

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING  
and  
SCHOOL OF MANAGEMENT  
University at Buffalo

**JOINT FIVE-YEAR PROGRAM  
BS (Mechanical Engineering)/MBA**

The Department of Mechanical and Aerospace Engineering and the School of Management offer a five-year program leading to a joint Bachelors degree in mechanical engineering and Masters degree in business administration. This program reduces by one year the usual pattern of a four-year undergraduate degree and a two-year MBA program. At completion, you will be awarded a BS diploma and an MBA diploma, with a transcript notation that these degrees were awarded as part of a combined degree program.

Students wishing to pursue the dual program should take the GMAT and apply to the MBA program early during their junior year. Admissions will be limited to students who can satisfy the entrance requirements for the MBA program.

Each candidate must meet all the degree requirements of each program, except for the reduction in the total credit hours required for the usual pattern of a four-year BS (mechanical engineering) degree and a two-year MBA degree.

Applications for the joint five-year program can be found on the web at [www.mgt.buffalo.edu](http://www.mgt.buffalo.edu). For additional information or to set up an appointment, please contact:

Jennifer H. VanLaeken  
Assistant Director of Admissions  
School of Management  
203 Alfiero Center  
(716) 645-7853  
[jhv2@buffalo.edu](mailto:jhv2@buffalo.edu)

or

Dr. Kemper Lewis  
Faculty Advisor  
Department of Mechanical and Aerospace Engineering  
5 Norton Hall  
(716) 645-2685  
[kelewis@buffalo.edu](mailto:kelewis@buffalo.edu)

blank page inserted intentionally

# BS/MBA MECHANICAL ENGINEERING

Course Guide for students starting MBA classes Fall 2012 or later

( ME curriculum beginning Fall 2010<sup>#</sup> )

## First Year

Fall Semester	Credit Hrs	Spring Semester	Credit Hrs.
MTH 141 Calculus I	4	MTH 142 Calculus II	4
CHE 107 Chemistry I ^	4	PHY 107 Physics I	4
EAS 140 Engineering Principles	3	MAE 177 Intro to Eng Drawing/CAD	2
ENG 101 or 102 Writing **	3	EAS 230 Engineering Computations	3
General Education %	3	ENG 201 Adv. Writing or Humanities **	3
Total Credits	17	EAS 202 Engineering Impact on Society ^	1
Library Skills *		Total Credits	17

## Second Year

MTH 241 Calculus III	4	MTH 306 Differ. Equations	4
PHY 108 Physics II	4	EAS 208 Dynamics	3
PHY 158 Physics II Lab	1	EAS 209 Mech of Solids	3
EAS 207 Statics	3	EE 200 EE Concepts	3
MAE 204 Thermodynamics	3	General Education %	3
MAE 277 Intro to ME Practice	3	Total Credits	16
Total Credits	18		

## Third Year

MAE 335 Fluid Mechanics	3	MAE 311 Machines I	3
MAE 376 Applied Math for MAE's	3	MAE 336 Heat Transfer	3
MAE 340 Dynamic Systems	3	MAE 364 Manufacturing Processes	3
MAE 381 Engrg. Materials I	3	MAE 334 MAE Lab I	2
MAE 377 Product Design in a CAD Envir.	3	MAE 385 Materials Lab	1
Total Credits	15	MAE Technical Elective ***	3
		Total Credits	15

MBA applications are due by May 1 of third year

## Fourth Year

First Semester MBA Core @	15	Second Semester MBA Core @	10
MAE 451 Design Process & Methods	3	MBA Elective @	3
MAE 338 MAE Lab II	2	General Education %	3
Total Credits	20	Total Credits	16

## Fifth Year

MBA Electives - may include internship @	12	Fourth Semester MBA Core @	2
MAE Technical Elective ***	3	MBA Electives @	6
General Education %	3	MAE 494 Design Project	3
		MAE Technical Elective ***	3
		General Education %	3
Total Credits	18	Total Credits	17

- # This outline reflects the ME curriculum effective Fall 2010. Includes two professional practice track courses instead of a science elective and TE.
- \* Library Skills Test is required for all students entering UB in Fall of 1997 and thereafter.  
See the Library Skills website at <http://ublib.buffalo.edu/libraries/units/ugl> or go to room 107 in UGL.
- \*\* ENG 101 and ENG 201 or ENG 102 and Humanities (Writing Skills Requirement) as determined by placement: SAT/ACT, AP, TOEFL, or transfer credit.  
SAT verbal 400-570 = ENG 101 and then 201, 580-720 = ENG 102 and Humanities (%), 730-800 = Exempt from Writing Skills but need Humanities (%).
- \*\*\* To satisfy the technical elective requirements, students must complete a total of three courses at the 300 level or higher from the MAE department. The two professional practice courses required in the standard BS degree are satisfied by the MBA core when the requirements for the combined degree are fulfilled.  
MGQ 608 Statistical Analysis for Managers and MGQ 609 Analytics for Managers satisfy the applied math elective.
- ^ CHE 101 OR CHE 105 may be substituted for CHE 107.
- ^^ EAS 202 Engineering Impact on Society is required for students entering UB Engineering as freshman beginning with the fall 2011 catalog year.
- % World Civilizations I and II, American Pluralism or approved cognate, Social & Behavioral Science, Arts, and Humanities (if not required to complete ENG 101-201 sequence).
- @ Contact the School of Management for advisement on core MBA requirements and electives

This outline reflects course changes in MAE 334 and MAE 340 effective fall 2011 and MAE 338 effective Fall 2012. Students who have already successfully completed these courses prior to the changes do not need to retake them.

# BS/MBA MECHANICAL ENGINEERING

Course Guide for students starting MBA classes between Fall 2006 and Fall 2011

( ME curriculum beginning Fall 2010<sup>#</sup> )

## First Year

Fall Semester	Credit Hrs	Spring Semester	Credit Hrs.
MTH 141 Calculus I	4	MTH 142 Calculus II	4
CHE 107 Chemistry I ^	4	PHY 107 Physics I	4
EAS 140 Engineering Principles	3	MAE 177 Intro to Eng Drawing/CAD	2
ENG 101 or 102 Writing **	3	EAS 230 Engineering Computations	3
General Education %	3	ENG 201 Adv. Writing or Humanities **	3
Total Credits	17	EAS 202 Engineering Impact on Society ^	1
Library Skills *		Total Credits	17

## Second Year

MTH 241 Calculus III	4	MTH 306 Differ. Equations	4
PHY 108 Physics II	4	EAS 208 Dynamics	3
PHY 158 Physics II Lab	1	EAS 209 Mech of Solids	3
EAS 207 Statics	3	EE 200 EE Concepts	3
MAE 204 Thermodynamics	3	General Education %	3
MAE 277 Intro to ME Practice	3	Total Credits	16
Total Credits	18		

## Third Year

MAE 335 Fluid Mechanics	3	MAE 311 Machines I	3
MAE 376 Applied Math for MAE's	3	MAE 336 Heat Transfer	3
MAE 340 Dynamic Systems	3	MAE 364 Manufacturing Processes	3
MAE 381 Engrg. Materials I	3	MAE 334 MAE Lab I	2
MAE 377 Product Design in a CAD Envir.	3	MAE 385 Materials Lab	1
Total Credits	15	MAE Technical Elective ***	3
		Total Credits	15

MBA applications are due by May 1 of third year

## Summer

2 General Education Classes %

## Fourth Year

MGA 604 Financial Analysis & Reporting	3	MGO 641 Strategic Management	3
MGB 601 Behav & Organiz Concepts	3	MGM 625 Marketing Management	3
MGT 601 Ethics & Corporate Governance	1.5	MGO 630 Operations & Service Mgt	3
MGF 631 Financial Management	1.5	MGA 609 Management Accounting	3
MAE 451 Design Process & Methods	3	MGF 631 Financial Management	1.5
MAE 338 Fluid/Heat Transfer Lab	1	MGG 635 Business Communications	1.5
MGQ 606 Prob & Stat for Mgt ^^	3	General Education %	3
Total Credits	16	Total Credits	18

## Fifth Year

MBA Practicum @	3	MBA Elective @	3
MGE 601 Economics for Managers	3	MBA Elective @	3
MBA Elective @	3	MBA Elective @	3
MBA Elective @	3	MAE 494 Design Project	3
MBA Elective @	3	MAE Technical Elective ***	3
MAE Technical Elective ***	3	Total Credits	15
Total Credits	18		

- # This outline reflects the ME curriculum effective Fall 2010. Includes two professional practice track courses instead of a science elective and TE.
- \* Library Skills Test is required for all students entering UB in Fall of 1997 and thereafter.  
See the Library Skills website at <http://ublib.buffalo.edu/libraries/units/ugl> or go to room 107 in UGL.
- \*\* ENG 101 and ENG 201 or ENG 102 and Humanities (Writing Skills Requirement) as determined by placement: SAT/ACT, AP, TOEFL, or transfer credit.  
SAT verbal 400-570 = ENG 101 and then 201, 580-720 = ENG 102 and Humanities (%), 730-800 = Exempt from Writing Skills but need Humanities (%).
- \*\*\* To satisfy the technical elective requirements, students must complete a total of three courses at the 300 level or higher from the MAE department.  
MGO 604 and MGB 601 satisfy the professional practice track requirements for the BS in mechanical engineering.
- ^ CHE 101 OR CHE 105 may be substituted for CHE 107.
- ^^ EAS 202 Engineering Impact on Society is required for students entering UB Engineering as freshman beginning with the fall 2011 catalog year.
- ^^^ MGQ 606 satisfies the applied math elective for the BS in mechanical engineering.
- % World Civilizations I and II, American Pluralism or approved cognate, Social & Behavioral Science, Arts, and Humanities (if not required to complete ENG 101-201 sequence).
- @ Contact the School of Management for advisement on MBA electives.

This outline reflects course changes in MAE 334 and MAE 340 effective fall 2011. Students who have already successfully completed these courses prior to the changes do not need to retake them.

# BS/MBA MECHANICAL ENGINEERING

Course Guide for students starting MBA classes between Fall 2006 and Fall 2011

(ME curriculum prior to Fall 2010)

## First Year

Fall Semester	Credit Hrs	Spring Semester	Credit Hrs.
MTH 141 Calculus I	4	MTH 142 Calculus II	4
CHE 107 Chemistry I ^^	4	PHY 107 Physics I	4
EAS 140 Engineering Principles	3	MAE 177 Intro to Eng Drawing/CAD	2
ENG 101 or 102 Writing **	3	EAS 230 Engineering Computations	3
General Education %	3	ENG 201 Adv. Writing or Humanities **	3
Total Credits		Total Credits	
17		16	

Library Skills \*

## Second Year

MTH 241 Calculus III	4	MTH 306 Differ. Equations	4
PHY 108 Physics II	4	EAS 208 Dynamics	3
PHY 158 Physics II Lab	1	EAS 209 Mech of Solids	3
EAS 207 Statics	3	EE 200 EE Concepts	3
MAE 204 Thermodynamics	3	Science Elective ^^	4-5
MAE 277 Intro to MAE Practice	3	Total Credits	
Total Credits		17-18	
18			

## Third Year

MAE 335 Fluid Mechanics	3	MAE 311 Machines I	3
MAE 376 Applied Math for MAE's	3	MAE 336 Heat Transfer	3
MAE 340 Dynamic Systems	3	MAE 364 Manufacturing Processes	3
MAE 381 Engrg. Materials I	3	MAE 334 MAE Lab I	2
MAE 377 Product Design in a CAD Envir.	3	MAE 385 Materials Lab	1
Total Credits		MAE Technical Elective ***	3
15		Total Credits	
		15	

MBA applications are due by May 1 of third year

## Summer

2 General Education Classes %

## Fourth Year

MGA 604 Financial Analysis & Reporting	3	MGO 641 Strategic Management	3
MGB 601 Behav & Organiz Concepts	3	MGM 625 Marketing Management	3
MGT 601 Ethics & Corporate Governance	1.5	MGO 630 Operations & Service Mgt	3
MGF 631 Financial Management	1.5	MGA 609 Management Accounting	3
MAE 451 Design Process & Methods	3	MGF 631 Financial Management	1.5
MAE 338 Fluid/Heat Transfer Lab	1	MGG 635 Business Communications	1.5
MGQ 606 Prob & Stat for Mgt ^	3	General Education %	3
Total Credits		Total Credits	
16		18	

## Fifth Year

MBA Practicum @	3	General Education %	3
MGE 601 Economics for Managers	3	MBA Elective @	3
MBA Elective @	3	MBA Elective @	3
MBA Elective @	3	MBA Elective @	3
MBA Elective @	3	MAE 494 Design Project	3
MAE Technical Elective ***	3	MAE Technical Elective ***	3
Total Credits		Total Credits	
18		18	

- Pr. Indicates a prerequisite for the course. Not all prerequisites are noted.
- \* Library Skills Test is required for all students entering UB in Fall of 1997 and thereafter.  
See the Library Skills website at <http://ublib.buffalo.edu/libraries/units/ugl> or go to room 107 in UGL.
  - \*\* ENG 101 and ENG 201 or ENG 102 and Humanities (Writing Skills Requirement) as determined by placement: SAT/ACT, AP, TOEFL, or transfer credit.  
SAT verbal 400-570 = ENG 101 and then 201, 580-720 = ENG 102 and Humanities (%), 730-800 = Exempt from Writing Skills but need Humanities (%).
  - \*\*\* To satisfy the technical elective requirements, students must complete a total of three courses at the 300 level or higher from the MAE department.  
MGO 630 satisfies the fourth technical elective normally required for the BS in mechanical engineering.
  - ^^ CHE 101-102 OR CHE 105-106 may be substituted for CHE 107-108.
  - ^ PHY 207 (Physics III) w/lab (PHY 257), CHE 108 w/lab, or an approved biology course w/lab.
  - ^ MGQ 606 satisfies the applied math elective required for the BS in mechanical engineering (approved April 2011; is retroactive)
  - % World Civilizations I and II, American Pluralism or approved cognate, Social & Behavioral Science, Arts, and Humanities (if not required to complete ENG 101-201 sequence).
  - @ Contact the School of Management for advisement on MBA electives.

This outline reflects course changes in MAE 334 and MAE 340 effective fall 2011. Students who have already successfully completed these courses prior to the changes do not need to retake them.