Information Technology (IT) at Work

1. **Course number and name:** 020ATIES5/020AITES5 Information Technology (IT) at Work

2. **Credits and contact hours:** 4 ECTS credits, 2x1:15 contact hours

3. **Name of course coordinator:** Joe Sokhn

4. **Instructional materials:** Course handouts, Powerpoint slides

5. **Specific course information**
   a. **Catalog description:**
   This course introduces and explains the foundations of IT going through the main building block that are common and vital for any organization to work. The target of this course if to focus on the practical aspect of IT in a company whether it has its own IT system, on the cloud or hybrid. The scope covers Datacenter, Servers, Storage, Network & Security, Information Systems design and Build, Information Systems Operations, Application Landscape, Integration Layer, Procurement & Budget and building an internal Cloud. It includes an overview, best practices and pitfall and a series of practical use cases that illustrate real life scenarios

   b. **Prerequisites:** None

   c. **Selected Elective** for CCE students

6. **Educational objectives for the course**
   a. **Specific outcomes of instruction:**
   - Design and manage scalable data centers, including capacity planning, monitoring, and forecasting.
   - Configure and optimize physical and virtual servers, storage systems, and networks within technical and budget constraints.
   - Apply quality of service principles to design reliable networks adapted to various connectivity challenges.
   - Analyze business needs and propose IT solutions using product management and business analysis techniques.
   - Understand and implement enterprise applications and integration platforms to support business processes.
   - Manage IT procurement, budgeting, and hybrid cloud strategies with attention to cost control and vendor relationships.

   b. **PI addressed by the course:**

PI	1.2	1.3	6.3	6.4
Covered	x	x	x	x

Assessed	x	x	x	x

7. Brief list of topics to be covered

- Introduction to IT Infrastructure and Data Center Foundations – Overview of IT systems, data center components, and architecture principles. (2 lectures)
- Data Center Design, Capacity Planning, and Monitoring – Scalability, environmental control, and performance metrics. (2 lectures)
- Server Architecture: Physical and Virtualized Environments – Server types, virtualization technologies, and compute optimization. (3 lectures)
- Storage Systems and Management – SAN/NAS concepts, storage design, performance, and capacity planning. (3 lectures)
- Network Design and Quality of Service (QoS) – Interconnection, latency challenges, redundancy, and network reliability. (3 lectures)
- Business Analysis and IT Alignment – Understanding business needs, requirements gathering, and stakeholder analysis. (2 lectures)
- Product Management in IT Projects – Feature planning, roadmapping, and short/long-term IT strategy. (2 lectures)
- Enterprise Applications and the Application Landscape – ERP, CRM, HR systems, and their roles in business processes. (2 lectures)
- Integration Platforms and Middleware – APIs, service orchestration, and interoperability between systems. (2 lectures)
- IT Procurement and Vendor Management – Sourcing, contracts, evaluation criteria, and procurement lifecycle. (1 lecture)
- IT Budgeting and Cost Control – Forecasting, hybrid cloud financial impact, and cost monitoring tools. (1 lecture)
- Operations and Continuous IT Improvement – Monitoring, feedback loops, lifecycle management, and KPIs. (1 lecture)