

Instilling fundamental safety in laboratories knowledge among UTM Chemical Engineering Students through Safety Passport Program

*Assoc. Prof. Ir. Dr. Mimi Haryani Hassim
Leader Safety and Health Research Group /
UTM-MPRC Institute for Oil and Gas
Universiti Teknologi Malaysia*

The Malaysian Prime Minister unveiled the Occupational Safety and Health Master Plan 2021-2025 (OSHMP25) in October 2021, outlining different strategic core principles to support the establishment of a safe and healthy work culture and enhance the Malaysian well-being index. The OSHMP25, which is centred by the concept 'OSH Inclusive - Equality and Commitment,' outlines seven core strategies, with Strategy 3 focusing specifically on boosting OSH education and research.

Among the activities deemed important to be implemented under this approach is the improvement of safety awareness, knowledge, and behaviour in higher education institutions. The Strategy 3 team committee's painstakingly planned action is to enforce the adoption of a safety module programme in all of the nation's higher educational institutions. The primary purpose of the programme is to provide students with a fundamental understanding of safety and health when they work in laboratories or workshops.

In supporting this initiative, Universiti Teknologi Malaysia (UTM)'s Faculty of Chemical and Energy Engineering has launched its Safety Passport programme officially under the portfolio of the Deputy Dean (Research, Innovation, and Development). The Faculty has opted to delegate complete programme execution to the Safety and Health Research Group. All undergraduates, postgraduates, research assistants/officers, and assistant engineers must participate in the programme. They must complete this programme just once during their studies or careers at UTM.

The programme is divided into seven modules, which covers the following topics: introduction to national OSH acts and regulations; basic concepts of accident prevention; chemical hazards; physical hazards; biological hazards; ergonomics; and basic safety audit and emergency response plan. All of these modules are designed in-house, by UTM lecturers. Each module is lectured for 30 minutes to an hour in an active learning setting (see Figure 1). Attendance is required as one of the requirements for obtaining the Safety Passport, along with passing the Test at the end of the session with a minimum of 40% marks. The online test consists of 30 objective questions drawn from all seven topics. The questions are randomised to prevent cheating, and students have 30 minutes to answer all of them. Those who scored 90% or higher will be awarded a special merit certificate.

Time	Modules	Instructor(s)
8.30 AM – 8.35 AM	WELCOMING REMARKS	Prof. Dr. Mat Uzir Wahit
8.35 AM – 8.55 AM	INTRODUCTION TO SAFETY PASSPORT AND FKT SP WEBSITE	Dr. Mimi H. Hassim
8.55 AM – 9.00 AM	BRIEFING ABOUT TEST	Dr. Hasrinah Hasbullah
9.00 AM – 9.30 AM	INTRODUCTION TO FMA 1967, OSHA 1994, OSHA AMMENDMENT 2022	Dr. Kamarizan Kidam
9.30 AM – 10.30 AM	BASIC PRINCIPLES AND ACCIDENT PREVENTION	Dr. Kamarizan Kidam
10.30 AM – 11.00 AM	Morning Break	
11.00 AM – 12.00 PM	CHEMICAL HAZARD	Dr. Lai Jau Choy/ Dr. Mimi H Hassim
12.00 PM – 1.00 PM	PHYSICAL HAZARD	Dr. Norhana M Rashid
1.00 PM – 2.00 PM	Lunch Break	
2.00 PM – 2.30 PM	BIOLOGICAL HAZARD	Dr. Daniel Joe Dailin
2.30 PM – 3.00 PM	ERGONOMIC	Dr. Hasrinah Hasbullah
3.00 PM – 3.45 PM	BASIC SAFETY AUDIT & EMERGENCY RESPONSE PLAN	Dr. Dinie Muhammad
4.00 PM – 4.30 PM	ONLINE TEST (e-LEARNING)	

Figure 1: Full schedule of the Safety Passport program

The first series of the programme was held on October 14, 2023, for second and third year undergraduate students, and a total of 606 students completed the programme and took the test. Meanwhile, the second series was held two weeks later, on October 28, 2023, for first-year UG students and postgraduates (a total of 531 people). Due to the varied class timetables for different batches of students, the instructors agreed that the programme would always be held on Saturday. They can already check their test results two days later, on Monday. If they pass, they must use a screenshot of their name from the PASS LIST as a temporary passport to enter the lab or workshop until the actual one is issued. All of this information is available on a specially designed website for the Faculty's Safety Passport, which can be found at <https://fkt.utm.my/safety-pass/> (see Figure 2).

The safety passport matter has been thoroughly discussed with the university's security team and the students' issuance card team. The original plan was to create a physical card the same size as the matrix/student's card, but due to the sensitive nature of the students' personal information, we have resorted to producing specially designed stickers for those who pass the programme. The sticker must be placed on their student card as proof that they have completed the basic safety programme and are thus permitted to enter the lab or workshop.

Those who fail will also find their names on the FAIL LIST. They must then immediately register to retake the Test on the following Saturday. Once they have completed the retake test form, they will be granted exclusive access to the video recordings for all seven modules to assist them in preparing for the retest. Access to the videos will be restricted at 8 a.m. on Saturday, before they take the test at 10.30 a.m. (note that it is a close note-test). For the students who need to repeat the test, an official email will be sent to their academic advisor (UGs) or project supervisor (PGs) to inform them of this situation. The spirit and ultimate goal of the programme is for all students to take it seriously; after all, having a thorough understanding of safety and health while in labs and workshops will benefit nobody else, but their own selves in a variety of ways.

Administration Office : +607-5533499 / Academic Office : +607-5535908 fcee@utm.my



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SAFETY PASSPORT

FCEE Safety Pass Card is a mandatory for all lab users before entering and using any facilities in the FCEE lab

Lab Users: Undergrad and Postgrad Students, Final Year Project Students, Researchers, Lecturers, Visitors

01

RESULT SAFETY PASSPORT



02

GOOGLE FORM FOR E-CERT GOLD AWARD



03

GOOGLE FORM FOR REPEAT THE TEST



04

E-LEARNING SAFETY PASSPORT



Figure 2: Overview of the website of the Faculty's Safety Passport program