

# MBA/MSCS STEM Based Pathway Program with WIL

## Degree Type

MBA/MSCS

## Pathways Overview

The Master of Business Administration (MBA) / Master of Science in Computer Science (MSCS) Pathways allows students to earn two master's degrees fusing core business administration essentials with principal computer science fundamentals. The Pathways supports a detailed Data Science and Analytics study with a strong focus on Machine Learning with Artificial Intelligence to optimize the precision and speed of data and information acquisition for the Business Leader to make sound data-driven decisions. It also focuses on the transpersonal aspect of leadership and human interaction and integrates these concepts throughout the program.

The MBA portion of Pathways fuses core business topics and analytics, both data and strategic information, to ensure that Business Leaders fully comprehend the company's strategic, operational, and tactical direction. Data is the lifeblood of every organization, and understanding the data from an analytical, visual, and statistical vantage point is vital in today's organizations.

The Pathways MSCS data science and machine learning facilitates students' understanding of modeling and visualizing data. The student will learn how to use information more precisely for strategic prediction and description of business processes. The MSCS core courses infuse information assurance, information systems, software engineering, and vital computational processes into the program to provide a well-rounded computational approach to Business Administration.

Since nearly every business organization utilizes information technology, Pathways will enable students to be informed Business Leaders who can manage modern businesses' complex information systems, including cyber security, software development, networking, and computer systems management. They will be well equipped to adapt to changes in global computing technology to ensure a viable organizational future and sound cyber foundation for today's companies.

## STEM Integration and Focus

The Pathways includes an MSCS that is science, technology, engineering, and management focus (STEM)<sup>1</sup>. This facilitates a well-rounded, industry-centric approach to computer science to ensure students are prepared to face the global challenges of the current business and technological environment. The Pathways integrates solid foundations in business and computer science, including strategy, ethics, law, human motivation, decision science, and marketing, among other managerial disciplines, coupled with a focus on the STEM domains to ensure that students have a holistic understanding of the techno-centric global business and technology environment.

## How the Pathways Works

Students will begin their initial degree program in either an MBA or MSCS. Once they reach a threshold point in their first program, they may choose the Pathways. The Pathways threshold depends on whether the student starts in the MBA or MSCS programs. Additionally, the student must maintain a CGPA of 3.0 or better and complete all courses in each program, as described below.

### Pathways Enrollment

Students will enroll in the Pathways through their Program Chairs. Once the student has completed one or the other (MSCS or MBA) and their degrees have been conferred, they can begin the second program. Six (6) credits from the first program will be transferred to the second program when the student enters the second program. An additional application fee will not be required. The Chairs will notify the Registrar's office once the student makes their pathway decision, and the Admissions office will enroll them officially. If a student chooses the Pathways from their entrance into the university, they will need to choose which program (MSCS or MBA) to start with.

## MBA Program Overview

The Master of Business Administration (MBA) program provides students with well-integrated business fundamentals and analytic-centric decision-making instruction. The program will provide graduates with the knowledge, skills, and transpersonal perspective necessary to foster an organizational culture of value-driven, analytics-based decision-making in a competitive global strategic environment. The program balances today's business disciplines while focusing on the human dimensions of leadership and management through the lens of transpersonal psychology. Core courses provide foundational knowledge of leadership and management, decision-making, operations, marketing, finance, law, and ethics to guide strategic actions that enhance organizational performance and global sustainability. Please visit the [MBA Program Overview](#) for more details regarding the MBA program.

## MSCS Program Overview

The Master of Science in Computer Science (MSCS) STEM Program at Sofia University is a rigorous and comprehensive graduate program that provides a sound foundation in core computer science principles and cutting-edge computer science specializations. It provides thorough coverage of the theory of computer science while providing relevant, practical, and applicable knowledge in a broad range of applied and advanced topics. The program focuses on innovative, transpersonal, and transformative learning to ensure that students are well prepared for the technical and managerial challenges of the rapidly evolving computing, engineering, and scientific industries, as well as the challenges of future academic and research-based endeavors.

The MSCS STEM program includes a science, technology, engineering, and management focus (STEM). This facilitates a well-rounded, industry-centric approach to computer science to ensure that students are prepared to face the global challenges of the current technological environment. The program integrates solid foundations in the managerial, engineering, and scientific aspects of computer science, such as software, systems, and computer engineering, risk and safety management, and software product management, as well as the core scientific, technological, and mathematical aspects of computer science and its integration with business, scientific, and engineering information systems as well as science, engineering, and business analytics programs. Please visit the [MSCS Program Overview](#) for more details regarding the MSCS program.

### **Work Integrated Learning Integration**

The Pathways has a complete Work Integrated Learning (WIL) component, allowing all students to participate in the Sofia Internship program, directly mapping to the Pathways curricula. The internship program allows students to apply their learning directly in an organizational/corporate/technical setting while being mentored directly by experienced faculty members from the MBA and MSCS programs. Within the internship program, students will learn computer science and business skills and apply them while developing lessons learned documents, work application summaries, and academic products reflecting their internship.

Students will also interact weekly with other internship students to share experiences and provide peer guidance and advice. The internship supervisor at the internship organization will also be involved in the student's learning process through comprehensive feedback to assist the student, which will be communicated to the faculty mentor. Overall,

the Work Integrated Learning component of the Pathways will provide students valuable real-time business experience that will assist them in learning the core business and computer science topics on the job and provide a platform to help them reflect on their experiences with complete support by MBA and MSCS faculty and student peers.

BA program: Dr. Simone M. DiMatteo

MSCS program: Dr. Donna Dulo

### **Program Learning Outcomes**

Upon successful completion of the Joint MBA/MSCS STEM pathway, students will be able to:

- Apply advanced data science and analytics techniques to complex business situations to enhance the descriptive and predictive information capabilities of business leaders
- Apply and integrate statistics, artificial intelligence, and machine learning processes to complex domain specific business scenarios to facilitate optimal solutions to business and product issues requiring advanced predictive strategic information
- Integrate transpersonal concepts to business and technological processes to ensure sound ethical and humanistic solutions to organizational issues
- Apply information technology to business organizations and business processes to ensure cyber security, sound software use and development, and effective technological risk management