Employment Ticket for MSc in Software Design (approved 13 Feb 2020)

The technologies in IT—computers, operating systems, programming languages, algorithms—continuously evolve. The CS educations of the ITU evolve with the field, e.g., the statement “being able to program” today encompasses an understanding and application of IT security tenets. To keep the employment tickets brief, we implicitly understand them in this contemporary sense.

Every SD graduate has a specialisation which embodies the combination of the graduate’s bachelor degree with the computational thinking and principles instilled by the IT University. The program predefines the following specialisations:

- **(Business Analytics)** Can deploy computational thinking and skills in conjunction with a social science bachelor’s background towards constructing and applying computational models. The graduate can design and develop data analytics to support e.g. financial analytics, fraud detection and social network analytics.
- **(Technical Interaction Design)** Can deploy a solid understanding of both the limits and opportunities of contemporary information technology, especially wrt. software development in conjunction with a humanities bachelor’s background towards constructing formally wellfounded interaction designs, based on both qualitative and quantitative empirical methods. The graduate can develop for contemporary application contexts, e.g., for Internet of Things, with respect to both UX and technical design and implementation.
- **(Software Design & Technology)** Can deploy a solid understanding of cutting-edge programming technologies in conjunction with the analytical skills of a natural science bachelor’s background towards both constructing concrete software and, eventually, guiding the technological development of his ambient organisation.

Moreover all SD graduates:

- can develop software in a mainstream object-oriented or imperative programming language (e.g., Java or C#) and can quickly learn other similar programming languages;
- can apply basic principles of databases;
- can apply basic principles of software engineering;
- can apply basic principles of algorithms and data structures;
- has developed and can apply software-related analytical skills;
- can communicate clearly and effectively with both more business-oriented and more technically-oriented counterparties
- understand the challenges associated with privacy, security and ethics and can assess and discuss these for a given technical solution.