



TEACHING PORTFOLIO

NURDIANA BINTI NORDIN@MUSA

B.Eng (HONS) in Mechatronics (IIUM), M.Sc in Mechatronics (Uni Siegen, Germany)

Department of Mechatronics
Fakulti Kejuruteraan Elektrik (FKE)
Universiti Teknikal Malaysia Melaka
Hang Tuah Jaya 76100 Durian Tunggal, Melaka

Table of Contents

- 1) Statement of Educational Philosophy
- 2) Teaching responsibilities
- 3) Representative Student Assessment
- 4) Representative Course Syllabus, Learning Outcome and Assessment Matrix
- 5) Student Evaluation
- 6) Workshops Attended
- 7) Teaching Research
- 8) Teaching Goals
- 9) Appendices

STATEMENT OF EDUCATIONAL PHILOSOPHY

"Who dares to teach must never cease to learn". I believe that to send a good message, you have to be the message. To be a good educator, you must be well educated yourself. Things we teach reflects how well we understand the subject matter. I urge myself to have a desperate thinking all the time; hoping that along with the adrenaline rush, the momentum to learn and understand matters to teach will help to shape my knowledge to an excellent educator standard.

"Always be in student's shoes". During my studies in schools and universities, I had always hoped for the lecturers to understand my constraints and restraints. Therefore, the frustrations of the one-way communication during that turbulent times guide me to be more personal with my students, trying to empathize their situation; if not all, most. Therefore, their feedbacks become my building blocks to enhance my soft skills as lecturer because education does not stop when the bell rings. I hope with my lifelong learning to become an excellent educator will inspire my students to incorporate continuous learning in their life as well.

TEACHING RESPONSIBILITIES

Still a young lecturer, I began my service with Universiti Teknikal Malaysia Melaka (UTeM) in June 2006 as a tutor. Equipped with only a Bachelor Degree, I was given a core subject to assist: BEKE 3653 Electrical Drives and Actuators. Thanks to the subject's lecturer, I was given an opportunity to teach in formal class, conduct the lab and tutorial, prepare an answer scheme for final, and mark the quizzes, assignments and final exam. From there onwards, the informal training has officially begun for me to become a lecturer. The following is the list of subjects that I have assisted as a tutor:

BEKE 3653 Electrical Drives and Actuator (Core)

BEKE 3543 Power Electronics (Core)

However, my tutoring days have begun well before I graduated from IIUM. I served as a tutor to my peers for a core subject: Statistics for Engineers for three consecutive semesters since my third year of study. Furthermore, immediately after graduation I started a career as an SPM tutor for 3 months before accepting the offer as a tutor in UTeM.

In October 2007, my postgraduate studies began in University of Siegen, Germany and following the graduation I came back to serve the University in April 2010. The following subjects are the ones that I assisted as tutor and become a formal lecturer for the first time.

BEKU 1213 Algebra and Calculus (Core) - Assisted

BEKU 1223 Digital Electronics and System (Core)

BEKM 2321 Makmal Asas Mekanikal (Core)

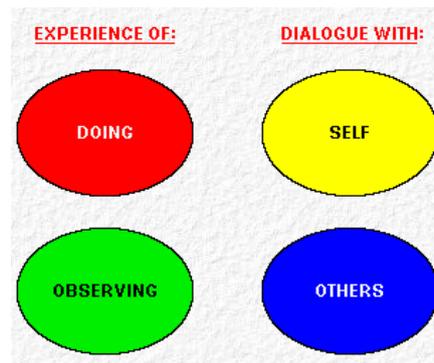
Other than undertaking my formal job as lecturer, I am responsible for 28 students under my supervision in Academic Advisory program conducted at the University level. In this program, I am entitled to monitor the progress of each student, cater to their problems and help them whenever needed, provide reports on their academic as well as non-academic progress throughout their studies and most importantly, help them to connect their potential to their best abilities to achieve excellent academic studies. Furthermore, I incorporated myself into two branches of research in my department namely Robotics Research Group as well as Underwater Research Group to further enhance and share the knowledge in my niche areas: Mobile Robotics and Computer Vision.

My other responsibilities include being the Faculty's ISO committee (2006-2007) which had successfully enlightened me on the measure of educational quality which must be achieved for the Programs to be certified by EAC and MQA. The knowledge has helped me to quantify what must be mended to the subject taught specifically and curriculum as a whole. I have recently been appointed as a Postgraduate and Research committee in which I hope to gain much more knowledge for the benefit of the faculty members, students as well as myself for my doctorate studies later.

I am a Graduate Member of BEM and I am inspired to achieve the Professional Engineering certificate during the course of my work in 5 years.

TEACHING METHODOLOGY

Considering the vast breadth of knowledge defining the subjects that I teach, the teaching methodologies used for these subjects are also varied accordingly. In general, I am comfortable with active learning in which all the learning activities are comprised of the experience of doing and observing as well as the dialogue with self and others. In hands-on subject such as Makmal Asas Mekanikal, I incorporate this method by demonstrating the experiment first and let the students' observe. After that, they have to do it themselves and I encourage them to comment on procedural context as well as recommendation to further enhance the experiments. I insist them to talk to each other about the theoretical part of the experiment as I implement the individual assessment on how much they understand about the concept underlying the experiments.



Active Learning Models

In other lectures especially a more conceptual ones such as Digital Electronics, applications oriented method is used. I asked the students to participate with me in the course of the lecture. I try to use simple language to explain concepts and emphasize the basics. Since electrical engineering has evolved into a larger breadth of engineering field thanks to digitization, I placed as much emphasis on working problems as well on the theory. Many practical examples are incorporated into the lectures at appropriate places.

As an educator, it really helps to make the teaching of engineering subject less difficult. Thus, I use both the whiteboards and on-screen presentation in my lectures especially if the topic requires a deep understanding and the nature of the topic is too difficult or complex to conveniently put them on the board. I also uploaded soft copies of the power-point slides to the web before class so that the students could use them to take notes. To further help my students, I conduct tutorials during my allocated free time for my students personally if they inquire them and find it difficult to understand the subject just by peer studying.

A two-way communication is always integrated in my class. I posed questions to the class and used them to start discussions. I am willing to entertain in details, the ideas or questions which arise spontaneously in the classroom. After going through the theoretical part, I would ask the students to solve a few problems. Students are encouraged to actively participate in class. I also give students assignments to do individually or in groups. The idea is for the students to help each other and also to encourage group discussions. Some of the assignments will need to be handed in which some will be discussed or presented during class where other students are required to evaluate the solutions presented. All this is geared toward improving critical thinking and communication skills.

After lectures, I sometimes use pop-quizzes as means to understand how much they have learned in the class for that day. It is a convenient mean for me to configure how effective my teaching and how well their learning capabilities adhere to my teachings. At times, the quizzes can be an open-book quiz and can also be in groups. Again, this is incorporated so that the students can assess their own understanding regarding the topic discussed and also to generate teamwork. I make it my habit to hand back their assignments, quizzes, and test as soon as possible so that the students can assess their own progress and make the necessary improvements.

2.0 REPRESENTATIVE STUDENT ASSESSMENT

3.0 REPRESENTATIVE COURSE SYLLABUS, LEARNING OUTCOMES AND ASSESSMENT MATRIX

In the beginning of the semester, students will be given the teaching plan for the subject. The teaching plan states the learning outcomes, synopsis and detail of the syllabus, proposed exam dates, subject implementation, subject evaluation and method of assessment of the subject. Students are presented with the matrix of learning outcomes in which the learning outcomes are mapped into program objectives so that the student will understand to which extent the subject addresses the outcome of graduates. Students are also presented with the matrix of learning outcomes versus program outcome and taxonomy. This matrix illustrates the level of the cognitive, psychomotor and affective domain in the Bloom's Taxonomy the learning outcome classifies. The generic skills addressed for this subject are technical and practical skills, leadership skills, knowledge, critical thinking and problem solving, ethics and moral, communication skills, teamwork and life-long learning. The way these skills are addressed is illustrated in the matrix of learning outcomes versus soft skills. The documentation on the syllabus, learning outcomes and assessment matrix are in Appendix A.

4.0 STUDENTS EVALUATIONS

5.0 TEACHING WORKSHOPS ATTENDED

6.0 TEACHING RESEARCH

7.0 TEACHING GOALS

On-going activities

- Revising and updating the course notes and assignments every semester
- Updating this teaching portfolio annually in order to re-evaluate and rejuvenate my teaching philosophy
- Execute a ten-minute evaluation in each class during mid-semester in order to monitor teaching effectiveness while time still exists to correct any problems
- Continue to upgrade methodology in order to give the best to the students
- Stay current in my discipline by reading the appropriate journals, attending conferences in order to integrate relevant issue into the classroom
- Continue to upgrade my e-learning materials
- Continue to produce teaching module for my subjects
- Review on forthcoming textbooks

Short-term Goals

- Add more animation on functionalities that are difficult to visualize in words or pictures.
- Obtain a consistent increase in my teaching evaluations on the overall course
- Integrate state-of-the-art computer-based teaching presentations for each class that I teach in order to increase students' understanding
- Joint-preparation of textbooks with other lecturers teaching the same course

Long-term Goals

- Write textbooks on the subjects that I teach
- Produce CD on my course presentation.
- Get attachment with industries related to disciplines so as to keep abreast with new developments as well as gain 'hands-on experience' to impart to students.

APPENDICES

Appendix A: Sample syllabus, learning outcomes and course assessment matrix

Appendix A