

Teacher(s)	Bonaventure Olivier ;
Language :	English > French-friendly
Place of the course	Louvain-la-Neuve
Prerequisites	Required#: skills in computer networks as targeted in course LINFO1341
Main themes	• network architectures and the role of virtual networks • quality of service • provision of multicast • network reliability • principles of network management
Learning outcomes	At the end of this learning unit, the student is able to : Given the learning outcomes of the "Master in Computer Science and Engineering" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: • INFO1.1-3 • INFO2.2-4 • INFO5.2, INFO5.4-5 • INFO6.1, INFO6.4, INFO6.5 Given the learning outcomes of the "Master [120] in Computer Science" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: • SINF1.M1 • SINF2.2-4 • SINF5.2, SINF5.4-5 • SINF6.1, SINF6.4, SINF6.5 Students completing successfully this course will be able to • design, deploy and manage data networks; • explain the threats against networks and the defense strategies; • deploy mechanisms to ensure quality of service, security and reliability.
Evaluation methods	• Oral exam (65%) • Projects (20%) • Lab participation (5%) • Network debug lab (10%) The project and labs are only organized once. They cannot be repeated except for students having a long absence approved by the president of the jury. Generative AI software such as chatGPT, GitHub copilot, ... is discouraged for the projects because they do not allow the students to correctly learn. During the evaluation the students need to document any usage of generative AI and be able to precisely explain justify any of the configuration lines they propose. A failure to do so can result in a failure of the evaluation. In addition, external sources of information must be systematically cited in compliance with bibliographic referencing standards.
Teaching methods	• Inverted clasroom • Network design and management project in small groups
Content	• BGP • Traffic control in IP networks • IP Multicast • MultiProtocol Label Switching • BGP/MPLS VPNs • Evolution of the Internet architecture
Inline resources	https://moodle.uclouvain.be/course/view.php?id=2046

Bibliography	Slides available on moodle reference articles available on moodle
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Computer Science and Engineering	INFO2M	5		
Master [120] in Computer Science	SINF2M	5		