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.

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>First Year Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicago Quarter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSP 110 or LSP 111</td>
<td>DISCOVER CHICAGO or EXPLORE CHICAGO</td>
<td>4</td>
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<tr>
<td>Focal Point</td>
<td></td>
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<tr>
<td>LSP 112</td>
<td>FOCAL POINT SEMINAR</td>
<td>4</td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRD 103</td>
<td>COMPOSITION AND RHETORIC I</td>
<td>4</td>
</tr>
<tr>
<td>WRD 104</td>
<td>COMPOSITION AND RHETORIC II</td>
<td>4</td>
</tr>
<tr>
<td>Quantitative Reasoning &amp; Technological Literacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Required</td>
<td></td>
<td></td>
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<tr>
<td>Sophomore Year</td>
<td></td>
<td></td>
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<tr>
<td>Multiculturalism in the US</td>
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<tr>
<td>LSP 200</td>
<td>SEMINAR ON MULTICULTURALISM IN THE UNITED STATES</td>
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<tr>
<td>Junior Year</td>
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<tr>
<td>Experiential Learning</td>
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<tr>
<td>Required</td>
<td>4</td>
<td></td>
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<tr>
<td>Senior Year</td>
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<tr>
<td>Capstone</td>
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</table>
| NET 376 | NETWORK PROJECT (FORMERLY TDC 376) | 4

Notes

Students must take one of the following ethics courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Quarter Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 208</td>
<td>ETHICS IN TECHNOLOGY (PI)</td>
<td>4</td>
</tr>
<tr>
<td>IT 228</td>
<td>ETHICS IN COMPUTER GAMES AND CINEMA (PI)</td>
<td>4</td>
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<tr>
<td>PHL/MGT 248</td>
<td>BUSINESS ETHICS (PI)</td>
<td>4</td>
</tr>
<tr>
<td>REL/MGT 228</td>
<td>BUSINESS, ETHICS AND SOCIETY (RD)</td>
<td>4</td>
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</table>

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**

**Course Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Quarter Hours</th>
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</thead>
<tbody>
<tr>
<td>CSEC 340</td>
<td>FUNDAMENTALS OF INFORMATION ASSURANCE (FORMERLY CNS 340)</td>
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<tr>
<td>CSEC 378</td>
<td>HOST BASED SECURITY (FORMERLY CNS 378)</td>
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<tr>
<td>CSC 241</td>
<td>INTRODUCTION TO COMPUTER SCIENCE I</td>
<td>4</td>
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<tr>
<td>or CSC 243</td>
<td>PYTHON FOR PROGRAMMERS</td>
<td></td>
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<tr>
<td>or IT 211</td>
<td>INTRODUCTION TO APPLIED PROGRAMMING</td>
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<tr>
<td>IT 130</td>
<td>INTRODUCTORY COMPUTING FOR THE WEB</td>
<td>4</td>
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<tr>
<td>IT 223</td>
<td>DATA ANALYSIS</td>
<td>4</td>
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<tr>
<td>IT 240</td>
<td>INTRODUCTION TO DATABASES</td>
<td>4</td>
</tr>
<tr>
<td>IT 263</td>
<td>APPLIED NETWORKS AND SECURITY</td>
<td>4</td>
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<tr>
<td>ORGC 212</td>
<td>SMALL GROUP COMMUNICATION</td>
<td>4</td>
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<td>or CMN 104</td>
<td>PUBLIC SPEAKING</td>
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<tr>
<td>NET 311</td>
<td>COMPUTERS IN TELECOMMUNICATIONS SYSTEMS (FORMERLY TDC 311)</td>
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<tr>
<td>NET 362</td>
<td>PRINCIPLES OF DATA COMMUNICATIONS (FORMERLY TDC 362)</td>
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<tr>
<td>NET 363</td>
<td>INTRODUCTION TO LOCAL AREA NETWORKS (FORMERLY TDC 363)</td>
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<tr>
<td>NET 364</td>
<td>VOICE COMMUNICATIONS TECHNOLOGIES (FORMERLY TDC 364)</td>
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<tr>
<td>NET 365</td>
<td>NETWORK INTERCONNECTION TECHNOLOGIES (FORMERLY TDC 365)</td>
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<tr>
<td>NET 371</td>
<td>WIRELESS COMMUNICATIONS NETWORKS (FORMERLY TDC 371)</td>
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<tr>
<td>NET 372</td>
<td>WAN SERVICES (FORMERLY TDC 372)</td>
<td>4</td>
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<tr>
<td>NET 375</td>
<td>NETWORK PROTOCOLS (FORMERLY TDC 375)</td>
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<td>NET 376</td>
<td>NETWORK PROJECT (FORMERLY TDC 376)</td>
<td>4</td>
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<tr>
<td>NET 377</td>
<td>FUNDAMENTALS OF NETWORK SECURITY (FORMERLY TDC 377)</td>
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<tr>
<td>WRD 204</td>
<td>TECHNICAL WRITING</td>
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</table>

Select eight (8) credit hours of Major Field Electives¹

¹ Major Electives can be chosen from any 300-level NET or CSEC courses. Students must earn a grade of C- or higher in all major elective courses.

**Open Electives**

Open elective credit also is required to meet the minimum graduation requirement of 192 hours.

See [www.cdm.depaul.edu](http://www.cdm.depaul.edu) to see sample schedule of course requirements on a year-by-year basis.

**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