

# Business Administration, MBA Engineering

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**Program Director: Andrew G. Meyer, Ph.D.**

MBA website (<https://www.marquette.edu/business/graduate/mba.php>)

The objective of the master of business administration (M.B.A.) program with a specialization in Systems Engineering at Marquette University is to provide students with a broad professional education in preparation for responsible managerial positions. The program is built upon the foundations of analytics, leadership, ethics, and strategy.

Emphases of the program includes an understanding of business problems and the development of managerial skills. The M.B.A. program is accredited by the Association for the Advancement of Collegiate Schools of Business (AACSB–International) and reflects the high standards and expectations of that accreditation.

The M.B.A. with a Systems Engineering specialization is STEM-designated and delivered in a flexible format with classes offered as a combination of face-to-face, on-campus, hybrid or blended or online classes.

The M.B.A. program can be completed with 31.5 or 42 credit hours depending on academic background. Students who are waived from all business essentials courses and MBA 6010 Quantitative Analysis are required to complete the minimum 31.5 credits.

All waivers are reviewed at the time of admission so that students know the number of credits and which courses are required before starting the program. There is no option to test out or to place out of the business essentials based on a test or work experience, courses are waived only on formal, for-credit academic work completed within the last 10 years with a B or above from an accredited institution.

## Application Requirements

Application requirements and the online application link are available through the GSM website (<https://www.marquette.edu/business/graduate/mba.php>). In addition to M.B.A. admissions considerations, admission to the BUAE-MBA requires a bachelor's degree in engineering and a minimum GPA requirement of 3.00 on a 4.00 scale. Students who do not meet the 3.000 requirement, but have completed one year of engineering work experience, will be reviewed and considered based upon a letter of recommendation from their supervisor to determine the applicant's ability to complete advanced course work.

**Note:** Students may apply for regular degree, non-degree or temporary non-degree status. Non-degree applicants and temporary non-degree applicants must submit all required application materials, except the GMAT/GRE scores. Non-degree and temporary non-degree status are not available to international students. International applicants must apply for regular degree admission status.

Students are encouraged to complete all application materials and apply for degree status. Non-degree status and temporary non-degree status are valid for a limited number of semester(s) as approved by the program director. Students with non-degree or temporary non-degree status are not eligible to continue taking GSM classes beyond the time frame of the approved term(s) without degree admission. Typically, non-degree admission is not recommended in the M.B.A. program.

## Specialization: Systems Engineering

The M.B.A. (BUAE-MBA) program with the systems engineering specialization is STEM-designated and delivered in a flexible format with classes offered as a combination of on-campus, blended, and online classes. The systems engineering specialization is not available in the fully-online M.B.A.

This M.B.A. program can be completed with 31.5 - 42 credit hours depending on academic background. Students who are waived from all business essentials courses and MBA 6010 Quantitative Analysis are required to complete the minimum 31.5 credits.

All waivers are reviewed at the time of admission so that students know exactly which courses and number of credits are required before starting the program. There is no option to test out or to place out of the business essentials based on a test or work experience. Courses are waived only on formal, for-credit academic work completed within the last 10 years with a B or above from an accredited institution.

In addition to M.B.A. admissions considerations, admission to the BUAE-MBA requires a bachelor's degree in engineering and a minimum GPA requirement of 3.00 on a 4.00 scale. Students who do not meet the 3.000 requirement, but have completed one year of engineering work experience, will be reviewed and considered based upon a letter of recommendation from their supervisor to determine the applicant's ability to complete advanced course work.

## Program Requirements

1. Business Essentials (9 credits)
2. Analytics (4.5 credits)
3. Ethics and Organizations (3 credits)
4. Strategy (6 credits)

5. Leadership (4.5 credits)

6. Electives (15 credits)

The program does not require a thesis, essay or comprehensive examination. Instead, MBA 6997 Strategic Management Capstone serves as the final integrating experience in the program. MBA 6997 may be taken only after completing a combination of 18 credits from Analytics, Ethics and Organizations, Strategy, Leadership and electives.

| Code  | Title  | Hours     |
|---|--|-----------|
| <b>Business Essentials <sup>1</sup></b>     |  |           |
| MBA 6040                                    | Business Essentials - Accounting                             | 1.5       |
| MBA 6050                                    | Business Essentials - Economics                              | 1.5       |
| MBA 6060                                    | Business Essentials - Finance                                | 1.5       |
| MBA 6070                                    | Business Essentials - Information Systems                    | 1.5       |
| MBA 6080                                    | Business Essentials - Marketing                              | 1.5       |
| MBA 6090                                    | Business Essentials - Operations and Supply Chain Management | 1.5       |
| <b>Analytics</b>                            |  |           |
| MBA 6010                                    | Quantitative Analysis <sup>1</sup>                           | 1.5       |
| MBA 6100                                    | Business Analytics   | 3         |
| <b>Ethics and Organizations</b>             |  |           |
| MBA 6120                                    | Concepts for Ethical Business Practice                       | 1.5       |
| MBA 6130                                    | Corporate Social Responsibility                              | 1.5       |
| <b>Strategy</b>                             |  |           |
| MBA 6110                                    | Strategic Management Introduction                            | 3         |
| MBA 6200                                    | Enterprise Risk Management                                   | 1.5       |
| MBA 6997                                    | Strategic Management Capstone                                | 1.5       |
| <b>Leadership</b>                           |  |           |
| MBA 6140                                    | Leading People and Change                                    | 1.5       |
| MBA 6150                                    | Leading Innovation and Creativity                            | 1.5       |
| MBA 6160                                    | Leadership Coaching and Development                          | 1.5       |
| <b>Electives <sup>2, 3</sup></b>            |  | <b>15</b> |
| <b>Required specialization courses</b>      |  |           |
| GEEN 5820                                   | Systems Engineering Principles and Practice                  |           |
| GEEN 5830                                   | Engineering Risk Analysis                                    |           |
| <b>Choose 6 credits from the following:</b> |  |           |
| BIEN 5320                                   | Biomedical Instrumentation Design                            |           |
| BIEN 5510                                   | Image Processing for the Biomedical Sciences                 |           |
| BIEN 5700                                   | Systems Physiology   |           |
| CEEN 5640                                   | Traffic Characteristics and Design                           |           |
| CEEN 5715                                   | Sustainable Engineering                                      |           |
| COSC 5360                                   | Software and System Security                                 |           |
| COSC 5600                                   | Fundamentals of Artificial Intelligence                      |           |
| EECE 5210                                   | Design and Analysis of Electric Motor-Drive Systems          |           |
| EECE 5390                                   | Developments in Control                                      |           |
| EECE 5460                                   | Sensor Devices: Theory, Design and Applications              |           |
| EECE 5630                                   | Software Testing   |           |
| EECE 5650                                   | Introduction to Algorithms                                   |           |
| EECE 5850                                   | Introduction to Intelligent Systems                          |           |
| EECE 6310                                   | Modern Control Theory  |           |
| GEEN 5810                                   | Industrial Ecology and Sustainable Design                    |           |
| MEEN 5270                                   | Physical Systems Modeling                                    |           |
| MEEN 5410                                   | Experimental Design  |           |
| PSYC 5330                                   | Human Factors Engineering                                    |           |

Choose 3 credits of STEM-aligned elective <sup>3</sup>

**Total Credit Hours:**

**42**

- <sup>1</sup> The Business Essentials#courses represent the foundation of business. A student can be exempted from course requirements if the student has recently completed equivalent course work, with satisfactory grades, as part of a degree program accredited by the AACSB–International or other regionally accredited program specifically recognized by the Graduate School of Management. Undergraduate courses would qualify as equivalent course work, if completed within the last 10 years. Courses that are waived reduce the total number of credits required to complete the degree.
- <sup>2</sup> Courses for the systems engineering specialization will fulfill 12 of the 15 elective credits required. The remaining three credits should be pursued in business.
- <sup>3</sup> Students waived from 6 credits of MBA 6010, MBA 6050, MBA 6060, MBA 6070 and MBA 6090 with no other waivers need to complete 3 credits of a STEM-aligned M.B.A. elective to fulfill elective requirements.

## Specializations

Students pursuing the systems engineering specialization will be matriculated into the BUAE-MBA program plan aligned with the specialization. If a student adds a second specialization, the student will remain in the BUAE-MBA plan aligned with the systems engineering specialization. If a student no longer wishes to pursue the systems engineering specialization, they will be moved to the BUAD-MBA or BUAS-MBA plan aligned with their updated elective pursuits.

A specialization does not alter, in any way, the degree awarded. Specializations are noted on the student's official university transcript but not on the diploma. To earn a specialization, a student, in addition to meeting all requirements for the M.B.A. degree, must take at least 12 credits of course work from among the prescribed courses approved for the chosen specialization. The student must earn a grade of B or above in each of the prescribed [courses and](#) all must be taken at Marquette University. Specializations cannot be completed after the M.B.A. degree is awarded.

If a student pursues more than one specialization, 3 credit hours may count toward up to two specializations, as long as the same course is relevant to both specialization requirements. A second specialization does add additional courses beyond what is minimally required for the degree.

## Systems Engineering

In BUAE-MBA, students must choose this specialization. Completion of this specialization will likely require enrollment in courses offered during business hours.

| Code  | Title   | Hours    |
|---|---|----------|
| <b>Required Courses</b>                                 |   |          |
| GEEN 5820   | Systems Engineering Principles and Practice         | 3        |
| GEEN 5830   | Engineering Risk Analysis                           | 3        |
| <b>Electives - choose 6 credits from the following:</b> |   | <b>6</b> |
| BIEN 5320   | Biomedical Instrumentation Design                   |          |
| BIEN 5510   | Image Processing for the Biomedical Sciences        |          |
| BIEN 5700   | Systems Physiology                                  |          |
| CEEN 5640   | Traffic Characteristics and Design                  |          |
| CEEN 5715   | Sustainable Engineering                             |          |
| COSC 5360   | Software and System Security                        |          |
| COSC 5600   | Fundamentals of Artificial Intelligence             |          |
| EECE 5210   | Design and Analysis of Electric Motor-Drive Systems |          |
| EECE 5390   | Developments in Control                             |          |
| EECE 5460   | Sensor Devices: Theory, Design and Applications     |          |
| EECE 5630   | Software Testing                                    |          |
| EECE 5650   | Introduction to Algorithms                          |          |
| EECE 5850   | Introduction to Intelligent Systems                 |          |
| EECE 6310   | Modern Control Theory                               |          |
| GEEN 5810   | Industrial Ecology and Sustainable Design           |          |
| GEEN 5840   | Model-Based Systems Engineering                     |          |
| MEEN 5270   | Physical Systems Modeling                           |          |
| MEEN 5410   | Experimental Design                                 |          |
| PSYC 5330   | Human Factors Engineering                           |          |

Other courses as approved by the certificate faculty sponsor and the associate dean for academic affairs in the Opus College of Engineering

**Total Credit Hours:**

**12**

For additional information, contact the Graduate School of Management at (414) 288-7145, email [gsm@marquette.edu](mailto:gsm@marquette.edu) or visit the website at [marquette.edu/gsm](http://marquette.edu/gsm).

## MASTER'S DEGREE WITH A GRADUATE CERTIFICATE

If an M.B.A. student chooses to earn a graduate certificate, admission to both programs may be concurrent. The same courses may be used to satisfy the requirements of the master's program and certificate, as outlined in the University Bulletin for each program. Students are expected to be admitted into all programs they intend to complete, although course work completed prior to admission may be allowed to apply toward program requirements. Note that Marquette bulletin guidelines do not allow a student to complete a specialization and a certificate in the same area.

## Accelerated Bachelor's-Master's Degree Program

The accelerated degree program (ADP) allows students to earn both their master of business administration (M.B.A.) and an undergraduate degree from various [Marquette University](http://Marquette University) colleges within five years as long as they complete a minor in business or the following courses outlined below as part of their undergraduate studies.

| Code  | Title  | Hours |
|---|--|-------|
| <b>3 credits of Statistics from the following (transfer/test credits may also be accepted):</b> |  |       |
| COMM 1700   | Communication Statistics and Analysis  |       |
| MATH 1700   | Modern Elementary Statistics   |       |
| MATH 1700H  | Honors Modern Elementary Statistics  |       |
| MATH 4710   | Mathematical Statistics  |       |
| MATH 4720   | Statistical Methods  |       |
| MATH 4740   | Biostatistical Methods and Models  |       |
| PSYC 2001H  | Honors Psychological Measurements and Statistics   |       |
| BUAD 1560   | Applied Statistics   |       |
| MEEN 3426   | Engineering Statistics   |       |
| <b>Courses aligned with Business Essentials waivers include:</b>                                |  |       |
| BUAD 2100   | Accounting and Finance Fundamentals for Non-Business Majors (or ACCO 1030 and ACCO 1031) |       |
| ACCO 1030   | Principles of Financial Accounting (completed with ACCO 1031)                            |       |
| ACCO 1031   | Principles of Managerial Accounting (completed with ACCO 1030)                           |       |
| ECON 1001   | Introduction to Economics (or ECON 1103 and ECON 1104)                                   |       |
| ECON 1103   | Principles of Microeconomics (completed with ECON 1104)                                  |       |
| ECON 1104   | Principles of Macroeconomics (completed with ECON 1103)                                  |       |
| FINA 3001   | Introduction to Financial Management   |       |
| INSY 3001   | Introduction to Information Systems  |       |
| MARK 3001   | Introduction to Marketing  |       |
| OSCM 3001   | Operations and Supply Chain Management   |       |

In addition to completing courses associated with Business Essentials course waivers, undergraduate students may begin their graduate work as early as their junior year and complete 3-9 credits of graduate-level course work. A maximum of 6 credits of 5000-level course work transfers to the M.B.A. Should a student be denied admission to the M.B.A. program, the courses are counted toward the undergraduate degree only. A minimum grade of B is required for courses taken as an undergraduate student for graduate credit to apply toward graduate program requirements. Upon completion of the first term as a full-time master's candidate, the student must petition the appropriate Graduate School of Management program director to transfer the courses taken as an undergraduate to the master's degree.

To be considered for admission to the five-year program, applicants must formally apply to the Graduate School of Management during their junior or senior year at Marquette University, complete all application requirements, and indicate on the application that they are applying for the ADP.

For detailed information, contact the Graduate School of Management at (414) 288-7145 or visit the website at [businessmarquette.edu/academics/mba](http://businessmarquette.edu/academics/mba).

## University Policies

- Academic Censure - Graduate School of Management (<https://bulletin.marquette.edu/policies/academic-censure/management/>)
- Academic Integrity (<https://bulletin.marquette.edu/policies/academic-integrity/>)
- Academic Misconduct (<https://bulletin.marquette.edu/policies/academic-misconduct-policy/>)
- Academic Program Definitions (<https://bulletin.marquette.edu/policies/academic-programs-defined/>)

- Accelerated Degree Programs (<https://bulletin.marquette.edu/policies/accelerated-degree-programs/>)
- Attendance - Graduate School of Management (<https://bulletin.marquette.edu/policies/attendance/management/>)
- Awarding Diplomas and Certificates (<https://bulletin.marquette.edu/policies/awarding-diplomas-certificates/>)
- Background Checks, Drug Testing (<https://bulletin.marquette.edu/policies/background-checks-drug-testing/>)
- Class Rank (<https://bulletin.marquette.edu/policies/class-rank/>)
- Commencement (<https://bulletin.marquette.edu/policies/commencement/>)
- Course Levels (<https://bulletin.marquette.edu/policies/course-levels/>)
- Credit Hour (<https://bulletin.marquette.edu/policies/credit/>)
- Credit Load - Graduate School of Management (<https://bulletin.marquette.edu/policies/credit-load/management/>)
- Faculty Grading (<https://bulletin.marquette.edu/policies/faculty-grading/>)
- Family Education Rights and Privacy Act-FERPA (<https://bulletin.marquette.edu/policies/ferpa/>)
- Grade Appeals (<https://bulletin.marquette.edu/policies/grade-appeals/>)
- Grading System - Graduate School and Graduate School of Management (<https://bulletin.marquette.edu/policies/grading-system/graduate-management/>)
- Graduation - Graduate School of Management (<https://bulletin.marquette.edu/policies/graduation/management/>)
- Immunization and Tuberculosis Screening Requirements (<https://bulletin.marquette.edu/policies/immunization-and-tuberculosis-screening/>)
- Last Date of Attendance/Activity (<https://bulletin.marquette.edu/policies/last-dateof-attendance-activity/>)
- Military Call to Active Duty or Training (<https://bulletin.marquette.edu/policies/militarycall-active-duty-training/>)
- Registration - Graduate School of Management (<https://bulletin.marquette.edu/policies/registration/management/>)
- Repeated Courses - Graduate School of Management (<https://bulletin.marquette.edu/policies/repeated-courses/management/>)
- Student Consumer Complaints (<https://bulletin.marquette.edu/policies/student-complaints/>)
- Student Data Use and Privacy (<https://bulletin.marquette.edu/policies/student-data-use-privacy/>)
- Transcripts-Official (<https://bulletin.marquette.edu/policies/transcripts-official/>)
- Transfer Course Credit - Graduate School of Management (<https://bulletin.marquette.edu/policies/transfer-course-credit-policy/management/>)
- Withdrawal - Graduate School of Management (<https://bulletin.marquette.edu/policies/withdrawals/management/>)

## Graduate School of Management Policies

- Academic Programs Overview - Graduate School of Management (<https://bulletin.marquette.edu/business-administration/policies/academic-programs-overview/>)
- Academic Review (<https://bulletin.marquette.edu/business-administration/policies/academic-review/>)
- Advising (<https://bulletin.marquette.edu/business-administration/policies/advising/>)
- Appeals (<https://bulletin.marquette.edu/business-administration/policies/appeals/>)
- Assistantships and Fellowships (<https://bulletin.marquette.edu/business-administration/policies/assistantships-fellowships/>)
- Certificate Concurrent Enrollment (<https://bulletin.marquette.edu/business-administration/policies/certificate-concurrent-enrollment/>)
- College of Business Administration Policies (<https://bulletin.marquette.edu/business-administration/policies/>)
- Communication (<https://bulletin.marquette.edu/business-administration/policies/communication/>)
- Conduct (<https://bulletin.marquette.edu/business-administration/policies/conduct/>)
- Confidentiality of Proprietary Information (<https://bulletin.marquette.edu/business-administration/policies/confidentiality-proprietary-information/>)
- Continuous Enrollment (<https://bulletin.marquette.edu/business-administration/policies/continuous-enrollment/>)
- Courses and Prerequisites (<https://bulletin.marquette.edu/business-administration/policies/courses-prerequisites/>)
- Cross-listed Courses (<https://bulletin.marquette.edu/business-administration/policies/cross-listed-courses/>)
- Deadlines (<https://bulletin.marquette.edu/business-administration/policies/deadlines/>)
- Dual/Joint Programs of Study (<https://bulletin.marquette.edu/business-administration/policies/dual-joint-programs/>)
- Graduate Credit (<https://bulletin.marquette.edu/business-administration/policies/graduate-credit/>)
- Independent Study Courses (<https://bulletin.marquette.edu/business-administration/policies/independent-study-courses/>)
- Intellectual Property (<https://bulletin.marquette.edu/business-administration/policies/intellectual-property/>)
- Inter-University Visitation (<https://bulletin.marquette.edu/business-administration/policies/inter-university-visitation/>)
- Law Student Consent to Take a GSM Course (<https://bulletin.marquette.edu/business-administration/policies/law-student-consent-take-gsm-course/>)
- Prior Learning Assessment (<https://bulletin.marquette.edu/business-administration/policies/prior-learning-assessment/>)
- Temporary Withdrawal from a Graduate Program (<https://bulletin.marquette.edu/business-administration/policies/temporary-withdrawal/>)
- Time Limitations (<https://bulletin.marquette.edu/business-administration/policies/time-limitations/>)

- Undergraduate Students in Graduate Courses (<https://bulletin.marquette.edu/business-administration/policies/undergraduate-students-in-graduate-courses/>)