

COMPUTER TECHNOLOGY

The Computer Technology Program at NMSU Grants provides its graduates with an excellent understanding of the world of computers from hardware, software, and networking perspectives. Giving graduates a pathway to their career as computer and network technicians in a constantly changing and expanding industry. This program is able to be completed entirely online with the option to utilize face to face labs as well. This programs provides a pathway from a Computer Technology Certificate into the Associate of Applied Science in Computer Technology into the online Bachelor of Information Communication Technology at NMSU Las Cruces.

Computer Technology - Associate of Applied Science (<https://catalogs.nmsu.edu/grants/degree-certificate-programs/computer-technology/computer-technology-associate-applied-science/>)

Computer Technology - Certificate (<https://catalogs.nmsu.edu/grants/degree-certificate-programs/computer-technology/computer-technology-certificate/>)

OECS 105. Introduction to Information Technology 3 Credits (3)

Examination of information systems and their impact on commerce, education, and personal activities. Utilization of productivity tools for communication, data analysis, information management and decision-making.

Learning Outcomes

1. Describe the social impact of information literacy and systems in relation to commerce, education, and personal activities.
2. Explain how to use the information resources legally, safely, and responsibly in relation to ethical, security, and privacy issues.
3. Evaluate bias, accuracy and relevance of information and its sources.
4. Use productivity tools for communications, data analysis, information management and decision-making.
5. Describe and use current information systems and technologies.

OECS 110. Introduction to Power Point 1-3 Credits (1-3)

An introduction to Power Point software to develop business presentations. Includes concepts of basic presentation methods and graphic design principles. Students will create and deliver presentations using text, charts, digitized images, and sound. Restricted to Community Colleges campuses only.

OECS 128. Operating Systems Linux/Unix 3 Credits (3)

Installation, configuration, and use of Linux/Unix operating system software and utilities including hardware management, file management, use of command line, and scripting. Restricted to: Community Colleges only.

OECS 145. Mobile Application Development 1-3 Credits (1-3)

Introduction to elements of mobile application coding including concepts, design strategies, tools needed to create, test and deploy applications for mobile devices. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

OECS 155. Special Topics - Introductory Computer Technology 0.5-4 Credits (.5-4)

Topics to be announced in the Schedule of Classes. May be repeated up to 8 credits.

OECS 192. C++ Programming I 3 Credits (3)

Development of skills in programming using the C++ programming language. Restricted to: Community Colleges only.

OECS 204. Linux Operating System 1-3 Credits

Install and configure the Linux operating system on X86 systems. Covers issues involved in maintaining operating system, networking, creating and managing users, and installing and updating software. General procedures for working with operating system includes maintaining disk space, preserving system security, and other related topics. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

OECS 208. Internet Applications 1-3 Credits

Survey of the Internet to include e-mail, file transfer, current search techniques, the World Wide Web and basic Web page development. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

OECS 209. Computer Graphic Arts 1-3 Credits

Basic graphics composition using computer programs to include editing and manipulating graphic images, clip-art, and printing of pictures. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes.

Prerequisite: OECS 105, BCIS 1110, or OECS 101.

OECS 211. Word Processing Applications 1-3 Credits

Basic word processing to include composing, editing, formatting, and printing of documents. May be repeated under different subtitles listed in the Schedule of Classes for a maximum of 6 credits.

Prerequisites: BCIS 1110 or OECS 105.

OECS 215. Spreadsheet Applications 1-3 Credits

Use of spreadsheets to include graphics and business applications. May be repeated for a maximum of 6 credits.

Prerequisites: BCIS 1110 or OECS 105.

OECS 220. Database Application and Design 1-3 Credits

Creating, sorting, and searching of single and multfile databases to include report generation and programming database commands. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes. Restricted to: Community Colleges only.

Prerequisite(s): BCIS 1110 OR E T 120 OR E T 122 OR OECS 105.

OECS 221. Internship I 1-3 Credits

Work experience that directly relates to a student's major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OECS majors. Graded: S/U Grading (S/U, Audit).

Restricted to Community Colleges campuses only.

Prerequisite(s): Consent of instructor.

OECS 222. Internship II 1-3 Credits

Continuation of OECS 221. Each credit requires specified number of hours of on-the-job work experience. May be repeated up to 3 credits. Consent

of Instructor required. Restricted to: OECS majors. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.

Prerequisite(s): OECS 221 and consent of instructor.

OECS 230. Data Communications and Networks I

1-3 Credits

Definition of data communication; survey of hardware applications and teleprocessor software; examination and design of networks. May be repeated for a maximum of 6 credits.

Prerequisite: OECS 185.

OECS 234. Linux Server

3-4 Credits (3-4)

This course addresses the implementation and support needs of IT professionals that are planning to deploy and support Linux Server(s). It provides in-depth, hands-on training for planning, implementation, management and support of Linux networking services. May be repeated up to 8 credits.

Prerequisite(s)/Corequisite(s): OECS 204. Restricted to: OECS majors. Restricted to Community Colleges campuses only.

OECS 235. Structured Query Language (SQL)

1-3 Credits

Installation, configuration, administration, and troubleshooting of SQL client/server database management system. May be repeated up to 3 credits.

Prerequisite(s)/Corequisite(s): OECS 220. Restricted to Community Colleges campuses only.

OECS 237. Windows Server

3-4 Credits (3-4)

This course addresses the implementation and support needs of IT professionals that are planning to deploy and support Microsoft Windows Server Active Directory Domain Services in medium to large businesses. It provides in-depth, hands-on training for Information Technology (IT) professionals responsible for the planning, implementation, management, and support of Windows Active Directory services. May be repeated up to 4 credits.

Prerequisite(s)/Corequisite(s): OECS 207. Restricted to Community Colleges campuses only.

OECS 253. Applied Data Analysis and Management

3 Credits (3)

Applied use of advanced spreadsheet tools for data analysis and database tools for data and information management. Connect emerging topics in business to tools used in analyzing data and making raw data useful for business decision making.

Prerequisite: BCIS 1110.

Learning Outcomes

1. Manage, integrate, and analyze data with data tools.
2. Generate and summarize data.
3. Use tools for business projections, comparisons, trends, and informed decisions.
4. Create advanced queries and enhance table design.
5. Use form tools and create custom forms.
6. Use automation tools for efficiency.
7. Secure and maintain data.
8. Plan, research, create, and revise spreadsheets and databases for a specific business application.
9. Discuss emerging topics in business related to data analysis and management.

OECS 255. Special Topics

1-4 Credits

Topics to be announced in the Schedule of Classes.

OECS 261. Introduction to Networks

3-4 Credits (3-4)

Introduction to networking principles including the practical and conceptual skills for understanding basic networking, planning and designing networks, implementing IP addressing schemes, examining the OSI and TCP/IP layers, and performing basic configurations for routers and switches. Aligns to the first course of the Cisco Networking Academy CCNA curriculum. Restricted to Community Colleges campuses only.

OECS 262. Essentials of Routing and Switching

3-4 Credits (3-4)

Examination of the architecture, components, and operations of routers and switches in a small network. Student will learn how to configure, verify and troubleshoot: routers and switches, static routing, default routing, VLANs, and ACLs. Aligns to the second course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.

Prerequisite(s)/Corequisite(s): OECS 261. Restricted to Community Colleges campuses only.

OECS 263. Network Fundamentals

3-4 Credits (3-4)

Fundamentals of networking architecture, components, and operations including practical and conceptual skills using routers and switches. Student will learn how to configure, verify and troubleshoot static routing, default routing, VLANs, and ACLs. This course aligns to the third course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.

Prerequisite(s)/Corequisite(s): OECS 262. Restricted to Community Colleges campuses only.

OECS 264. Network Routing Protocols

3-4 Credits (3-4)

Fundamentals of routing protocols for troubleshooting advanced network operations. Covers common networking issues such as RIP, OSPF, and EIGRP for IPv4 and IPv6 networks. This course aligns to the fourth course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.

Prerequisite(s)/Corequisite(s): OECS 263. Restricted to Community Colleges campuses only.

OECS 269. Network Security

3-4 Credits (3-4)

Fundamentals of design and implementation of network security solutions that will reduce the risk of system vulnerability. May be repeated up to 8 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): OECS 204 or OECS 207 or OECS 261 or consent of instructor.

OECS 275. PC Maintenance and Repair II

1-3 Credits

Continuation of OECS 185. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): OECS 185.

OECS 290. Computer Technology Capstone

1-3 Credits

Refines skills learned in the OECS program. Culminates in a review and practice of advanced software applications. May be repeated up to 3 credits. Restricted to: OECS & OECT majors. Restricted to Community Colleges campuses only.

Prerequisite(s): (OECS 125, OECS 128, OECS 207, OR OECS 203) AND (OECS 185 OR E T 283).

OECS 299. Independent Study**1-3 Credits**

Specific subjects to be determined based on need. Restricted to:
Community Colleges only.

Program Learning Outcomes

1. Students will demonstrate an understanding of industry standard troubleshooting processes for computer software and hardware issues.
2. Students will display fluency in utilizing multiple operating systems (Windows, MacOS, Linux).
3. Students will develop and implement conceptual and physical network designs.
4. Students will provide technical support in a professional manner.
5. Students will acquire the courses necessary to transfer into the Bachelors of Information and Communication Technology at NMSU.

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