | NO |  | NA |

\*At least 50% of the students achieved 65% marks or higher

Overall PO attainment (average values)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PLO/GA code | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 | PLO12 |
| Score | 58.10 | 58.0 | 93.1 | 58.1 | 83.9 | 86.83 | 63.85 | 75.7 | 86.75 | 61.15 | 100 | 96.4 |
| Overall PO Attainment (YES or NO) | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |

**COHORT 2017/2018**

Session : 2019/2020 (YEAR 3)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PLO/GA code | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 | PLO12 |
| Course Code | SKMA 3212 | SKMA 3333 | SKMM 3033 |  |  | SKMM 3915 |  | SKMM 3915 | SKMM 3915 |  |  | SKMA 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 2018/2019**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | 56.4 | 90.7 |  |  |  |  | 100 |  |  |  | 84.8 |  |
| KPI\* | 50% Students Achieved 65% Marks | | | | | | | | | | | |
| Achievement  (YES or NO) | YES | YES |  |  |  |  | YES |  |  |  | YES |  |

Session : 2019/2020 (YEAR 2)

**COHORT 2019/2020**

Session : 2019/2020 (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 | 79.07 | NA |  |  | 88.7 | NA |  | NA | 50 | NA |  |  |
| KPI\* | 50% Students Achieved 65% Marks | | | | | | | | | | | |
| Achievement  (YES or NO) | YES | NA |  |  | YES | NA |  | NA | YES | NA |  |  |

\*At least 50% of the students achieved 65% marks or higher

**\*\*\*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 |