MBA/MSCS STEM Based Pathway Program with WIL

Degree Type
MBA/MSCS

(Hybrid, a combination of Campus and Online Courses)

The Master of Business Administration (MBA) / Master of Science in Computer Science (MSCS) Pathway Program fuses core business administration fundamentals with core computer science fundamentals that support a detailed study in Data Science and Analytics with a strong focus in Artificial Intelligence and Machine Learning to optimize the precision and speed of data and information acquisition. The program facilitates a comprehensive approach to business analytics through a solid foundation in computational data science to achieve descripting and predictive data models and solutions to facilitate sound business decisions and strategy formulation in a science, technology, engineering, and management (STEM) global environment context. It also focuses on the transpersonal aspect of leadership and human interaction and integrates these concepts throughout the program.

MBA Program Overview

The Master of Business Administration (MBA) degree program provides students with thorough and well-integrated instruction in business fundamentals and analytic centric decision making. It focuses on the development of deep self-knowledge and emotional intelligence that benefit managers across a range of science, technology, engineering, and business contexts. The program is designed to 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 MBA program balances traditional business disciplines while focusing on the human dimensions of leadership and management coupled with the strategic use of data science and analytics to ensure a complete transformative transpersonal vision of the organization. Core courses provide foundational knowledge of personality and motivation, operations, strategy, law, ethics, and leadership, to guide strategic actions leading to the enhancement of organizational performance and global sustainability.

Throughout the MBA program students apply, align, and balance three human strengths in organizational decision-making: rationality and logic (head); emotional intelligence (heart); and deep intuition (soul). Students apply these principles to real world science, technology, engineering, and management domains to develop innovative, ethical, and business oriented solutions that positively impact the organization, its operational environment, and humanity.

The analytics focus of the program enables students to develop precise snapshots of the organization and its performance in the global environment to ensure that sound, viable, and innovative solutions are developed and strategically implemented. Overall, the program strives to balance business centric principles with sound transpersonal ideals to prepare students to become transformative, innovative leaders in today's complex global based business environment.

The MBA program has a complete Work Integrated Learning (WIL) component which allows all students to participate in the Sofia Internship program which directly maps to the MBA curricula. The Internship program allows students to directly apply their learning in an organizational/corporate setting while being mentored directly by an experienced faculty member. Within the internship program, students will learn business skills and apply them while developing lessons learned documents, work application summaries, and academic products that reflect on their internship. Students will also interact weekly with other MBA 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 that will be communicated to the faculty mentor. Overall, the Work Integrated Learning component of the MBA program will provide students valuable real time business experience that will assist them in learning core business topics on the job and provide a platform to help them reflect on their experiences with complete support by MBA faculty and student peers.

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 as well as in 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, 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.

The MSCS STEM program has a complete Work Integrated Learning (WIL) component which allows all students to participate in the Sofia Internship program which directly maps to the MSCS curricula. The Internship program allows students to directly apply their learning in a highly technical environment while being mentored directly by an experienced faculty member. Within the internship program, students will learn technology skills and apply them to their MSCS program while developing lessons learned documents, work application summaries, and technical products that reflect on their internship. Students will also interact weekly with other MSCS STEM 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 that will be communicated to the faculty mentor. Overall, the Work Integrated Learning component of the MSCS STEM program will provide students valuable real time business experience that will assist them in learning core computer science topics on the job and provide a platform to help them reflect on their experiences with complete support by MSCS faculty and student peers.

Work Integrated Learning Integration

The Pathway Program has a complete **Work Integrated Learning (WIL)**[1] component which allows all students to participate in the Sofia Internship program which directly maps to the Pathway Program curricula. The Internship program allows students to directly apply their learning in an organizational/corporate/technical setting while being mentored directly by experienced faculty member from both the MBA and MSCS programs. Within the internship program, students will learn both computer science and business skills and apply them while developing lessons learned documents, work application summaries, and academic products that reflect on 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 that will be communicated to the faculty mentor. Overall, the

Work Integrated Learning component of the Pathway Program will provide students valuable real time business experience that will assist them in learning 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.

[1]*The Work Integrated Learning pedagogical model utilized in the Sofia University Pathway Program is based on a systematic and comprehensive study of the WIL models utilized in the United Kingdom, Australia, Canada, and New Zealand. This includes a comprehensive quality assurance and evaluative framework that will be utilized by the Pathway Program to assess the effectiveness of the WIL program in future program evaluations and program updates.*

STEM Integration and Focus

The Pathway Program includes a **science, technology, engineering, and management** focus **(STEM)**[2] This facilitates a well-rounded industry centric approach to business administration and computer science to ensure that students are prepared to face the global challenges of the current business and technological environment. The program 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.

[2]***Department of Homeland Security Designated Degree STEM Title:*** *Management Science and Quantitative Methods.* ***DHS CIP Series and Code*** *2.1399.*

The U.S. Department of Homeland Security (DHS) STEM Designated Degree Program List is a complete list of fields of study that DHS considers to be science, technology, engineering, or mathematics (STEM) fields of study for purposes of the 24-month STEM optional practical training extension described at 8 CFR 214.2(f).

Under 8 CFR 214.2(f)(10)(ii)(C)(2), a STEM field of study is one "included in the Department of Education's Classification of Instructional Programs taxonomy within the two-digit series containing engineering, biological sciences, mathematics, and physical sciences, or a related field. In general, related fields will include fields involving research, innovation, or development of new technologies using engineering, mathematics, computer science, or natural sciences (including physical, biological, and agricultural sciences)."

See the following web site for a complete list of the 2020 DHS CIP STEM Codes and information about the CIP Code system: https://www.ice.gov/sites/default/files/documents/stem-list.pdf

Pathway Program Overview

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The MBA portion of the program fuses core business topics and analytics both of data and strategic information to ensure that business leaders fully comprehend the strategic, operational, and tactical direction of the company. Data is the lifeblood of every organization, and understanding the data from an analytical, visual, and statistical vantage point is vital to every business leader.

The MSCS data science and artificial intelligence portion of the program enables students to more precisely model and visualize data and information for strategic prediction and description of both business processes and core business domain functionality in science, technology, and engineering disciplines. Additionally, 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, this joint program will also enable students to be informed business leaders who can manage the complex information systems of the modern business including aspects of 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 into the 21st century.

Pathway Program Enrollment

Students in good standing are eligible and can notify the registrar and program chairs of their interest in joining the pathway program. All F-1 students must coordinate with the DSO to extend their time at Sofia University, per F-1 policy.

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

Data Analytics Concentration (12 Units)

Our MBA program, a fusion of Transpersonal Psychology (TP) and management principles, is a comprehensive 36-unit journey. Students seeking to expand their skill set can incorporate a Data Analytics concentration into their MBA program.
This specialization in Data Analytics is achievable by opting for **four (equivalent to 12 units)** selected MSCS courses. These additional courses help students broaden their analytical capabilities, a skill increasingly valued in today's data-driven business world.
For a more aligned learning experience, we suggest business students consider the following MSCS courses.
The following are the Data Analytics concentration courses:

Item #	Title	Credits
MSCS2201	Artificial Intelligence	3.0
MSCS2202	Machine Learning	3.0
MSCS2401	Data Science	3.0
MSCS3008	Introduction to Robotics	3.0
MSCS3019	Data Visualization	3.0
MSCS3804	Cyber Security and Information Assurance	3.0
MSCS3805	Statistical Analysis for Computer Science	3.0

Total Credits	**12**