Introduction of New Academic Operations to Comply with LAN and DCA Requirements: UniKL-MIAT Strategy

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Abstract

Aviation schools worldwide should comply with the competent authority and industry requirements in order for their students to qualify for a LWTR (License without Type Rating). UniKL MIAT being a branch campus of UniKL offering studies in aircraft maintenance technology must fulfill at least two sets of requirements, namely the academic requirement and the competent authority requirement which is considered mandatory. In our country, the academic requirement is determined and audited by Lembaga Akreditasi Negara (LAN), while for the competent authority requirement, UniKL MIAT has to comply with all the regulations published by the Malaysian Department of Civil Aviation (DCA). This paper will present UniKL MIAT efforts and strategies in offering aircraft maintenance training that fulfilled both sets of requirements. This new academic operations is a win-win case for UniKL MIAT students as they will be offered a Diploma on completion of their course, and for those achieving minimum results required by the DCA are eligible to apply and sit for the LWTR examination conducted by the DCA. The move to implement these dual requirements is inevitable and will be a success factor when UniKL MIAT embarks to be certified as an approved JAR/EASA Part 147 approved MTO in the near future.

Keywords: Academic, Competent Authority, Curriculum, Aviation, Training

1. Introduction

1.1 UniKL MIAT Profile

UniKL MIAT is unique being the only campus in Malaysia to offer aircraft maintenance technology programmes and to comply with LAN and DCA requirements. Originally established in Jasin, Melaka in 1997, as the technology provider of MARA Vocational Training with Northrop Rice USA, it was known as MARA-Northrop Rice Institute (MNRI).

In 2000, with the expansion of the programmes and increased student enrolment, MNRI was privatized as Malaysian Institute of Aviation Technology Sdn Bhd (MIAT). In 2003, MIAT took another step further and become part of Universiti Kuala Lumpur, thus changed its name to Universiti Kuala Lumpur Malaysian Institute of Aviation Technology (UniKL MIAT) [1].

1.2 Background of Aircraft Maintenance Training Program

Historically and traditionally in Malaysia, Aircraft Maintenance Training are carried out by the industries such as MAS, AIROD, MHS and TRANSMILE through an apprenticeship scheme at their own training school based on syllabus issued by our local DCA and thereafter sit for the LWTR examination conducted by DCA. Courses are conducted on modular system and examinations are carried out after each phase of the module. This mode of training is considered suitable and feasible as the number of apprentices is small per intake [2].

The requirements for the Aviation industry human resources especially for the MRO have been projected by MIGHT from 6600, to 11 000 for the period 2000-2020 and this lead to the establishment of UniKL MIAT [3].

1.3 Establishment of UniKL MIAT

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The establishment of UniKL MIAT with a capacity to accommodate 1000 students is in fact the answer to above requirement. UniKL MIAT being a branch campus of UniKL offering studies in aircraft maintenance technology must fulfill at least two sets of requirements namely the academic requirement and the competent authority requirement which is considered mandatory.

In our country, the academic requirement is determined and audited by Lembaga Akreditasi Negara (LAN) [4] while for competent authority requirement, UniKL MIAT has to comply with all the regulations published by the Malaysian Department of Civil Aviation (DCA) [5].

2. Complying With LAN and DCA Requirements

The introduction of New Academic Operations is to comply with LAN and DCA requirements. LAN and DCA requirements for establishing an Institute/University is almost identical and a comparative study reveal the following:[6][7]

Requirements of an Institute/University	LAN	DCA
• Institute Exposition and Procedures	N/A	Complied
• Documents for information on course of study	Complied	Complied
• Teaching Staff (Bachelor, Master, PhD)	Complied	N/A
• Syllabus of all subjects taught and training hours	To be prepared	Supplied by DCA
• Available facilities for the students	Complied	Complied
• Institute Management System	Complied	Complied
• Lesson Plan	Complied	Complied
• Structured OJT on live aircraft	N/A	Complied
• Quality System	N/A	Complied
• Internal Audit	N/A	Complied
• Examination Management	Complied	Complied
• Authorities Audit	Complied	Complied
• Staff Development Program	Complied	N/A
• Revenue & Profit and Loss Account	Complied	N/A

3. UniKL MIAT New Semester System

UniKL MIAT in its effort and strategy to comply with LAN and DCA requirements has decided to carry out changes to the academic system. The main changes involved the teaching methods from modular system to semester system.

The change is considered inevitable as the student population has increased considerably. The change is to ensure the training operations is in a manageable situation. This change exercise will simultaneously produce tangible benefits both to the students and instructors.

- The objectives of the new semester system are as follows:
  o *Alignment with the UniKL Chancellery Academic System*
    - The academic calendar changes from 21 weeks to 18 weeks per semester. This is in-line with UniKL status as a technical university. Other academic universities in the country follow a 14 weeks semester.
    - Implement recommendations of '*Lembaga Akreditasi Negara*' (LAN) panel of experts to meet the accreditation board minimum standards and accreditation requirements.
    - To take advantage of the university support infrastructure, such as the UniKL Management Committee, UniKL Senate, and the Academic Committee. This form part of the university's exposition for approval by the Ministry of Higher Education.
  o *Ensure students to become knowledge workers in the future by acquiring strong basic aviation knowledge and skills as required by the local aviation industry*
    - To reduce the current failure and drop rates. The latest examination results indicate a drop rate of 4.4% and a failure rate of 10.7%.
    - The examination analysis indicates that the modular style of learning pose a burden to students thus affecting their learning abilities.
    - To ensure students are capable to pursue the LWTR competency examination during or immediately after their study period at UniKL MIAT.
  o *Ensure lecturers are fully prepared to deliver as per the approved lesson plans*
    - To ensure that UniKL MIAT's panel of lecturers are well prepared for their

knowledge deliveries and practical coaching.

- To provide sufficient time slots for lecturer to carry-out industry research on a continual basis.
- To ensure lecturers acquire some level of specialization to meet the local and regional industry requirements.

o *Improved examination management business process*

- Ensures better examination planning as examination will be carried out during the examination week as compared to phase tests which are held after completion of each subject taught.
- Substantial reduction of workload.
- Provide sufficient time to do analysis and remedial action before the next examination. This will ensure integrity of UniKL MIAT's question bank.
- Demand student to be consistent in their examination preparations.

Based on the Modular System for a total of 350 students, an average of thirty phase tests are held every month. This average will increase when the number of class increases to the full capacity of the Institute which is 1000 students. With the introduction of New Semester System the above process is redundant.

4. UniKL MIAT Learning System

The major compenents of UniKL MIAT learning system are as follows:

1) As a technical university, UniKL maintains a standard of 40% theories and 60% practical sessions in the entire syllabus offered. UniKL MIAT adhered strictly to the standards.
2) To ensure that UniKL MIAT graduates meet the skills required by the industry, the program is designed to maximize both theory and practical, while equipping the student with the appropriate work ethics and discipline required in the aviation industry.
3) Lectures
   - Each subject is taught over a period of 9 or 18 weeks. With one or more sessions per week, the total duration is dependent upon the subject credit hours.
   - Each session is normally between 1 to 4 hours lecture.
4) Self study and research
   - The student study hours are designed to be 8 hours per day. This is based on a research

recommended by 'Jabatan Pelajaran Tinggi Swasta'.
- For every 1 hour of teaching and learning, students are required to do at least 2 hours of self study/research individually or as a group.

5) Practical Skills
- To meet the aviation industry needs, all students are required to carry-out extensive general workshop practice on aircraft systems simulation at UniKL MIAT workshops. The students are supervised by experienced lecturers and technicians.
- Students are also exposed to real aviation maintenance environment simulated in the hanger using real functional aircrafts.
- Every student is required to be on industry attachment in the form of structured on-job-training (OJT) on live aircraft. UniKL MIAT has full time OJT coordinators supervising the students.
- Students also carry out industry visits arranged by the university. Individual visits to the industry by students are also encouraged.

6) Knowledge Examination & Practical Training Assessment
- Regular knowledge tests and practical assessments are conducted by lecturers / practical assessors. Assignments are also marked and graded accordingly. This constitutes a continuous assessment of the student total learning ability.
- There will be a final examination at the end of every semester.
- The examination results will be discussed in the Academic Operations Review Meeting.

5. Quality System: Audit of Training

1) All applicable operational areas and associated support department, both technical and administrative within UniKL MIAT are periodically audited against the established standards or requirements in accordance with a planned audit program or as directed by management
2) The Quality Assurance Inspectors and Quality Assurance Executive (Auditors of Quality Assurance Department) are responsible for carrying out audits for monitoring compliance with the aviation regulatory requirements and the areas they are auditing.
3) Auditors performing audits are trained and assessed prior to being allowed to perform

audit independently.
4) The quality of the program are also monitored and audited by the DCA for its compliance to the International aviation standard.

6. Examination Management

6.1 Rational for Introduction of the Grade Point Average (GPA) System

The programmes of UniKL MIAT are designed to meet the aviation maintenance industry requirements, as such the grading assessment method used in the program is currently based on the competency rule of Pass/ Fail system which is adopted from the BCAR Section L/JAR 66 standards [8]. These standards are regulatory requirement from local and international authority in certifying maintenance personnel for the industry [9].

Nevertheless being a branch campus of a university, there is a need to use a common grading system that is used by other academic institution especially after UniKL MIAT has moved to a new academic learning system. This common grading system is known as Grade Point Average (GPA) grading system.

The differences between Pass/Fail and GPA system are summarized below:

Pass/Fail System	CGPA system
- Show competency at certain standard – normally higher than average standard. i.e: aviation maintenance licensing – 70 or 75%.	- Show competency in average standards. i.e: university passing marks 40% or 50%.
- Level of competency is normally not measured since the passing mark is higher.	- Level of competency is indicated by alphabetical grade. i.e: A, B, C, D and F which has different grade point average.
- Does not reflect average performance in a semester or throughout studies – only show competency in specific subject in any area of studies.	- Reflect average performance in a semester and throughout studies using Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA).
- The competency assessment: one-time for specific subject.	- The competency assessment: continues for specific subject through-out semester.
- Competency level much higher: ensure product has good necessary knowledge	- Better perspective in monitoring and handling student's performance and
and practical skills.	academic services: drop-out, probation, dean's list and etc. - Foster spirit of higher achievement and encourage competition in studies – due to level of competency. - Allow credit transfer for continuing study.

Note: the adoption of the Pass/ Fail System is to prepare students to sit for the LWTR examination conducted by DCA and the adoption of CGPA System is to offer Diploma to students on successful completion of the course.

7. Conclusion

Complying with LAN and DCA requirements seems necessary for UniKL MIAT to be a center of aviation training producing qualified graduates for the industry. The system will also align the institute to be in-line with the academic processes of UniKL while maintaining the interest of the aviation industries and regulatory bodies.
This new academic operations is a win-win case for UniKL MIAT students as they will be offered a Diploma on completion of their course, and for those achieving minimum results required by the DCA are eligible to apply and sit for the LWTR examination conducted by the DCA.

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Biographical information

MR. WARIS SIRAT has more than 40 years of experience in the aviation industry. Before joining UniKL MIAT, his last position in MAS is Head of Standards and Procedures. Currently he is the Technical Writer and Specialist, QA Dept, UniKL MIAT. His interest is in Air Legislation, Airworthiness Certification Programme, Standards and Procedures Documentation.

Ir. AHMAD JAIS Alias started his career as an Engineer with Sony Video (M) Sdn. Bhd. for 4 years, an experience which qualifies him to attain the Professional Engineer title. Then he joined Universiti Kebangsaan Malaysia as lecturer for ten years, before recently moved to Universiti Kuala Lumpur. UniKL is known for its industrial-based fields of study, and he is now sharing his experience to train the future aviation industry workforces.