EMU Computer Engineering Department
Industry Advisory Committee Meeting
(online, MS Teams, 29 April 2021)

Participants: Bora Tüccaroğlu, Ayşen Tunca (Credit West Bank), Gökhan Hançer (Ata Bilişim), Nihat Yılmaz, Necdet İcil (GMTGB Technopark), Prof. Dr. H. Işık Aybay, Assoc. Prof. Dr. Zeki Bayram, Assoc. Prof. Dr. Gürcü Öz (EMU).

The meeting started at 16:00. First of all, Head of Department Prof. Aybay made a statement about the purpose of the meeting and the contributions expected from the participants.

General Views in the First Round

• There is a positive view of the Computer Engineering Department from the industry. There is a positive perception for graduates in the sector.

• Both interns and employees are well-equipped in terms of knowledge and business handling style.

• They are also good at tracking and managing a project.

• EMU Computer Engineering graduates are viewed positively in job applications.

• Offering the Mobile Applications course is positive.

• Offering a single course about database is considered to be insufficient.

• Today, there is a great demand for software, especially during the Covid-19 pandemic.

• The projects that improve the integration of hardware and software should be emphasized.

• There is a need for courses on Web services and Internet programming.

• EMU Computer Engineering graduates are more successful in problem solving, concentration and teamwork.

• Graduates are good at engineering design, but have problems with visual interface design. The ability to create user-friendly designs needs to be developed. Graphic design and interface design need to be improved.

• Popular languages used in web design are expected to be learned before graduation.

• Some graduates have problems in speaking a foreign language in relations with abroad.

• EMU is at the top of other local Cypriot universities.

• Generally, graduates in recent years mostly create software by using ready-made libraries. They are not very keen on creating anything new. It is also necessary to enable students to improve themselves in software at lower levels.

• Projects that will ensure cooperation between different branches (hospital, hotel, etc.) should be given. Joint projects between departments (disciplines) can be made.

• Software engineering graduates can easily adapt to software issues in business life.

• Practical applications need to be increased in the database course.

• It is positive that the Embedded Systems course is different in the two programs.

• Graduates are getting better equipped every year.

• Database courses should be given on a project basis and it is necessary to ensure that students develop themselves.

• Interdisciplinary (business, mechanical engineering, etc.) group work should be promoted.

• The curriculum is sufficient; a heavier version may prove to be difficult for the students.

• Expectances from graduates in business life are problem solving, self-motivation, desiring to learn and learning new things. These can be achieved with the given technical elective courses.

• During job interviews, the following are considered: the projects a student has completed, the ability to participate in teamwork, the ability to make presentations, the ability to collect and analyze the demands of the customer, and to ability to prove themselves to the customer.

• It is good to include embedded system software in the curriculum, and we see its contribution in subjects such as robotics applications at the Technopark companies.

• It will be better to have plenty of elective courses in the curriculum and let students determine their sub-specialty branch.

• It is important that new graduates come by doing lots of projects. Teamwork, soft skills, presentation skills and analysis skills are required in the sector.

• Perhaps the department can concentrate on one language while teaching programming. Graduates are competent to switch to other languages later on.

After the completion of the first round, the Chair of ABET Committee, Dr. Bayram asked the participants to evaluate what is expected of a Computer Engineering graduate and a Software Engineering graduate. Leading the meeting, Prof. Aybay let the participants to express their

opinions on this issue in the second round. The views expressed in this tour can be summarized as follows:

Expectations from a Computer Engineering graduate:

• Should know very well the operation of operating systems.

• Should know embedded systems written on the operating system well.

• Hardware knowledge must be strong. Should know how hardware works.

• Should know network and network testing software. We see that graduates are mostly limited by theoretical knowledge about computer networks. Practical aspects should also be improved with applications in the relevant courses.

• Should be able to conduct network tests, use and develop network test software.

• Should know well the utility programs on the operating system.

• Should be able to write interface software such as post device - computer, cell phone - computer connection software.

• Should know the ways in which databases are loaded, which types of databases can be loaded on which systems.

Expectations from a Software Engineering graduate:

• Must know information security and data security issues.

• Should know and use artificial intelligence.

• While writing application programs, the system for which the code is to be written for (such as hotel, health) should be understood well.

• Software Engineering graduates are also expected to be well-equipped in networking and systems.

• If a hardware based software is required on say, a health system (such as cardiography, tomography devices), Computer Engineers are chosen, and if data analysis is required, Software Engineers are chosen.

Finally, in addition to these opinions, the following issues were also highlighted:

In general, Computer Engineering graduates should be dealing with operating systems, hardware and network issues while Software Engineering graduates should be able to ensure

that application software that can be installed on those works in a healthy, safe, and analyzable manner.

Generally, engineering skills of graduates are not used effectively in the country. It is somewhat used in the field of networking. What is learned in lectures is mostly theoretical. Graduates sometimes have difficulty in solving network problems.

Generally, in business life, engineers work with people from different disciplines, who know how to learn and who develop themselves. During job interviews, candidates are asked about their specific competences. They are questioned on subjects they made projects, and which certificates they possess.

The new generation is more assertive in research, originality, self-development. Since there is more participation in online training, their level of knowledge is higher. The theoretical knowledge given is sufficient. In addition, practical applications in lectures need to be increased. Teamwork is important. Software methodologies given are sufficient. Some areas of software engineering can be improved. UI, US, and backend are important. Mobile Applications course may be made compulsory. Software applications can be increased in the database course. Web software practice can be increased. Embedded system courses can be increased.