

**Information and
 communication
 technologies (ICT)**

**Basic business skills
 for the digital era**

IT Fundamentals

**Frontend web
 development**

**Backend web
 development**

**Mobile Application
 Development**

**Business Intelligence
 and Big Data**

This module is about basic skills, like giving effective presentations using PowerPoint and gathering and processing business data using Excel. Moreover, it explores marketing decisions that can be supported with digital aims, including social media outlets. Finally, key concepts of cloud computing and virtualization are presented, and core skills are acquired about hosting business services on public clouds like Amazon AWS and Microsoft Azure.

This module is about skills that allow advanced usage of computer systems like usage of the Unix Shell, distributed version control with Git and bash programming. By acquiring these skills, the learner will be able to automate tasks and keep full history of important files and documents. Furthermore, this module introduces the popular programming language Python. Finally, core topics of database technologies and issuing SQL commands to define and manipulate data.

This module covers technologies for building the frontend of modern web applications. Basic skills acquired will be HTML, CSS and JavaScript. Moreover, specific libraries framework (e.g. Bootstrap, Materialize CSS, jQuery, AngularJS) will be presented with the focus being on building sample applications from scratch. Finally, static site generators for the quick and easy generation of simple sites will be presented.

The module covers the backend side of building modern web applications including topics like Restful APIs.
 Introduction to Web backend development
 PHP programming Language
 PHP and Relational DBs
 NoSQL DB and DB caching
 PHP Frameworks and CMS

This is an introduction to mobile programming and app development class series, partly based on an upper-division undergraduate introductory programming languages course. Whether you're interested to learn making apps for fun, would like to start app development as a side-job, or even want to pick up software development as a career, this course will give you the background and practice you need to get started and take off on your own.

This module is about Business Intelligence and handling of big volumes of data that modern businesses can have access to. It introduces the two basic categories of machine learning algorithm, libraries that implement machine learning algorithms (e.g. scikit-learn, TensorFlow) and recent advancements in machine learning like deep learning. It introduces recent technologies for Big Data like Apache Hadoop, and NoSQL databases by providing concrete examples of using map-reduce processing, and business intelligence over big data.