The University Senate of Michigan Technological University
Proposal 21-24

Changing the Degree Title from
Computer Network and System Administration
to
Information Technology

Basic Program Information

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Program/Degree type: B.S.

Program Title: Bachelor of Science in Information Technology

Planned Implementation Date: Fall 2024

Program location/modality: Face to Face

Target student population: new and existing student population

General description and characteristics of program[1]

This proposal seeks to change the Bachelor of Science (BS) degree title from Computer Network and System Administration (CNSA) to Information Technology (IT).

The BS in CNSA program was founded in 2003 and has evolved into a multidisciplinary curriculum to provide students with a comprehensive and advanced education in information technology, particularly emphasizing the real-world and practical application of technology related to system and network administration. The CNSA program is currently hosted at the Applied Computing department within the College of Computing.

Over the past several years, the CNSA degree program has witnessed a continuous decrease in enrollment. Faculty members and administrators have undertaken various initiatives to rejuvenate the program, including updating course content with current topics relevant to

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[1] Portions of the wording in this proposal are drawn from existing program related documents at Michigan Technological University, including but not limited to the program webpages. In all cases these are used with permission from the appropriate parties.

industry trends, refurbishing hands-on labs with physical networking equipment and virtualization services, and additional marketing and promotion activities. This proposal is the continuation of current efforts to expand program awareness and increase enrollment. The current name of "Computer Network and System Administration" is lengthy and the acronym CNSA is not easy to remember. In comparison, the name "Information Technology (IT)" is self-explanatory, a recognized industry standard, and easier to market and promote to potential students and industry recruiters.
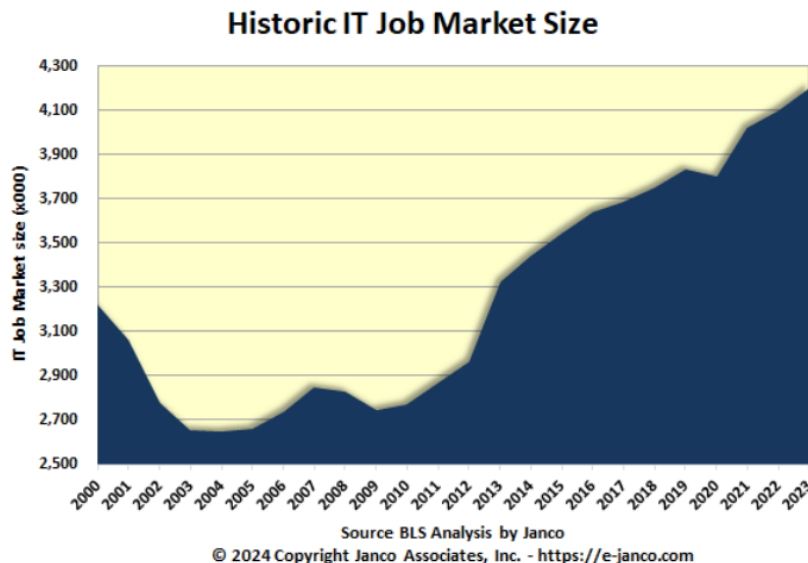
The CNSA program possesses several competitive advantages, including a hands-on curriculum, excellent teaching quality, committed faculty members, strong industry connections, and loyal alumni support. Our intention is to rebrand the program while preserving these existing strengths.

Rationale

Job market trend

According to a 2023 study report [2], the IT job market will still be experiencing a substantial growth, primarily propelled by the widespread digital transformation occurring across various sectors. Recent data reveals significant employment expansion in key domains such as cybersecurity, cloud computing, and data analysis. Furthermore, there is a remarkable surge in demand for positions associated with artificial intelligence and machine learning.

In the United States, there are more than 4 million individuals employed as IT professionals [3]. The prospects of the IT job market are closely linked to the overall employment trends within the nation. Below is a chart illustrating the historical size of the IT job market.

Historic IT Job Market Size

Source BLS Analysis by Janco
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[2] Emerging Trends in IT Recruitment: Navigating the Evolving Job Market
[3] IT Job Market and US National Employment Data

Enrollment trend
Despite the adverse effects of the pandemic, the period from 2017 to 2022 witnessed a remarkable 34 percent increase in the nationwide enrollment of students pursuing four-year degrees in computer and information sciences and related fields, reaching an approximate total of 573,000 students, as reported by the National Student Clearinghouse Research Center [4]. In Fall 2023, computer and information sciences programs across the nation experienced notable expansion in enrollment, witnessing respective increases of 10.7 percent for bachelor's degrees and 13.7 percent for master's degrees [5].

Other Name Options
Several alternative names have been considered in addition to "Information Technology." These include options like Network Administration (NA), Network and Infrastructure Administration (NIA), Network and Infrastructure Management (NIM), Cyber Infrastructure Management (CIM), and Cyber Infrastructure Administration (CIA).

After extensive discussions and consultations with various stakeholders, including the university's enrollment office, marketing teams, current and potential students, alumni, industry partners, and external advisors, "Information Technology" has emerged as the most self-explanatory and easily comprehensible name for both high school students and potential employers.

Related programs: within MTU and at other institutions

Related Programs at Michigan Tech
While there is currently no other dedicated undergraduate major exclusively centered on IT on our campus, Michigan Tech does offer various related computing degree programs through several departments and colleges. The following is a compilation of these degree programs:

- BS in Computer Science (CS) from the CS department
- BS in Cybersecurity from the College of Computing
- BS in Management Information Systems (MIS) from the College of Business

These computing degree programs exhibit clear distinctions. For instance, IT, CS, MIS, and Cybersecurity degree programs undergo different program criteria during ABET accreditation.

Information Technology (IT) centers on the practical application of technology for business purposes, including skills in network administration and infrastructure management. Management Information Systems (MIS) integrates technology and business strategy, emphasizing data analysis and decision support. Cybersecurity specializes in safeguarding computer systems and data from cyber threats, involving skills in intrusion detection, cryptography, and security policy. Computer Science (CS) focuses on the theoretical and scientific aspects of computing, emphasizing programming, algorithm design, and computer theory. Each field has unique skill sets and career paths, catering to various aspects of the technology industry.

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[4] Current Term Enrollment Estimates: Fall 2023
[5] A Close Look At Higher Education Enrollment In Fall 2023

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Related programs at Michigan and Nationwide

There are numerous degree programs in the field of IT, Information Systems, Network Administration in Michigan and nationwide. Below are just a few examples.

Michigan
BS Information Science, Michigan State University
BS Information, University of Michigan Ann Arbor
BS Information Technology, Wayne State University
BS Information Technology, Oakland University
BS Information Technology, Central Michigan University
BS Information Technology, Grand Valley State University
BS Information Technology, Lawrence Tech University
BS Information Technology and Informatics, University of Michigan at Flint
BS Information Technology, Eastern Michigan University
BS Computer Information Technology, Ferris State University
BS Information Assurance and Cyber Defense, Northern Michigan University
BS Computer Networking, Lake Superior State University
BS Network Management and Security, Davenport University

Wisconsin
BS Information Science and Technology (online), UW System
BS Information Technology, UW-Whitewater
BS Information Science and Technology, UW-Milwaukee
BS Computer Networking and Information Technology, UW-Stout, also BS Information and Communication Technologies
BS Information Systems, Marquette University
BS Information Technology, Carroll University

Minnesota
BS Information Systems and Technology, UMN-Duluth
BS Information Technology Management, UMN-Crookston
BS Information Technology, St. Mary's University
BS Computer Information Technology, Metro State University
BS Information Technology Infrastructure, U. Minnesota

Illinois
BS Information Technology, DePaul University
BS Information Technology, Loyola University of Chicago
BS Information Technology and Networking (online), DeVry University
BS Information Technology and Management, Illinois Institute of Technology, also BS in Business and Information Technology, BS in Applied Cybersecurity and Information Technology
BS Computer Information Technology, Eastern Illinois University
BS Information Technology, SIU-Carbondale
BS Information Technology, Northeastern Illinois University
BS Information Systems, Western Illinois University

Nationwide
BS IT, Capella University
BS IT, Rensselaer University
BS IT, Colorado Christian University, and many other IT programs in the nation
BS Computing and Information Technologies, Rochester Institute of Technology

BS Computer Information Technology, Purdue Northwest
BS Networking, Strayer University
BS Network Administration, American National University
BS Computer Networking, Herzing University
BS Computer Networking & Cybersecurity, Champlain College
BS Network and Security Administration, Dakota State University
BS Network and System Administration, Edinboro University
BS Cybersecurity and Network Engineering, New England Institute of Technology
BS Cybersecurity and Network Administration, New York School of Career and Applied Studies
BS Network Administration and Engineering Technology, Pennsylvania College of Technology
BS Computer Information Systems, Southern New Hampshire University
And many more.

Projected Enrollment

Michigan Tech is strategically positioned to successfully offer this IT program. Firstly, our institution boasts a robust foundation in IT and computing education and research endeavors. The cost of rebranding an existing degree program is relatively economical. Secondly, the introduction of this new name complements our suite of computing programs, enhancing our appeal to prospective students. Lastly, this program will effectively leverage the existing strengths within the CNSA program and the College of Computing. The following table is the enrollment projection based on prior experience from the BS in Cybersecurity degree program.

New Enrollment in Year 1	New Enrollment in Year 2	New Enrollment in Year 3	Total New Enrollment in three years
20	30	40	90

Specialized Accreditation Requirements

The CNSA program successfully completed the ABET site visit in Fall 2023, receiving no shortcomings. We anticipate that the program will be reaccredited by ABET CAC under general criteria in 2024. We plan to communicate with the ABET commission about the latest changes, and diligently follow their instructions. We will take all necessary actions to ensure the continuous and active ABET accreditation of the program, including submitting an interim report or facilitating a site visit.

Professional Licensure Requirements

Not applicable.