



# *Program-of-Study Exams*

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## **2023 Technical Manual**

Detailed technical information regarding the MBA Research program-of-study exams.

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## Background

Accountability in education affects all programs, all grade levels, and all educators. Local school districts, state education departments, and the U.S. Department of Education are all insisting that teachers, schools, and students adopt a more structured approach to learning and be more accountable for instructional outcomes.

This more structured approach to learning typically comes in the form of programs of study. Today's high-school students are expected to take a logical sequence of standards-based courses (both academic and career courses) that build on, but not duplicate, each other and lead to postsecondary education and success. At the end of students' high-school careers, they are commonly required to demonstrate their mastery of technical content through some type of program-of-study/end-of-program assessment.

To aid business and marketing educators in the development of quality programs of study at the local and/or state level, MBA Research and Curriculum Center offers several different program-of-study models. Each model details the recommended knowledge and skills to be included in a multi-course program for one of four specialties within business administration—namely, business management and administration, entrepreneurship, finance, and marketing.

Assessment tools offered by MBA Research support both formative and summative proof of student achievement throughout these programs of study. Specific options include authentic assessment tools (e.g., rubrics) as well as a range of more traditional objective testing alternatives such as the MBA Research program-of-study exams (also known as end-of-programs exams), which are administered by MBA Research.

## Purpose of the Program-of-Study Exams

MBA Research's program-of-study (end-of-program) exams provide objective, third-party documentation of learning achievement at the end of a high-school business administration program. Based on well-documented, industry-validated performance indicators derived from MBA Research's continuing research of the business community, these exams address skills and requisite knowledge required for college and career success in business management and administration, entrepreneurship, finance, and marketing. Twelve program-of-study exams (with corresponding pre-assessments) are presently available.

Each program-of-study exam offers added value to the completion of secondary course work and is recommended for documenting student learning outcomes over an entire high-school multi-course program of study. As such, the exams are recommended for program completers, typically high-school seniors.

The scope of each program-of-study exam is based in part on the length of the high-school portion of the related program-of-study model. Depending on the state and/or school, a secondary student might be considered a program completer after four, three, or even two years of study in a career and technical education program. Therefore, MBA Research has developed tests appropriate for high-school programs of varying lengths: four, three, and two credits/Carnegie units of instruction.

MBA Research's standard-level programs of study and corresponding exams are targeted at typical students as well as ESL students and other students with special needs. There are approximately 60 performance indicators per credit/Carnegie unit of instruction at the Standard level.

A student passing an MBA Research end-of-program exam has achieved a higher level of learning and is better prepared for the business world than is the typical student. The program-of-study exams, however, address many more specific needs of contemporary professional and technical career programs beyond recognition of high-achieving examinees. Instructors can increase the accountability of their programs relative to national standards by administering the exams. The exams can serve as guides in the development of programs and curricula. Exam results provide useful guidance regarding student knowledge and understanding of certain critical skills and concepts as well as the effectiveness of student learning across the entire instructional program. Pre- and post-assessment results lend themselves to program improvement and evaluation of student growth throughout a program.

## Development Process

The MBA Research and Curriculum Center program-of-study exams and corresponding pre-assessments are based on industry-validated performance indicators. The exam questions have been developed, reviewed, and edited for validity by professional writers and curriculum researchers who are trained in the development of quality instructional materials, including assessments.

Each multiple-choice test item is developed following these guidelines:

- Each test question must relate to a specified performance indicator and must test key, significant content.
- Each question must contain a complete stem so that students understand what they are being asked to respond to before reading the four alternatives (A, B, C, and D).
- Each question should be stated in a question or completion format.
- The bulk of the content for each item should be put in the stem rather than in the alternatives.
- Each question should be stated simply so that students do not have to guess at what they have been asked.
- Each test item should make students think and move beyond mere regurgitation of information.

While the test items themselves have not been reviewed by industry, an industry review process is planned for the future. All performance indicators have been validated (most, repeatedly) via direct industry input – most recently via online surveys involving hundreds of private sector business leaders nationwide.

All MBA Research instructional materials are routinely reviewed to ensure unbiased presentation. Select items that appear on the program-of-study exams are reviewed during a field-test process coupled with the development of instructional modules.

In addition, a statistical analysis of each program-of-study exam is completed once per year. Revisions to exams are made based on that analysis. A high percentage of items designated for replacement are selected because of their degree of difficulty. Items that are too easy fail to discriminate between students who know and don't know the content. Items that are too difficult are also removed. The other key variable impacting exam revisions is the alignment with the National Business Administration Standards. As standards change, so do the test items on the exams. An average of 10% - 20% of all items is replaced annually.

Access to the complete exams is limited to MBA Research staff who have a legitimate need-to-know (e.g., those responsible for loading exam questions into the testing software).

Some individual items, including annual replacement items, are pulled from an existing item bank and, therefore, may have been included in other applications.

## Format

Each program-of-study exam contains 100 multiple-choice test items administered online through a secure online testing vendor. Each test item is composed of a self-contained stem and four alternatives, including three plausible, but not defensible, distractors. Examinees have a total of 100 minutes to complete the exam.

MBA Research currently offers the following program-of-study exams:

- Standard Marketing (2-Credit)
- Standard Business Management and Administration (2-Credit)
- Standard Entrepreneurship (2-Credit)
- Standard Finance (2-Credit)
- Standard Marketing (3-Credit)
- Standard Business Management and Administration (3-Credit)
- Standard Entrepreneurship (3-Credit)
- Standard Finance (3-Credit)
- Standard Marketing (4-Credit)
- Standard Business Management and Administration (4-Credit)
- Standard Entrepreneurship (4-Credit)
- Standard Finance (4-Credit)

Program-of-study pre-assessments/pre-tests are also available.

## Scoring

While there is no definitive, absolute cut score for the program-of-study exams, MBA Research recommends that schools and/or states consider all test results of at least 70% to be passing. This suggested cut score, though not statistically validated, stems from MBA Research's extensive experience with comparable exams and with data collected during content validation.

## Test Administration/Delivery

Exams are delivered via a highly secure, password-protected online system designed specifically for high-stakes testing. Exams can be taken through any modern web browser (e.g., Internet Explorer, Mozilla Firefox, Chrome, Safari) running on a computer connected to the Internet.

Test administration/delivery processes include:

1. The testing administrator (a high-school or postsecondary instructor, in most cases) must log in to the online testing system to register each student, thereby creating student testing accounts. The administrator must create an identification number for each student (many schools use their students' school identification number) and select the test(s) each student will take. If any student will require special accommodations (e.g., extra time, a reader, etc.) during testing, the testing administrator can select the appropriate option when creating the student's account. Accommodations can be set at any time before activating a test for the student.
2. The testing administrator must enable each student's account online, which allows students to log in to the testing website as necessary without giving students access to any exams. The testing administrator should also access and print the students' login names and passwords.
3. On the actual test day, no more than 60 minutes before testing is scheduled to begin, the testing administrator must activate each student who will be taking the test that day. By doing so, the testing administrator authorizes these students to access and complete the selected exam.
4. The testing administrator administers the test. The testing administrator must be present during the entire testing period to field students' questions, enforce all policies and procedures for testing, and deter dishonest behavior.

Examinees have 100 minutes to complete the 100-item multiple-choice exam, although individual questions are not timed. Questions appear in random order and vary by computer terminal. Only one test item appears on an examinee's screen at any one time, but students can click forward and backward to skip and review questions throughout the exam.

Examinees are allowed use of simple calculators and scratch paper during testing, provided that the scratch paper is collected and destroyed at the conclusion of testing. Examinees are not permitted to use references or resources of any kind, access other computer programs while logged in to the testing website, communicate with other students or the testing administrator, or record any element of the exam in any manner.



## Reporting Results

Exam results are available in real time to authorized test administrators and can be viewed 24/7 in individual as well as aggregate reports. Individual results, which are available as either .CSV or .TXT files, detail the student's cumulative score on the exam, the number of test questions that the student answered correctly, and the student's test performance broken down by standard/instructional area. Aggregate reports, on the other hand, provide information on the students' test performance as a group or class. The group/class average for the entire exam overall is provided, as well as details about how the group/class performed in each standard/instructional area.

Access to scoring data is hierarchical and determined by the client. For example, a state may give access to districts who may in turn give access to schools, etc. Depending on the level within this hierarchical structure, authorized users may have access to the results for an entire state/province, district/region, or school.

Data are available for download so that each user may organize reports to fit specific needs. All reporting of current data (current fiscal year) are included in the cost of testing. There is a nominal fee for accessing archived data, if available.

## Performance Data

Statistical data for each program-of-study exam are reviewed annually to determine how effectively the overall exam and individual items within the exam are performing. On average, 10% - 20% of the statistically weakest items are replaced. Additional reviews by subject matter experts focus on item validity relative to the research base (standards and performance indicators).

Relevant data for the period ending May, 2023:

### ***Standard Marketing (3-Credit)***

Examinees: 2,345

Mean Score: 69.5

Median Score: 73.0

Variance: 242.82

Standard Deviation: 15.6

Alpha (Reliability): .93

### ***Other Program-of-Study Exams***

Sample size less than required for analysis.

Psychometric data are based on analysis by statisticians at the Center on Education and Training for Employment, The Ohio State University.

## Additional Documentation

MBA Research and Curriculum Center provides additional forms, checklists, and other documents to aid customers with their assessment programs. The various documents, along with a description of each, are listed below.

- **Instructions for Administering MBA Research program-of-study exams:** Provide detailed information to local teachers and administrators regarding the exams, including:
  - An overview of the online testing process
  - Exam administration instructions
  - FAQs and troubleshooting
  - Policies and procedures for proctoring the program-of-study exams
  - Roster of examinees preparation
  - Administrator and student instructions for test day
  - Online assessment glossary of terms
- **Online Testing Local/School Administrator Checklist:** Provides a listing of steps for preparing for and administering the program-of-study exams

## Exam Content

### Content Breakdown

All MBA Research program-of-study exams are based on industry-validated performance indicators. Performance indicators are organized into broad content areas and assigned to one of six planning levels:

<b>Prerequisite (PQ)</b>	Content develops employability and job-survival skills and concepts, including work ethics, personal appearance, and general business behavior.
<b>Career-Sustaining (CS)</b>	Content develops skills and knowledge needed for continued employment in or study of business based on the application of basic academics and business skills.
<b>Specialist (SP)</b>	Content provides in-depth, solid understanding and skill development in all business functions.
<b>Supervisor (SU)</b>	Content provides the same in-depth, solid understanding and skill development in all business functions as in the specialist curriculum, and in addition, incorporates content that addresses the supervision of people.
<b>Manager (MN)</b>	Content develops strategic decision-making skills in all business functions needed to manage a business or department within an organization.
<b>Owner (ON)</b>	Content develops strategic decision-making skills in all aspects of business that are needed to own and operate a business.

Each performance indicator is assigned to one of six curriculum-planning levels that represent a continuum of instruction ranging from simple to complex. The levels can serve as building blocks for curriculum development in that students should know and be able to perform the performance indicators at one level before tackling more complex skills and knowledge at the next level. The levels can also be used as the basis for developing an unduplicated sequence of instruction for articulation between high school and postsecondary business courses.

Specific exam questions are aligned with Bloom's taxonomy to help ensure that each exam addresses critical performance issues appropriate to industry standards.

## Content Focus

All specifications outlined below are estimates. Specific exam content changes frequently and without notice on the basis of continuing item analysis, content validations, and other variables. These specifications are for general information only.

### Standard Marketing (2-credit)

Level: Specialist\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	1%
CO	Communication Skills	3%
CM	Channel Management	5%
CR	Customer Relations	8%
EC	Economics	13%
FI	Financial Analysis	2%
HR	Human Resources Management	1%
IM	Marketing-Information Management	5%
NF	Information Management	2%
MK	Marketing	5%
MP	Market Planning	3%
OP	Operations	9%
PD	Professional Development	16%
PI	Pricing	3%
PM	Product/Service Management	5%
PR	Promotion	6%
SE	Selling	12%
SM	Strategic Management	1%

\*Questions may address performance indicators at this level and lower level(s).

### Standard Entrepreneurship (2-credit)

Level: Owner\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	2%
CM	Channel Management	3%
EC	Economics	20%
EN	Entrepreneurship	11%
FI	Financial Analysis	9%
HR	Human Resources Management	1%
NF	Information Management	1%
MK	Marketing	1%
MP	Market Planning	13%
OP	Operations	3%
PD	Professional Development	3%
PI	Pricing	5%
PM	Product/Service Management	14%
PR	Promotion	4%
SM	Strategic Management	8%

\*Questions may address performance indicators at this level and lower level(s).

### Standard Business Management and Administration (2-credit)

Level: Manager\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	1%
CR	Customer Relations	11%
EC	Economics	19%
EI	Emotional Intelligence	1%
FI	Financial Analysis	3%
HR	Human-Resources Management	2%
KM	Knowledge Management	2%
NF	Information Management	2%
MK	Marketing	1%
OP	Operations	25%
PD	Professional Development	18%
PJ	Project Management	5%
QM	Quality Management	1%
SM	Strategic Management	9%

\*Questions may address performance indicators at this level and lower level(s).

### Standard Finance (2-credit)

Level: Specialist\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	4%
CR	Customer Relations	10%
EC	Economics	18%
FI	Financial Analysis	41%
FM	Financial Information Management	2%
HR	Human-Resources Management	1%
NF	Information Management	2%
MK	Marketing	1%
OP	Operations	2%
PD	Professional Development	13%
RM	Risk Management	4%
SM	Strategic Management	2%

\*Questions may address performance indicators at this level and lower level(s).

**Standard Marketing (3-credit)**

Level: Specialist\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	1%
CO	Communication Skills	13%
CM	Channel Management	2%
CR	Customer Relations	6%
EC	Economics	10%
EI	Emotional Intelligence	3%
FI	Financial Analysis	2%
HR	Human Resources Management	2%
IM	Marketing-Information Management	3%
NF	Information Management	13%
MK	Marketing	4%
MP	Market Planning	1%
OP	Operations	9%
PD	Professional Development	13%
PI	Pricing	2%
PM	Product/Service Management	4%
PR	Promotion	3%
SE	Selling	8%
SM	Strategic Management	1%

\*Questions may address performance indicators at this level and lower level(s).

**Standard Entrepreneurship (3-credit)**

Level: Owner\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	1%
CM	Channel Management	2%
CR	Customer Relations	1%
EC	Economics	14%
EI	Emotional Intelligence	1%
EN	Entrepreneurship	8%
FI	Financial Analysis	10%
HR	Human Resources Management	3%
IM	Marketing-Information Management	1%
NF	Information Management	12%
MK	Marketing	1%
MP	Market Planning	9%
OP	Operations	5%
PD	Professional Development	12%
PI	Pricing	3%
PM	Product/Service Management	9%
PR	Promotion	2%
SM	Strategic Management	6%

\*Questions may address performance indicators at this level and lower level(s).

### Standard Business Management and Administration (3-credit)

Level: Manager\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	1%
CO	Communication Skills	7%
CR	Customer Relations	6%
EC	Economics	13%
EI	Emotional Intelligence	1%
FI	Financial Analysis	24%
HR	Human-Resources Management	1%
KM	Knowledge Management	1%
NF	Information Management	10%
MK	Marketing	1%
OP	Operations	12%
PD	Professional Development	17%
QM	Quality Management	1%
SM	Strategic Management	5%

\*Questions may address performance indicators at this level and lower level(s).

### Standard Finance (3-credit)

Level: Manager\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	2%
CC	Compliance	1%
CR	Customer Relations	6%
EC	Economics	17%
FI	Financial Analysis	32%
FM	Financial Information Management	1%
HR	Human-Resources Management	1%
NF	Information Management	10%
MK	Marketing	1%
OP	Operations	7%
PD	Professional Development	17%
SE	Selling	4%
SM	Strategic Management	1%

\*Questions may address performance indicators at this level and lower level(s).



**Standard Marketing (4-credit)**

Level: Specialist\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

CO	Communication Skills	13%
CM	Channel Management	2%
CR	Customer Relations	5%
EC	Economics	7%
EI	Emotional Intelligence	14%
FI	Financial Analysis	14%
HR	Human-Resources Management	1%
IM	Marketing-Information Management	2%
NF	Information Management	8%
MK	Marketing	2%
MP	Market Planning	1%
OP	Operations	6%
PD	Professional Development	10%
PI	Pricing	2%
PM	Product/Service Management	3%
PR	Promotion	2%
SE	Selling	7%
SM	Strategic Management	1%

\*Questions may address performance indicators at this level and lower level(s).

**Standard Entrepreneurship (4-credit)**

Level: Owner\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	2%
CO	Communication Skills	5%
CM	Channel Management	1%
EC	Economics	9%
EI	Emotional Intelligence	13%
EN	Entrepreneurship	4%
FI	Financial Analysis	21%
HR	Human Resources Management	1%
IM	Marketing-Information Management	1%
NF	Information Management	8%
MP	Market Planning	6%
OP	Operations	3%
PD	Professional Development	10%
PI	Pricing	2%
PM	Product/Service Management	7%
PR	Promotion	2%
SE	Selling	1%
SM	Strategic Management	4%

\*Questions may address performance indicators at this level and lower level(s).

### Standard Business Management and Administration (4-credit)

Level: Manager\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	1%
CO	Communication Skills	8%
CR	Customer Relations	4%
EC	Economics	9%
EI	Emotional Intelligence	10%
FI	Financial Analysis	29%
HR	Human-Resources Management	1%
KM	Knowledge Management	1%
NF	Information Management	8%
MK	Marketing	1%
OP	Operations	9%
PD	Professional Development	14%
QM	Quality Management	1%
SE	Selling	1%
SM	Strategic Management	3%

\*Questions may address performance indicators at this level and lower level(s).

### Standard Finance (4-credit)

Level: Manager\*

Questions: 100 multiple-choice

Content specifications (projected, approximate percentages):

BL	Business Law	1%
CC	Compliance	1%
CO	Communication Skills	3%
CR	Customer Relations	5%
EC	Economics	14%
EI	Emotional Intelligence	9%
FI	Financial Analysis	34%
FM	Financial Information Management	1%
HR	Human-Resources Management	1%
NF	Information Management	8%
OP	Operations	5%
PD	Professional Development	13%
SE	Selling	4%
SM	Strategic Management	1%

\*Questions may address performance indicators at this level and lower level(s).

## Performance Indicators

The content of the MBA Research program-of-study exams is based on the secondary-level courses within the various program-of-study models developed by MBA Research. The performance indicators, or competencies, within each of these different models are drawn from the National Business Administration Standards. Specific performance indicators within these standards and corresponding programs of study may change without notice on the basis of continuing secondary research, validation by industry professionals, and other variables.

For more information on the specific performance indicators tested on each of the different program-of-study exams, go to <https://www.mbaresearch.org/local-educators/certifications-testing/end-of-program-exams/>.

## Sample Questions

In addition to differences in the content focus, each MBA Research program-of-study exam differs slightly in terms of the levels of questions being asked. Using Bloom's taxonomy as the model, questions are selected to represent all six levels as indicated below:

**Knowledge and Comprehension**, including definitions, basic information, meaning of basic terms and concepts, and transfer of knowledge into new or different context.

*Examples:*

- |  |  |
|--|--|
| <p>1. Which major marketing function communicates information to consumers about a business's products?</p> <p>a. Promotion<br/>b. Channel management<br/>c. Product/Service Management<br/>d. Pricing</p> | <p>2. If a company uses puffery to promote its products, it makes _____ claims.</p> <p>a. exaggerated<br/>b. fraudulent<br/>c. humble<br/>d. factual</p> |
|--|--|

**Application and Analysis**, including use of information and concepts in hypothetical situations and recognition of meaning as used in various settings and situations.

*Examples:*

- |  |   |
|--|---|
| <p>1. A tornado destroyed a local business. This is an example of a(n) _____ risk.</p> <p>a. pure<br/>b. uninsurable<br/>c. speculative<br/>d. predictable</p> | <p>2. Calculate the total amount of the sale, using a sales-tax rate of 6%:</p> <p>2 shirts @ \$14.95 each<br/>1 pair of jeans @ \$39.99 each<br/>1 sweater @ \$21.55 each</p> <p>a. \$91.44<br/>b. \$95.94<br/>c. \$91.34<br/>d. \$96.93</p> |
|--|---|

**Synthesis and Evaluation**, including development of conclusions, ideas and recommendations for action based on hypothetical situations and data.

*Examples:*

1. Dan and Sarah are planning to open a business. Sarah is unable to devote full time to daily business operations but plans to provide financial support. Which form of business partnership would you suggest to Sarah?

- a. Open
- b. Close
- c. General
- d. Limited

2. While at work, employees see that a customer has been in an accident. The customer appears to be unconscious. What should they do?

- a. Take careful notes
- b. Start CPR
- c. Call 911
- d. Move victim to a more comfortable position