NETWORK ENGINEERING AND SECURITY (BS)

The BS in Network Engineering and Security focuses on the theory and practice of designing, deploying and managing both wired and wireless networks technologies, including broadband Internet access technologies, interconnection technologies, network convergence, and network security.

Program Requirements	Quarter Hours
Liberal Studies Requirement	76
Major Requirements	84
Open Electives	32
Total hours required	**192**

Learning Outcomes

Students will be able to:

- Describe and demonstrate how data packets are addressed and forwarded through switches, routers, and firewalls.
- Compare and contrast different wide-area network (WAN) technologies to support enterprise network requirements.
- Compare and configure internal gateway routing protocols (RIP, OSPF, EIGRP) that dynamically determine data paths through networks with unreliable components.
- Define and allocate IPv4 and IPv6 address subnets to satisfy network requirements.
- Describe and contrast techniques for making use of multiple redundant paths in switched and routed networks.
- Implement firewall technologies to enforce a given access policy and assess its efficiency.
- Identify and analyze security threats in network implementations, propose remedies and prioritize action plans.

Liberal Studies Requirements

Honors program requirements can be found in the individual Colleges & Schools section of the University Catalog. Select the appropriate college or school, followed by Undergraduate Academics and scroll down.

First Year Program		Hours
Chicago Quarter		
LSP 110 or LSP 111	DISCOVER CHICAGO or EXPLORE CHICAGO	4
Focal Point		
LSP 112	FOCAL POINT SEMINAR	4
Writing		
WRD 103	COMPOSITION AND RHETORIC I [1]	4
WRD 104	COMPOSITION AND RHETORIC II [1]	4
Quantitative Reasoning		
Not Required		
Sophomore Year		
Race, Power, and Resistance		
LSP 200	SEMINAR ON RACE, POWER, AND RESISTANCE	4

Junior Year	
Experiential Learning	
Required	4
Senior Year	
Capstone	
Required in major [1]	

[1] Students must earn a C- or better.

Learning Domains

Arts and Literature (AL) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/arts-and-literature/)
- 3 Courses Required

Historical Inquiry (HI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/historical-inquiry/)
- 2 Courses Required

Math and Computing (MC) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/math-and-computing/)
- Not Required

Philosophical Inquiry (PI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/philosophical-inquiry/)
- 2 Courses Required (See Note Below)

Religious Dimensions (RD) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/religious-dimensions/)
- 2 Courses Required (See Note Below)

Scientific Inquiry (SI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/scientific-inquiry/)
- 1 Lab Course Required

Social, Cultural, and Behavioral Inquiry (SCBI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/social-cultural-and-behavioral-inquiry/)
- 3 Courses Required

Notes

Students must take one of the following ethics courses:

Course	Title	Quarter Hours
CSC 208	ETHICS IN TECHNOLOGY (PI)	4
IT 228	ETHICS IN COMPUTER GAMES AND CINEMA (PI)	4
PHL/MGT 248	BUSINESS ETHICS (PI)	4
REL/MGT 228	BUSINESS, ETHICS AND SOCIETY (RD)	4

Specified required courses within Liberal Studies may have grade minimums (e.g. C- or better). Please consult your advisor or your college and major requirements.

Courses offered in the student's primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the Experiential Learning requirement.

In meeting learning domain requirements, no more than one course that is outside the student's major and is cross-listed with a course within the student's major, can be applied to count for LSP domain credit. This policy does not apply to those who are pursuing a double major or earning BFA or BM degrees.

Major Requirements

First Year

Course	Title	Quarter Hours
CSC 241	INTRODUCTION TO COMPUTER SCIENCE I	4
or CSC 243	PYTHON FOR PROGRAMMERS	
or IT 211	INTRODUCTION TO APPLIED PROGRAMMING	
IT 130	INTRODUCTORY COMPUTING FOR THE WEB	4
IT 223	DATA ANALYSIS	4
IT 240	INTRODUCTION TO DATABASES	4
IT 263	APPLIED NETWORKS AND SECURITY	4

Second Year

Course	Title	Quarter Hours
CMN 104	PUBLIC SPEAKING	4
or CMNS 212	EFFECTIVE COMMUNICATION IN TEAMS AND SMALL GROUPS	
CSEC 340	FUNDAMENTALS OF INFORMATION ASSURANCE (FORMERLY CNS 340)	4
NET 311	COMPUTERS IN TELECOMMUNICATIONS SYSTEMS	4
NET 362	PRINCIPLES OF DATA COMMUNICATIONS	4
NET 363	INTRODUCTION TO LOCAL AREA NETWORKS	4
WRD 204	TECHNICAL WRITING	4

Third Year

Course	Title	Quarter Hours
CSEC 378	HOST BASED SECURITY (FORMERLY CNS 378)	4
NET 364	VOICE COMMUNICATIONS TECHNOLOGIES	4
NET 365	NETWORK INTERCONNECTION TECHNOLOGIES	4
NET 371	WIRELESS COMMUNICATIONS NETWORKS	4
NET 372	WAN SERVICES	4
NET 377	FUNDAMENTALS OF NETWORK SECURITY	4

Fourth Year

Course	Title	Quarter Hours
Fourth Year		
NET 375	NETWORK PROTOCOLS	4
NET 376	NETWORK PROJECT	4
Eight (8) credit hours of Major Electives		8

Major Electives

Major Electives can be chosen from any 300 level NET or CSEC courses (https://www.cdm.depaul.edu/academics/Pages/CourseCatalog.aspx).

Students must earn a grade of C- or higher in all major elective courses.

Open Electives

Open Elective credit hours are required to meet the minimum graduation requirements of 192 hours. Open Electives may be taken from any unit at DePaul.

Degree Requirements

Students in this degree must meet the following requirements:

- Complete a minimum of 192 credit hours (generally 48 courses)
- Earn a grade of C- or higher in WRD 103, WRD 104, and all Major and Minor courses
- Earn a grade of D or higher in all other Liberal Studies and Open Elective courses
- Maintain a cumulative GPA of 2.0 or higher

Program Combination Restrictions

Students pursuing the BS in Network Engineering and Security are forbidden from pursuing the Minor in Network Technologies.