






COMPUTER_S7_MAJ Fall Semester Graduate	Computer Engineering	6 credits Lab: 41.7% Final exam (3h): 58.3%
Prerequisite: S5 & S6 Computer lectures		

DITN_2501	Microprocessors	Language 
Lecture: 16	Tutorials: 18	Lab work: 16
<p>This advanced module allows the understanding of the different components of a system based on a microcontroller. The objective is reached using a guided-project using a STM32 controller and peripherals.</p> <ul style="list-style-type: none"> - Interruption/exception transfer mechanism: interruption types, vectorization, interruption masking and management. - Microcontroller peripherals: microcontroller architecture, peripherals memory, clock, timer, ADC, DAC, extern peripherals. - Link with C language. 		

DITN_2502	Object-oriented programming: JAVA	Language 
Lecture: 6	Tutorials: 14	
<p>The module focuses on the object-oriented programming basis using JAVA language. The learning is done through practice guided by the development of an application. This module is complementary to the S5 C language module.</p> <ul style="list-style-type: none"> - Classes, instances, references - Encapsulation, access - Inheritance, polymorphism - Error management, exceptions - Graphical interface, events management - Object-oriented design, design patterns 		

DITN_2506	Network fundamentals	Language 
Lecture: 6	Tutorials: 6	
<p>The course focuses on the design of communicating applications using a data transmission protocol. TCP/IP and internet network are the main targets.</p> <ul style="list-style-type: none"> - General ideas of communication protocols - OSI model, norms - Local networks, access, routing - TCP/IP protocol 		

DITN_2507	System programming	Language 
Lecture: 6	Tutorials: 6	
<p>The course focuses on programming system applications offering services to other applications. Communication between application is explained, together with mutiprocesses programming.</p> <ul style="list-style-type: none"> - Input and output at low level (open, clos, read, write, fctl) - Pipe, socket - Process creation (fork, exec) 		

DITN_2508	Lab work	Language 
		Lab work: 16
<p>The lab work consists in developing a data server accessible through the network. FTP server, HTTP, IRC.</p>		