

Major Course Requirements for Business and Technology Management

(For undergraduate students admitted in 2015 or before)

■ **Credit Requirements for Graduation:** a minimum of 130 credits

※ Undergraduate students in the School of Business and Technology Management must complete double major in other natural science or engineering departments. (College of Natural Sciences, College of Life Science & Bioengineering, College of Engineering, etc.)

■ **Major:** at least 42 credits

○ **Mandatory Major Courses: 9 credits**

- MSB200 Introduction to Business Management (3), MSB204 Technology Management (3), MSB351 High Tech Venturing (3)

○ **Elective Major Courses: at least 33 credits**

- Elective Major I (select 5 courses, a minimum of 15 credits)
- Elective Major II (a minimum of 12 credits)
 - * Special Topics I, II, III in Business and Technology Management may be taken up to 6 credits in case that course subtitles are different.
- Elective Major III (a minimum of 6 credits)

■ **Minor:** at least 18 credits

○ **Mandatory Major Courses: 6 credits**

- Select 2 courses from MSB200 MSB200 Introduction to Business Management, MSB204 Technology Management, MSB351 High Tech Venturing

○ **Elective Major Courses: At least 12 credits**

- Elective Major I (select 2 courses, a minimum of 6 credits)
(refer to the Table of Curriculum)
- Elective Major II (a minimum of 6 credits)
(refer to the Table of Curriculum)
 - * Special Topics I, II, III in Business and Technology Management may be taken up to 6 credits in case that course subtitles are different.
- Elective Major III (Optional)

■ **Double Major:** at least 40 credits

○ **Mandatory Major Courses: 6 credits**

- Select 2 courses from MSB200 MSB200 Introduction to Business Management, MSB204 Technology Management, MSB351 High Tech Venturing

○ **Elective Major Courses: at least 34 credits**

- Elective Major I (select 5 courses, a minimum of 15 credits)
(refer to the Table of Curriculum)

- Elective Major II (a minimum of 10 credits)
(refer to the Table of Curriculum)
- * Special Topics I, II, III in Business and Technology Management may be taken up to 6 credits in case that course subtitles are different.
- Elective Major III (a minimum of 6 credits)
(refer to the Table of Curriculum)

※ Course Requirements for Double Major and Minor by Admission Year
(Refer to the Academic Bulletin published every two years)

Admission Year	Double Major (at least 40 credits)	Minor (at least 18 credits)
2014 and thereafter	<ul style="list-style-type: none"> - Mandatory Major: 6 credits (select 2 courses out of 3 courses) - Elective Major I: at least 15 credits - Elective Major II: at least 10 credits - Elective Major III: at least 6 credits 	<ul style="list-style-type: none"> - Mandatory Major: 6 credits (select 2 courses out of 3 courses) - Elective Major I: at least 6 credits - Elective Major II: at least 6 credits - Elective Major III: Optional
2013	<ul style="list-style-type: none"> - Mandatory Major: 6 credits - Elective Major I: at least 18 credits - Elective Major II: at least 10 credits - Elective Major III: at least 6 credits 	<ul style="list-style-type: none"> - Mandatory Major: 6 credits - Elective Major I: at least 6 credits - Elective Major II: at least 6 credits - Elective Major III: Optional
from 2012 to 2010	<ul style="list-style-type: none"> - Mandatory Major: 6 credits - Elective Major I: at least 18 credits - Elective Major II: at least 16 credits 	<ul style="list-style-type: none"> - Mandatory Major: 6 credits - Elective Major I: at least 6 credits - Elective Major II: at least 6 credits
from 2009 to 2008		<ul style="list-style-type: none"> - Mandatory Major: 9 credits including Introduction to Business Management (MSB200) - Elective Major: at least 9 credits including Principles of Economics (BEP405) or Introduction to Economics (HSS159)
2007 or before	<ul style="list-style-type: none"> - Mandatory Major: 21 credits - Elective Major: at least 19 credits 	<ul style="list-style-type: none"> - Mandatory Major: 6 credits including Introduction to Business Management (MSB200) and Principles of Economics (BEP405) or Introduction to Economics (HSS159) - Elective Major: at least 12 credits Elective Major I: at least 6 credits Elective Major II: at least 3 credits

■ **Elective Courses:** Double major credits must be taken in other natural science or engineering departments.

■ **Research Courses:** at least 4 credits

- Select one from Practicum Project(3), Internship(3), B.S. Thesis Research(3) (Required)
- S&T Biz Colloquium(1) (Required)

☐ Interim Measures

- Students admitted in 2015 or before can choose to follow the completion requirements applicable to students admitted in 2016 and after if desired.
- These requirements apply to the students who admitted in 2015 and thereafter.
- The requirements for students majoring in Business and Technology Management as a first major which was established in October 2013, apply to the students admitted to BTM in spring 2014 and thereafter. The students admitted in 2009 or before are ineligible to declare Business and Technology Management as their first major.
- Students pursuing a double major or a minor in Business and Technology Management must comply with the course requirements effective 2013 and thereafter, if they pursue a minor in Economics.
- HSS159 Introduction to Economics can be applied to the course requirements for both humanities & Social Sciences (Society) and double major or minor of Business and Technology Management if students are admitted between 2010 and 2013 (2008 1st and 3rd Curriculum Implementation). Students admitted in 2009 or before can choose to follow these requirements if desired.
- Only for students admitted in 2014 or before,
 - Only one of IE200 Introduction to Operation Research, IE101 Introduction to Operation Research, MSB341 Management Science can be counted as elective major of Business and Technology Management.
 - IE200 Introduction to Operation Research, IE101 Introduction to Operation Research and IE425 Project Management are counted as elective major II of Business and Technology Management.
- Special Topics I, II, III may be taken up to 6 credits in case that course subtitles are different.
- Course Substitutions for Abolished Courses
 - BEP405 Principles of Economics, BEP471 Introduction to Market Economy: HSS159 Introduction to Economics, MSB215 Microeconomics, MSB316 Macroeconomics
 - MSB442 Laws on Culture Contents and Intellectual Properties:
CTP302 Understanding of Cultural Contents
 - ※ The course substitutions for BEP405 Principles of Economics, BEP471 Introduction to Market Economy, MSB442 Laws on Culture Contents and Intellectual Properties can only apply to the students who retake the courses above.
- Policies for Overlapping Major Courses
 - A maximum of one overlapping major course (3 credits) can be double counted toward the minor requirements of Business and Technology Management and the requirements of Economics Minor Program.

- A maximum of two overlapping courses (6 credits) in Elective Major III can be double counted toward the double major requirements of Business and Technology Management and the requirements of Economics Minor Program.
- A maximum of 9 credits can be double counted toward the double major or the minor requirements of Business and Technology Management and the requirements of other academic programs.
- MSB351 High Tech Venturing can be counted as elective major II toward the double major or the minor requirements of Business and Technology Management for students admitted in 2013 or before.
- International students majoring in Business and Technology Management can substitute MSB495 Individual Study (1) for S&T Biz Colloquium.
- It is possible to substitute CS459 Introduction to Services Computing for MSB458 Web Technologies and Business Strategies for students who took the course in 2015 or before and wish to retake the course in Fall 2016 and thereafter.
- If students admitted in 2014 and thereafter take 9 credits in mandatory major courses, 3 credits which are not required in mandatory major can be counted as elective major II toward the double major or the minor requirements of Business and Technology Management.

**Major Course Requirements for
Business and Technology Management
(For undergraduate students admitted in 2016 and after)**

■ **Credit Requirements for Graduation:** a minimum of 136 credits

- ※ Undergraduate students must complete one of advanced major, minor, double major, or individually designed major.
- ※ Undergraduate students in the School of Business and Technology Management must complete double major in other academic programs.

■ **Major:** at least 48 credits

○ **Mandatory Major Courses: 9 credits**

- MSB200 Introduction to Business Management (3), MSB204 Technology Management (3), MSB351 High Tech Venturing (3)

○ **Elective Major Courses: at least 39 credits**

- Elective Major I (select 5 courses, a minimum of 15 credits)
- Elective Major II (a minimum of 18 credits)
 - * Special Topics I, II, III in Business and Technology Management may be taken up to 6 credits in case that course subtitles are different.
 - * CD401 Multidisciplinary Capstone Design I, CD402 Multidisciplinary Capstone Design II can be recognized as elective major II courses up to 3 credits.
- Elective Major III (a minimum of 6 credits)

■ **Individually Designed Major:** at least 12 credits

- A minimum of 12 credits must be taken in major courses offered by at least two different academic programs except affiliation.

■ **Minor:** at least 18 credits

○ **Mandatory Major Courses: 6 credits**

- Select 2 courses from MSB200 MSB200 Introduction to Business Management, MSB204 Technology Management, MSB351 High Tech Venturing

○ **Elective Major Courses: At least 12 credits**

- Elective Major I (select 2 courses, a minimum of 6 credits)
- Elective Major II (a minimum of 6 credits)
 - * Special Topics I, II, III in Business and Technology Management may be taken up to 6 credits in case that course subtitles are different.
 - * CD401 Multidisciplinary Capstone Design I, CD402 Multidisciplinary Capstone Design II can be recognized as elective major II courses up to 3 credits.
- Elective Major III (Optional)
- ※ Double counting for overlapping major courses is not allowed.

■ **Double Major:** at least 40 credits

○ **Mandatory Major Courses: 6 credits**

- Select 2 courses from MSB200 Introduction to Business Management, MSB204 Technology Management, and MSB351 High Tech Venturing

○ **Elective Major Courses: at least 34 credits**

- Elective Major I (select 5 courses, a minimum of 15 credits)
- Elective Major II (a minimum of 10 credits)
 - * Special Topics I, II, III in Business and Technology Management may be taken up to 6 credits in case that course subtitles are different.
 - * CD401 Multidisciplinary Capstone Design I, CD402 Multidisciplinary Capstone Design II can be recognized as elective major II courses up to 3 credits.
- Elective Major III (a minimum of 6 credits)
- ※ A maximum of 6 credits in overlapping major courses can be double counted toward the requirements of Business and Technology Management and the requirements of other academic programs.

■ **Elective Courses:** Double major credits must be taken in other natural science or engineering departments.

■ **Research Courses:** at least 4 credits

- Select one from Practicum Project(3), Internship(3), B.S. Thesis Research(3) (Required)
- S&T Biz Colloquium(1) (Required)
 - ※ International students can substitute MSB495 Individual Study (1) for S&T Biz Colloquium.

□ **Interim Measures**

- These requirements apply to the students admitted in 2019 or thereafter.
- Students admitted in 2018 or before can choose to follow the completion requirements above.
- If students pursuing a double major or a minor in Business and Technology Management take 9 credits in mandatory major courses, 3 credits which are not required in mandatory major can be counted as elective major II.

Major Course Requirements for Business and Technology Management (For Master's Program)

Thesis Master's Degree Program

■ **Credit Requirements for Graduation:** a minimum of 33 credits

■ **Mandatory General Courses:** 3 credits

- Select one course from CC500 Scientific Writing, CC510 Introduction to Computer Application, CC511 Probability and Statistics, CC512 Introduction to Materials Science and Engineering, CC513 Engineering Economics and Cost Analysis, CC522 Introduction to Instruments, CC531 Patent Analysis and Invention Disclosure.

■ **Mandatory Major Courses:** 3 credits

- MSB510 Innovation Management and Strategy

■ **Elective Courses:** at least 18 credits

- At least 15 credits from MSB500 level or above must be taken.
- It is mandatory to take at least one course from the following courses:
MSB500 Advanced Statistics for Management, MSB601 Research Methodology in Business and Technology Management, MSB701 Advanced Econometrics, MSB702 Research Methodologies II, MSB703 Business Analytics for Innovation Management, MSB736 Advanced Quantitative Analysis.

■ **Research Courses:** at least 9 credits

- 2 seminar credits must be taken.
 - International students and general scholarship students are exempt from the seminar requirement.

※ Course Requirements for Master's Program by Admission Year
(Refer to the Academic Bulletin published every two years)

Admission Year	Master's Program (at least 33 credits)
from 2019 to 2014	<ul style="list-style-type: none"> ○ Mandatory General: 3 credits, 1AU ○ Mandatory Major: 6 credits ○ Elective : at least 15 credits (at least 12 credits among MSB500 level or above) ○ Research : at least 9 credits
from 2013 to 2010	<ul style="list-style-type: none"> ○ Mandatory General: 3 credits, 1AU ○ Mandatory Major: 3 credits

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| | <ul style="list-style-type: none">○ Elective : at least 18 credits
(at least 12 credits among MSB500 level or above)○ Research : at least 9 credits |
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Interim Measures

- These requirements apply to the students admitted in 2020 or thereafter.
- Students admitted in 2019 or before can choose to follow the completion requirements of the year of their admission or the completion requirements above.
- Graduate students must take and complete the core courses of School of Business and Technology of Management; Principles of Accounting, Financial Management, and Marketing. However, students who have completed core courses above in the undergraduate or graduate programs, can either get an exemption from completion of the courses or take other courses instead, by getting the approval from the Undergraduate Head Professor beforehand.
(The exempted core course credits taken in the undergraduate program cannot be recognized as graduate credits.)

Major Course Requirements for Business and Technology Management (For Doctoral Program)

- **Credit Requirements for Graduation:** a minimum of 66 credits

- **Mandatory General Courses:** 3 credits
 - Select one course from CC500 Scientific Writing, CC510 Introduction to Computer Application, CC511 Probability and Statistics, CC512 Introduction to Materials Science and Engineering, CC513 Engineering Economics and Cost Analysis, CC522 Introduction to Instruments, CC531 Patent Analysis and Invention Disclosure.

- **Mandatory Major Courses:** 3 credits
 - MSB510 Innovation Management and Strategy

- **Elective Courses:** at least 30 credits
 - At least 24 credits from MSB500 level or above must be taken.
 - It is mandatory to take at least three courses from the following courses: MSB500 Advanced Statistics for Management, MSB601 Research Methodology in Business and Technology Management, MSB701 Advanced Econometrics, MSB702 Research Methodologies II, MSB703 Business Analytics for Innovation Management, MSB736 Advanced Quantitative Analysis.

- **Research Courses:** at least 30 credits
 - 4 seminar credits must be taken.
 - International students and general scholarship students are exempt from the seminar requirement.

- ※ The credits taken in the master's program may be counted toward the requirements of doctoral degree except research credits.

※ Course Requirements for Doctoral Program by Admission Year
 (Refer to the Academic Bulletin published every two years)

Admission Year	Doctoral Program (at least 66 credits)
from 2019 to 2014	<ul style="list-style-type: none"> ○ Mandatory General: 3 credits, 1AU ○ Mandatory Major: 6 credits ○ Elective : at least 27 credits (at least 21 credits among MSB500 level or above) <ul style="list-style-type: none"> - At least one course from MSB601 Research Methodology in Business and Technology Management, MSB701 Advanced Econometrics, MSB702 Research Methodologies II must be taken. ○ Research : at least 30 credits
from 2013 to 2010	<ul style="list-style-type: none"> ○ Mandatory General: 3 credits, 1AU ○ Mandatory Major: 3 credits ○ Elective : at least 30 credits <ul style="list-style-type: none"> - At least one course from MSB601 Research Methodology in Business and Technology Management, MSB701 Advanced Econometrics, MSB702 Research Methodologies II must be taken. ○ Research : at least 30 credits

Interim Measures

- These requirements apply to the students admitted in 2020 or thereafter. Students admitted in 2019 or before can choose to follow the completion requirements of the year of their admission or the completion requirements above.
- Graduate students must take and complete the core courses of School of Business and Technology of Management; Principles of Accounting, Financial Management, and Marketing. However, students who have completed core courses above in the undergraduate or graduate programs, can either get an exemption from completion of the courses or take other courses instead, by getting the approval from the Undergraduate Head Professor beforehand.
 (The exempted core course credits taken in the undergraduate program cannot be recognized as graduate credits.)

**Major Course Requirements for
Business and Technology Management
(For MS-PhD Integrated Program)**

■ **Credit Requirements for Graduation:** a minimum of 66 credits

■ **Mandatory General Courses:** 3 credits

- Select one course from CC500 Scientific Writing, CC510 Introduction to Computer Application, CC511 Probability and Statistics, CC512 Introduction to Materials Science and Engineering, CC513 Engineering Economics and Cost Analysis, CC522 Introduction to Instruments, CC531 Patent Analysis and Invention Disclosure.

■ **Mandatory Major Courses:** 3 credits

- MSB510 Innovation Management and Strategy

■ **Elective Courses:** at least 30 credits

- At least 24 credits from MSB500 level or above must be taken.
- It is mandatory to take at least three courses from the following courses: MSB500 Advanced Statistics for Management, MSB601 Research Methodology in Business and Technology Management, MSB701 Advanced Econometrics, MSB702 Research Methodologies II, MSB703 Business Analytics for Innovation Management, MSB736 Advanced Quantitative Analysis

■ **Research Courses:** at least 30 credits

- 4 seminar credits must be taken.
 - International students and general scholarship students are exempt from the seminar requirement.

※ The credits taken in the master's program may be counted toward the requirements of doctoral degree.

※ Course Requirements for Doctoral Program by Admission Year
(Refer to the Academic Bulletin published every two years)

Admission Year	Doctoral Program (at least 66 credits)
from 2019 to 2014	<ul style="list-style-type: none"> ○ Mandatory General: 3 credits, 1AU ○ Mandatory Major: 6 credits ○ Elective : at least 27 credits (at least 21 credits among MSB500 level or above) - At least one course from MSB601 Research Methodology in Business and Technology Management, MSB701 Advanced Econometrics, MSB702 Research Methodologies II must be taken. ○ Research : at least 30 credits
from 2013 to 2010	<ul style="list-style-type: none"> ○ Mandatory General: 3 credits, 1AU ○ Mandatory Major: 3 credits ○ Elective : at least 30 credits - At least one course from MSB601 Research Methodology in Business and Technology Management, MSB701 Advanced Econometrics, MSB702 Research Methodologies II must be taken. ○ Research : at least 30 credits

Interim Measures

- These requirements apply to the students admitted in 2020 or thereafter. Students admitted in 2019 or before can choose to follow the completion requirements of the year of their admission or the completion requirements above.
- Graduate students must take and complete the core courses of School of Business and Technology of Management; Principles of Accounting, Financial Management, and Marketing. However, students who have completed core courses above in the undergraduate or graduate programs, can either get an exemption from completion of the courses or take other courses instead, by getting the approval from the Undergraduate Head Professor beforehand.
(The exempted core course credits taken in the undergraduate program cannot be recognized as graduate credits.)