

# INFORMATION AND COMMUNICATION TECHNOLOGY (CYBER DEFENSE) - BACHELOR OF INFORMATION AND COMMUNICATION TECHNOLOGY

## A Suggested Plan of Study for Students

These roadmaps assume student placement in MATH 1220G College Algebra or higher. The contents and order of this roadmap may vary depending on initial student placement in mathematics and previous coursework. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring and summer semester and may be subject to modification or change.

All Information and Communication Technology requirements must be completed with a C- or higher grade.

## Pathway: 4-year Bachelor's Degree

| First Year  |   |              |
|---|---|--------------|
| <b>Fall</b>   |   |              |
| ICT 141   | IT Essentials I: A+ Certification Training<br>Focused on the Hardware Exam  | 3            |
| Elective Course <sup>4</sup>                                  |   | 3            |
| General Education Area I <sup>1</sup>                         |   | 4            |
| General Education Area II (MATH 1220G or Higher) <sup>1</sup> |   | 3-4          |
| General Education Area IV <sup>1</sup>                        |   | 3            |
| <b>Credits</b>  |   | <b>16-17</b> |
| <b>Spring</b>   |   |              |
| ICT 145   | Network Essentials: N+ Certification Training                               | 3            |
| ICT 161   | IT Essentials II: A+ Certification Training<br>focused on the Software exam | 3            |
| General Education Area I <sup>1</sup>                         |   | 3            |
| General Education Area III <sup>1</sup>                       |   | 4            |
| General Education Area V <sup>1</sup>                         |   | 3            |
| <b>Credits</b>  |   | <b>16</b>    |
| <b>Second Year</b>  |   |              |
| <b>Fall</b>   |   |              |
| ICT 152   | Java Programming  | 3            |
| ICT 220   | Discrete Math and Its Relationship to<br>Information Technology             | 3            |
| General Education Area I <sup>1</sup>                         |   | 3            |
| General Education Area VI <sup>1</sup>                        |   | 3            |
| Elective Course <sup>4</sup>                                  |   | 3            |
| <b>Credits</b>  |   | <b>15</b>    |
| <b>Spring</b>   |   |              |
| ICT 267   | Information Security+ Certification Preparation                             | 3            |
| ICT 280   | Introduction to Web Development   | 3            |
| General Education Area III or IV <sup>1</sup>                 |   | 3-4          |
| General Education Elective <sup>1</sup>                       |   | 3            |

|   |   |                |
|---|---|----------------|
| Elective Course <sup>4</sup>  |   | 3              |
| <b>Credits</b>  |   | <b>15-16</b>   |
| <b>Third Year</b>   |   |                |
| <b>Fall</b>   |   |                |
| ICT 360   | Operating Systems for ICT   | 3              |
| ICT 377   | Computer Networking I   | 3              |
| Elective Course <sup>4</sup>  |   | 3              |
| Elective Course <sup>4</sup>  |   | 3              |
| Elective Course <sup>4</sup>  |   | 3              |
| <b>Credits</b>  |   | <b>15</b>      |
| <b>Spring</b>   |   |                |
| ICT 320   | Introduction to Internet Protocols                                      | 3              |
| ICT 339   | Introduction to Digital Forensics and Incident<br>Response <sup>3</sup> | 3              |
| ICT 350V  | Introduction to Personal Computer Security<br>and Privacy <sup>2</sup>  | 3              |
| ICT 355   | Linux System Administration   | 3              |
| ICT 364   | Windows Enterprise Administration                                       | 3              |
| <b>Credits</b>  |   | <b>15</b>      |
| <b>Fourth Year</b>  |   |                |
| <b>Fall</b>   |   |                |
| ICT 362   | Software Technology II  | 3              |
| ICT 435   | Senior Project  | 3              |
| ICT 439   | Advanced Digital Forensics and Incident<br>Response <sup>3</sup>        | 3              |
| ICT 450   | Ethical Hacking   | 3              |
| ICT 487   | Data Security <sup>3</sup>  | 3              |
| <b>Credits</b>  |   | <b>15</b>      |
| <b>Spring</b>   |   |                |
| ICT 457   | Introduction to Information Security<br>Technology                      | 3              |
| ICT 467   | Communication Network Security <sup>3</sup>                             | 3              |
| Electives to bring total to 120 credits (if necessary) <sup>4</sup> |   | 1-0            |
| Viewing a Wider World <sup>2</sup>                                  |   | 6              |
| <b>Credits</b>  |   | <b>13-12</b>   |
| <b>Total Credits</b>  |   | <b>120-121</b> |

<sup>1</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section of the catalog for a complete list of courses. The number of credits provided assumes MATH 1220G College Algebra placement or higher.

<sup>2</sup> The ICT 350V Introduction to Personal Computer Security and Privacy course is part of the required curriculum for the ICT degree. It does not count towards the Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) Requirements (6 credits). Visit the c (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) atalog's Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section for a complete list of Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) Requirements. These courses will form part of the required 48 upper-level credit hours taken as part of the ICT program at NMSU.

<sup>3</sup> The **provided selection of Technical Electives** will lead to an ICT concentration on **Cyber Defense**, one of the three concentration options. See the NMSU Catalog for information on other concentration options. Concentrations are *optional* educational sequences that students may choose to focus on in IT-related areas. A Technical

Electives pre-approved list for each concentration is provided in this catalog.

<sup>4</sup> **Elective** credit may vary based on prerequisites, dual credit, AP credit, double majors, or minor coursework. The amount indicated in the requirements list is needed to bring the total to 120 credits and may appear in variable form based on the degree. However, students may need to complete more or less on a case-by-case basis, and students should discuss elective requirements with their academic advisor.

## Pathway: 2+2 Bachelor's Degree

| First Year  |  | Credits    |
|---|--|------------|
| Elective Credits (include General Education credits) <sup>1,4</sup> |  | 30         |
| <b>Credits</b>  |  | <b>30</b>  |
| Second Year   |  |            |
| Elective Credits (include General Education credits) <sup>1,4</sup> |  | 33         |
| <b>Credits</b>  |  | <b>33</b>  |
| Third Year  |  |            |
| Fall  |  |            |
| ICT 141   | IT Essentials I: A+ Certification Training<br>Focused on the Hardware Exam | 3          |
| ICT 152   | Java Programming   | 3          |
| ICT 220   | Discrete Math and Its Relationship to<br>Information Technology            | 3          |
| ICT 360   | Operating Systems for ICT  | 3          |
| ICT 377   | Computer Networking I  | 3          |
| <b>Credits</b>  |  | <b>15</b>  |
| Spring  |  |            |
| ICT 320   | Introduction to Internet Protocols   | 3          |
| ICT 339   | Introduction to Digital Forensics and Incident<br>Response <sup>3</sup>    | 3          |
| ICT 350V  | Introduction to Personal Computer Security<br>and Privacy <sup>2</sup>     | 3          |
| ICT 355   | Linux System Administration  | 3          |
| ICT 364   | Windows Enterprise Administration  | 3          |
| <b>Credits</b>  |  | <b>15</b>  |
| Fourth Year   |  |            |
| Fall  |  |            |
| ICT 362   | Software Technology II   | 3          |
| ICT 435   | Senior Project   | 3          |
| ICT 439   | Advanced Digital Forensics and Incident<br>Response <sup>3</sup>           | 3          |
| ICT 450   | Ethical Hacking  | 3          |
| ICT 487   | Data Security <sup>3</sup>   | 3          |
| <b>Credits</b>  |  | <b>15</b>  |
| Spring  |  |            |
| ICT 457   | Introduction to Information Security<br>Technology                         | 3          |
| ICT 467   | Communication Network Security <sup>3</sup>                                | 3          |
| Viewing a Wider World <sup>2</sup>                                  |  | 6          |
| <b>Credits</b>  |  | <b>12</b>  |
| <b>Total Credits</b>  |  | <b>120</b> |

ICT degree. It does not count towards the Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) Requirements (6 credits). Visit the catalog's Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section for a complete list of Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) Requirements. These courses will form part of the required 48 upper-level credit hours taken as part of the ICT program at NMSU.

<sup>3</sup> The **provided selection of Technical Electives** will lead to an ICT concentration on **Cyber Defense**, one of the three concentration options. See the NMSU Catalog for information on other concentration options. Concentrations are *optional* educational sequences that students may choose to focus on in IT-related areas. A Technical Electives pre-approved list for each concentration is provided in this catalog.

<sup>4</sup> **Elective** credit may vary based on prerequisites, dual credit, AP credit, double majors, or minor coursework. The amount indicated in the requirements list is needed to bring the total to 120 credits and may appear in variable form based on the degree. However, students may need to complete more or less on a case-by-case basis, and students should discuss elective requirements with their academic advisor.

<sup>1</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section of the catalog for a complete list of courses. The number of credits provided assumes MATH 1220G College Algebra placement or higher.

<sup>2</sup> The ICT 350V Introduction to Personal Computer Security and Privacy course is part of the required curriculum for the