

VIRGINIA INSTITUTE OF SCIENCE & TECHNOLOGY

Master of Business Administration (MBA) Program Curriculum

1. Program Information & Structure

MBA Program Structure	No. of Courses	Quarter Credits
Core Courses	8	36
Concentration Courses	3	13.5
Experiential/Capstone	1	4.5
Total No. of Courses	12	54

2. Program Description/Objective

a. Program Description and Goals

The mission of Virginia Institute of Science and Technology (VIST) is to prepare students for rewarding careers through quality educational programs that meet the changing needs of employers and the community. To meet the needs of a diverse community of learners, VIST provides education that balances technical, professional, and critical thinking components. Therefore, the proposed Master of Business Administration (MBA) program is consistent with the VIST's stated purpose and mission.

VIST's MBA program aims to provide students with the knowledge and skills needed to be successful individuals in a competitive business environment. The MBA program is designed to prepare students for the knowledge and skills essential to finding employment in a small or mid-size corporation in today's technology-driven and customer-oriented business world. The MBA program emphasizes hands-on, practical education with the optimal integration of academic theories with the real world. The curriculum balances the technical, data-driven, and quantitative skills to make objective decisions with interpersonal and communication skills necessary to work effectively with people at all levels from all cultures. The concepts and theories learned in the program are applied to the capstone that combines academic and professional development.

MBA Program Objectives

Students who graduate from the MBA program will be able to develop the following skills:

1. Business Leadership & Management Skills

To demonstrate an ability to apply significant business administration knowledge in the MBA program.

2. Strategic Planning & Problem-Solving Skills

VIRGINIA INSTITUTE

OF SCIENCE & TECHNOLOGY

To demonstrate an ability to identify problems, define objectives, collect and analyze information, evaluate risks and alternatives, and leverage technology to solve organizational problems using a strategic planning approach.

- **Communication and Team Management Skills**

To demonstrate an ability to communicate effectively with all stakeholders and mobilize the team for a common purpose with a clear understanding of organizational behavior and change.

- **Social Responsibility & Ethical Decision-Making Skills**

To demonstrate the ability to understand and analyze corporate social responsibilities and apply ethical decision-making principles during day-to-day operations.

3. MBA Program Structure

In the MBA program, students must complete a total of 12 courses to gain 54-quarter credits for graduation. Details are as follows:

a. Core Courses (8 Courses / 36 credits)

The Core Courses (36 credits) consist of in-depth courses covering the many facets of business, along with a comprehensive course in strategic management, critical technologies, and fundamental hands-on skills. All students are required to complete the 8 core courses listed below:

Course No.	Course Title	Credits	Prerequisite
MBA510	Leadership & Management	4.5	None
MBA515	Managerial Economics	4.5	None
MBA521	Accounting for Decision Making	4.5	None
MBA536	Finance for Decision Making	4.5	None
MBA540	Marketing Management	4.5	None
MBA546	Strategic Management	4.5	None
MBA552	Business Law and Ethics	4.5	None
MBA560	Human Resources and Organizational Behavior	4.5	None

b. Concentration Courses (3 courses / 13.5 quarter credits)

VIST also provides a number of high-level concentration courses for MBA students to equip them with emerging, contemporary, and diverse knowledge, technology, and skills. The concentration courses need to be taken before the final Business Capstone class. These specializations focus on various topics, which may help MBA students in their future job search and career development.

- i. Leadership and Management
- ii. Marketing Analytics and Management
- iii. Information Assurance Management

VIRGINIA INSTITUTE OF SCIENCE & TECHNOLOGY

Students must complete 6 core courses before they are allowed to enroll in their concentration.

Course No.	Course Title	Credits	Prerequisite
i. Leadership and Management (select 3 of 5 courses)			
LAM611	Project Management	4.5	None
LAM626	Entrepreneurship and Small Business Management	4.5	None
LAM630	Management of Innovation and Technology Change	4.5	None
LAM638	International Business Management	4.5	None
LAM646	Advanced Management Principles	4.5	None
ii. Marketing Analytics and Management (select 3 of 5 courses)			
MAM615	Data Sources for Marketing Analytics	4.5	None
MAM622	Advanced Analytics & Modeling	4.5	None
MAM628	Marketing Analytics	4.5	None
MAM632	Digital Marketing	4.5	None
MAM648	Marketing Strategy and Planning	4.5	None
iii. Information Assurance Management (select 3 of 5 courses)			
IAM618	Introduction to Digital Forensics	4.5	None
IAM626	Advanced Applied Digital Forensics	4.5	None
IAM636	Forensic Evaluation and Risk Management	4.5	None
IAM640	Information System Auditing and Monitoring	4.5	None
IAM647	System Assessment & Security Risk Analysis	4.5	None

4. Experiential/Capstone Project (4.5 credits/ 1 course)

Students are required to complete a knowledge-integrating capstone project in the last term after completing all core and concentration courses.

Course No.	Course Title	Credits	Prerequisite
MBA690	Capstone Project	4.5	Complete all core courses and concentrated courses.

5. MBA Courses Descriptions and Curriculum

MBA510 – Leadership & Management (4.5 credits)

In this advanced-level course, students will learn what differentiates leadership and management. Functional responsibilities of both will be explored while noting the similarity of industry use concerning the various styles and characteristics of each. Students will critically examine, “Is this leadership or management?” Upon completion of this course, students will have the ability to recognize and differentiate between organizational leadership and management.

Prerequisite: None

MBA515 - Managerial Economics (4.5 credits)

VIRGINIA INSTITUTE

OF SCIENCE & TECHNOLOGY

In this course, students develop an understanding of the application of economic theory to managerial decision-making. Students will apply economic tools and techniques to analyze business problems and formulate solutions from both normative and positive perspectives. Students will learn to factor in variables from other social disciplines that affect the process of economic decision-making. Students will investigate present economic problems that impact local and international markets and explore currents of economic thought and strategies currently evolving to address them.

Prerequisite: None

MBA521 - Accounting for Decision Making (4.5 credits)

In this course, students will gain an understanding of the principles and analytical techniques relating to corporate financial management. Students will develop, interpret, and apply accounting information used in effective managerial decision-making. In addition, students will be exposed to reporting and analysis requirements related to inventory, fraud, internal control and cash, receivables, long-live assets, and liabilities.

Prerequisite: None

MBA536 - Finance for Decision Making (4.5 credits)

In this course, students will develop an understanding of essential concepts in finance and apply them to decision-making. Students will explore how to link together strategic decision-making concepts with day-to-day management decisions. The course provides a practical approach as students examine risks and returns within organizations and in capital markets, budgeting, and cost management, and investments for short- and long-term goals. Topics include key areas required to build and grow a fiscally healthy organization.

Prerequisite: None

MBA540 - Marketing Management (4.5 credits)

This course offers an understanding of the nature and role of marketing in the firm and society. Students gain knowledge regarding the marketing decisions of price, place, promotion, and product, and develop an understanding of consumer behavior, market research, and social and cultural factors affecting marketing. The course exposes students to a series of marketing principles, frameworks, and analyses.

Prerequisite: None

MBA546 - Strategic Management (4.5 credits)

This course concentrates on strategy and policy formulation and implementation at the top management level. It discusses skills and concepts needed to manage an organization to compete effectively in its environment. It provides tools for identifying environmental opportunities and threats and organizational strengths and weaknesses.

Prerequisite: None

MBA552 - Business Law and Ethics (4.5 credits)

In this course, students will be introduced to basic jurisprudential discussions and debates that relate to business in society. Topics will include a general overview of the nature of law and its relationship to ethics; theories of contract, torts, and property; criminal law as it applies to business situations; and theories of the business enterprise and its regulation. The main focus will be on the organization and

VIRGINIA INSTITUTE OF SCIENCE & TECHNOLOGY

operation of the American legal system, legal rules, and ethical constraints that impact business, and the practical application of these rules and constraints to real-world situations.

Prerequisite: None

MBA560 - Human Resources and Organizational Behavior (4.5 credits)

This course explores human dynamics by examining the role of management and learning styles in the effective functioning of organizations. Topics include personality types, motivation, cognition and learning, 196 communication, team development, and leadership.

Prerequisite: None

LAM611 - Project Management (4.5 credits)

This course is designed to equip MBA students with project management skills and the tools necessary to become successful managers in any field of work. This course will cover all phases of project management, including the initiation, planning, implementing, controlling, and closing of projects. Emphasis will be on project organization, scheduling, cost control, value earned analysis, risk management, and quality control.

Prerequisite: None

LAM626 - Entrepreneurship and Small Business Management (4.5 credits)

This course provides the appropriate tools, knowledge, and skills for those students who wish to launch a new venture and become successful entrepreneurs. This course has adopted a hands-on approach to entrepreneurship by providing business information, statistics, and real-world examples, as well as case studies. In addition, this course will build a pathway for a successful business by examining all required segments of managing a business, such as business strategy, finance, and marketing.

Prerequisite: None

LAM630 - Management of Innovation and Technology Change (4.5 credits)

The objective of this course is to explore ways to create environments that are conducive to technological innovation. Students examine practices, models, and approaches of both established and new organizations. Topics covered: the innovative process, managing technical people, the impact of organizational design on innovation, knowledge management, and exploring new technologies.

Prerequisite: None

LAM638 - International Business Management (4.5 credits)

This course explores political, economic, cultural, and social factors that affect an enterprise's international strategies while entering a new foreign market and becoming globalized. Students will be able to discuss international trade theory and how government and business decisions influence international trade.

Prerequisite: None

LAM646 - Advanced Management Principles (4.5 credits)

This course focuses on the theory and practice of management and general tradeoffs that decision-makers face when operating as a senior manager in an organization. The course raises a fundamental question in management: How to delegate responsibilities across hierarchies while maintaining sufficient control over the organization. This question will be addressed by drawing from selected areas

VIRGINIA INSTITUTE OF SCIENCE & TECHNOLOGY

in management, including human resources, organization, and leadership. Teaching simulations and case studies allow students to learn the different roles of an organization.

Prerequisite: None

MAM615 – Data Sources for Marketing Analytics (4.5 credits)

In this course, students explain database methodologies, including relational databases, flat files, dimensional modeling, RSS feeds, and multi-dimensional modeling; examine the impact of data quality on analytics and apply ETL techniques and processes. Finally, evaluate the application of data warehouses and multi-dimensional cubes to decision-making and action.

Prerequisite: None

MAM622 - Advanced Analytics & Modeling (4.5 credits)

Students in this course demonstrate advanced practice in applying the analytic life cycle, examine approaches to data visualizations, apply their analytic skills to current organizational problems and apply analytic solution scoring and project management skills for effective team performance.

Prerequisite: None

MAM628 - Marketing Analytics (4.5 credits)

This course addresses the use of data and analytics for marketing decision-making by providing the student with skills to translate conceptual understanding into specific operational plans. Evaluate the reliability and validity of marketing research data and data analysis tools (Python/R) and report on research findings.

Prerequisite: None

MAM632 - Digital Marketing (4.5 credits)

Overview of digital marketing tactics. Focuses on the practical application of tactics in support of basic business strategies as they apply to online marketing, including websites, analytics, content marketing, email marketing, emerging technologies, etc.

Prerequisite: None

MAM648 - Marketing Strategy and Planning (4.5 credits)

In this course, students will learn the basic marketing strategy analysis, formulation, evaluation, and implementation concepts and tools. They will gain knowledge of how to define the ideal customer, establish marketing goals, select marketing tools, and project budget funds, etc. Students will also learn marketing strategies to extract potential customers using various marketing platforms – including networking, digital media, and traditional print advertising; they will evaluate the successful campaigns and build upon them while adjusting or stopping unsuccessful ones.

Prerequisite: None

IAM618 - Introduction to Digital Forensics (4.5 credits)

This course is a study of the techniques behind digital forensic investigations and evidence collection and will cover the fundamental steps of the traditional computer forensic methodology. By completing

VIRGINIA INSTITUTE OF SCIENCE & TECHNOLOGY

this course, the student will be able to use tools to extract data from live memory and captured network packets, recover deleted files, identify unknown file types, and analyze log files and registry.

Prerequisite: None

IAM626 - Advanced Applied Digital Forensics (4.5 credits)

This course will familiarize students with the application of forensic science principles and practices to the collection, preservation, examination, analysis, and presentation of digital evidence. The course will include selected topics from the legal, forensic, and information technology domains and utilize lecture, laboratory, and written projects to illustrate these topics.

Prerequisite: None

IAM636 - Forensic Evaluation and Risk Management (4.5 credits)

This course is designed from the ground up to cover the most critical skills needed to mount efficient and effective post-incident response investigations. It focuses on the knowledge necessary to expand the forensic mindset from residual data on the storage media from a system or device to the transient communications that occurred in the past or continue to occur. This course will cover the tools, technology, and processes required to integrate network evidence sources into investigations, with a focus on efficiency and effectiveness. It will encompass the skills of capturing not only suspicious data but also the ability to discern unusual patterns hidden within seemingly normal network traffic. This course offers hands-on experience with real-world scenarios that will help take students' work to the next level. Real-world examples will be utilized throughout the course in conjunction with numerous hands-on exercises to provide field-proven, practical Forensics Analysis skills.

Prerequisite: None

IAM640 - Information System Auditing and Monitoring (4.5 credits)

This course is designed to provide a risk-driven method for tackling the enormous task of designing an enterprise security validation program. After covering a variety of high-level audit issues and general audit and real-time monitoring best practices, the students will have the opportunity to dive deep into the technical "how to" for determining the key controls that can be used to provide a level of assurance to an organization. Tips on how to repeatedly verify these controls and techniques for continuous monitoring and automatic compliance validation will be given from real-world examples. The course contents will cover audit planning and techniques, more effective risk assessment for control specification, firewall, and perimeter auditing, a proven six-step audit process, time-based auditing, effective network population auditing, how to perform useful vulnerability assessments, uncovering "Back Doors," building an audit toolkit, detailed router auditing, technical validation of network controls, web application auditing, and audit and real-time monitoring tools.

Prerequisite: None

IAM647 - System Assessment & Security Risk Analysis (4.5 credits)

This course is designed for students to learn to identify Threat, Risk, and Vulnerability, as applied to enterprise IT systems. It incorporates the physical safeguards and policies necessary to meet the requirements for the protection of data in a fixed site. Students will conduct a Site Security Analysis of a given facility, based on skills and information learned in class. Gap Analysis, Gap Closure, and

VIRGINIA INSTITUTE

OF SCIENCE & TECHNOLOGY

Countermeasures will be discussed and documented, in an effort to counter identified Vulnerabilities. In this course, students will also learn the practical skills necessary to perform regular risk assessments for their organizations. The ability to perform risk management is crucial for organizations hoping to defend their systems. Risk management should be the foundational tool used to facilitate thoughtful and purposeful defense strategies.

Prerequisite: None

MBA690 – Capstone Project (4.5 credits)

The capstone course is designed to be offered in the final term of a student's major. This course requires students to use the knowledge and skills gained throughout their prior coursework to solve real-world business problems. MBA students must complete the Capstone Project, after finishing all core courses and their chosen elective courses (concentrations). Students should consult their academic advisor about options that best fit their career goals.

Prerequisite: None: Completion of all MBA core and concentration courses. Advisor's approval is required.