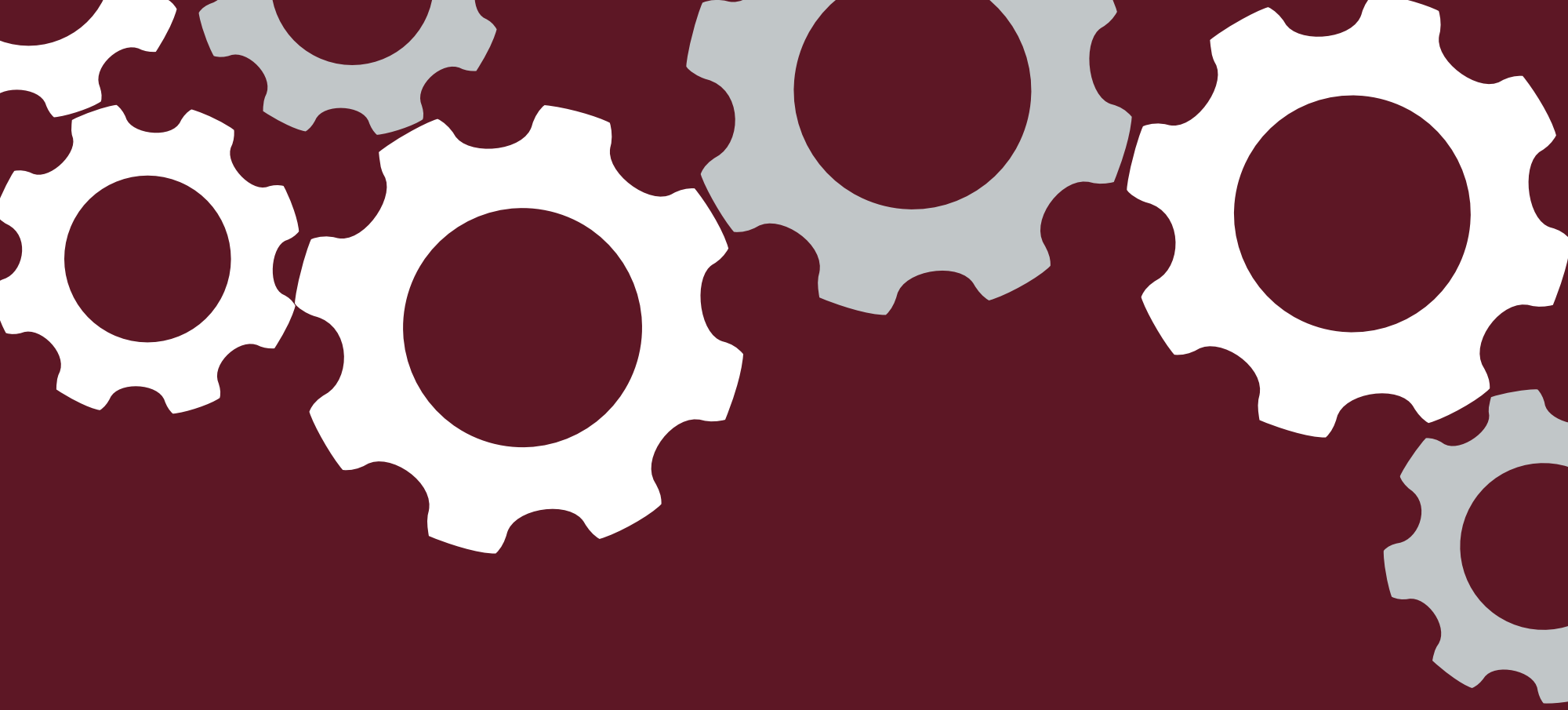

ME ADVISING SUCCESS GUIDE

Here's where you will find the ME Curriculum, helpful hints, what it takes be a successful student and more!

314 Carpenter Hall

Krystle D. Boyd, Program Coordinator

Department of Mechanical Engineering

662-325-3260

Updated: 1.10.2023

ACADEMIC ADVISING & GENERAL EDUCATION INFO

MECHANICAL ENGINEERING DEPARTMENT

Academic Advising Syllabus

Location: 314 Carpenter Hall

Hours: 8:00am – 5:00pm

Phone: 662-325-3260

Web Site: http://www.me.msstate.edu/undergraduate/

Advisor: Krystle D. Boyd

MISSION

Provide quality advising services to present, former, and potential students relative to academic and career issues.

OBJECTIVES

- Be prepared for advising meetings.
- Become able to make effective decisions regarding program and career goals.
- Develop an academic plan to achieve those goals.
- Use campus resources to achieve those goals (Career Center, Counseling Center, Writing Center, Learning Center, etc.)
- Respect and take action on suggestions given by advisor.
- Check your email for advising dates each semester.
- Graduate on time.

Academic advising is a collaborative process spanning the student's entire college career. Students and advisors each have specific responsibilities.

ADVISOR AND ADVISEE RESPONSIBILITIES

Advisee Responsibilities

- Schedule an advising appointment or make contact with your advisor at least once a semester.
- Come prepared to each appointment.
- Be familiar with CAPP Compliance in order to keep up with your academic progress.
- Enroll in the courses you and your advisor discuss during your advising appointments.
- Make yourself aware of the various college programs, policies and procedures.
- One semester before you graduate, you will sign your degree audit; proceed based on audit results and contact your advisor with any questions.
- Maintain a 2.0 GPA.
- **Accept responsibility for your decisions.**

Advisor Responsibilities

- Know program and University requirements and accurately communicate them.
- Explain the importance and proof of a college education.
- Complete graduation audit upon request from advisee.
- Encourage, guide, and support advisee toward degree completion.
- Refer students to the appropriate University resources as necessary.
- Listen carefully to advisee's questions and concerns.
- Be accessible to advisees through various means (email, phone, office hours, etc.)

Mechanical Engineering
General Degree Requirements and Academic Policies

All students in the Mechanical Engineering department must meet certain requirements to remain in good standing and graduate.

Academic Advising: Located in 314 Carpenter, 662-325-3260. Pre-registration takes place each year in early October (for Spring term courses) and early March (for Summer and Fall term courses) Prior to the start of pre-registration each student is required to be released for registration by their advisor. Students will receive an email with instructions from their advisor of the process to be released. Advisors assist and advise you. It is your responsibility to take the required classes and make the grades to graduate. In addition to course registration, advising is available to provide resources for success and support while on campus and as you move to your career.

University GPA requirements: To continue in good standing, students must maintain a minimum 2.0 overall GPA and a minimum 2.0 MSU GPA. Failure to maintain good standing leads to academic probation, suspension, and dismissal *(AOP 12.15 and 12.16)*

Senior year: Once a student has earned at least 90-110 applied hours, students will receive an email notifying them that a degree audit has been done. Students will review and sign the audit and it will be filed and notated on their CAAP Compliance.

Graduation: To graduate with a degree from ME, a student must meet the following requirements:

1. Minimum 2.0 GPA overall
2. Minimum 2.0 GPA on all courses attempted at MSU
3. Complete a minimum of 32 hours of upper level courses at MSU.
4. The last 32 hours of the program must be taken at MSU. *(AOP 12.11)*

In the semester you plan to graduate, you must apply for graduation through myState by the deadline published on the Registrar's Academic Calendar. Failure to meet this deadline will result in additional graduation fees.

Other advising information:

1. Your MSU email (netID@msstate.edu) is the official means of communication between students and the ME department as well as your instructors. It is vital that you check your MSU e-mail daily.
2. Co-op work semesters are not required but highly encouraged. Co-op is not used for academic credit.
3. You are required to take a total of 3 Technical Electives with one being a ME 4XXX.
4. ME 1111 Pre-req: ACT Math sub score of 26 or grade of C or better in MA 1323.
5. ME 2133 requires completion of ME 1111 and Sophomore standing.
6. EM 2413 requires completion of MA 1723 and PH 2213 with 'C' or better.
7. ME 3113 requires completion of Comp. Prog., MA 3113, MA 3253, and PH 2213 with a 'C' or better
8. ME 3513 requires completion of CH 1213, CH 1211, MA 2733, and PH 2213 with 'C' or better.
9. ME 4301 requires completion of ME 3103, ME 3313, ME 3523, and EM 3313.
10. ME 4401 requires completion of EM 2433, EM 3313, ME 3103, and ME 3403.
11. ME 4403 requires completion of EM 3213, ME 2133, and co-req ME 3403.

MSU Honor Code: All ME students and faculty participate full in the MSU Honor Code. For additional information please visit: http://student.msstate.edu/honorcode/

> ***As a Mississippi State University student, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."***

I, _____, have read the ME degree requirements and Academic Policies as outlined in this document. I understand that I must follow these requirements and policies to graduate with a degree from MSU-ME.

Signature: _____ Date: _____ MSU NetID: _____

Return signed form to: ME Academic Advising Center, 314 Carpenter Hall
Mail: PO Box 9552, Mississippi State, MS 39762
Phone: (662) 325-3260

April 2021

Mechanical Engineering Curriculum Sheet

You are not required to take the classes in this exact order. Everything is set up based on prerequisite requirements – if you meet the prerequisites you can take the class.

1st Semester	2nd Semester	3rd Semester	4th Semester	5th Semester	6th Semester	7th Semester	8th Semester
ME 1111 – Intro to ME	PH 2213 – Phys I **Prereq: MA 1713**	PH 2223 – Phys II **Prereq: PH2213, MA 1723**	*Humanities Elective	EM 3213 – Mech of Mat'l **Prereq:EM2413, MA2733**	ME 3403 – Mat'ls for ME Design **Prereq: CH1223, EM2413 Coreq: EM 3213**	ME 4403 – Machine Design **Prereq: EM 3213, ME2133, ME 3423 Coreq: ME 3403**	ME 4433 – CDI **Prereq: ME 3423 ME 4403**
MA 1713 – Cal I	MA 1723 – Cal II **Prereq: MA 1713**	EM 2413 – Eng Mech I (Statics) **Prereq: PH2213, MA 1723**	EM 2433 – Eng Mech II (Dynamics) **Prereq:EM2413,MA2733**	ME 3113 – Eng Analysis **Prereq: Comp. Prog., MA 3113, MA 3253, PH 2213**	ME 3423 – Mech of Machinery **Prereq:EM2433, ME3113**	**Tech Elect	** Tech Elect
CH 1213 – Chem I	CH 1223 – Chem II (no lab required) **Prereq: CH 1213**	MA 2733 – Cal III **Prereq: MA 1723**	MA 2743 – Cal IV **Prereq: MA 2733**	EM 3313 – Fluid Mech. **Prereq:EM 2413, MA2733**	ME 3313 – Heat Transfer Prereq: **EM 3313 MA 3253, ME 3513**	ME 430**1** – Thermo Fluids Lab **Prereq: ME 3103, ME3313 ME 3523, EM 3313**	ME 4333 – ESD **Prereq: ME 3313 ME 3113**
CH 1211 – Chem 1 Lab	CSE 1233 - Computer Programming with C / CSE 1284 - Intro to Comp Programming	ME 2133– Mod. & Manuf. **(SO standing) Prereq: ME 1111**	ME 3513 – Thermo I **Prereq: CH1213, CH1211 MA 2733, PH 2213**	ME 3523 – Thermo II **Prereq: ME 3513, CH 1223**	ME 3103 – Exp Meas & Techniques **Prereq: GE 3513 Coreq: ME 3523**	IE 3913 **Prereq: MA 1713**	ME 440**1** – Solid Mechanics Lab **Prereq:EM 2433,EM 3213,ME3103,ME3403**
EN 1103 – Comp I	EN 1113 – Comp II **Prereq: EN 1103**	MA 3113 – Linear Alg **Prereq: MA 1723**	MA 3253 – DE I **Coreq: MA 2743**	GE 3513 – Tech Writing **(JR standing) Prereq: EN 1103, EN 1113**	ECE 3413 – Elec. Circuits **Coreq: MA 3113**	ME 3613 – System Dyn. Prereq:**EM2433, EM3313 ME 3113**	ME 411**1** – Professional Seminar **(SR standing)**
*Humanities Elective				*Soc/Beh Science Elective		*Soc/Beh Science Elective	ME 4643– Vibration & Controls **Prereq: ME 3613**
*Fine Arts Elective							** Tech Elect

Courses outlined in bold require a grade of "C" or better. Note the last digit in the course number indicates the credit hours earned.

*Core electives (Humanities, Soc/Beh Science, Fine Arts) must come from MSU Core-Approved list

** Technical Elective must be approved – 3 ME 4XXX; or 2 ME 4XXX & 1 non-ME or 1 ME 4XXX & 2 non-ME (non-ME TE's must be from approved TE list or based on consultation with academic advisor)

Classes Taken

Classes in Progress

* Course must be Retaken

Courses that must be retaken are listed on the back.

Revised Spring 2024

Name: _____

Net ID: _____

Admit Term/Type: _____

Expected Graduation Date: _____

Degree Audit Completed: _____

Cheat Sheet for

Course Scheduling for ME Freshmen

Typical Cousre Load

12 hours, minimum
4 courses
15 hours, RECOMMENDED
5 courses
19 hours, maximum
6 courses

Course Numbers

Each course has a **4 digit** number.
The first number is the level
The last digit tell you how many hrs are earned in the course.
1 = Freshmen, 2 = Sophomore, 3 = Junior, 4 = Senior
Example: EN 1113 is a 3-hour, freshmen level English course

Math Courses

Have a subscore of 26 or higher? You will be enrolled in MA 1713 Calculus I.

Subject Prefix

Each subject area has a 2-3 letter abbreviation.
For example, English = EN, Math = MA, History = HI, etc

English Courses

Have a subscore of 28 or higher? You may be enrolled in EN 1173 Accelerated English Comp II.

Mechanical Engineering Technical Electives Courses

Course	F23	S24	F24	S25	F25	S26	F26	S27	F27	F28
ME Courses										
ME 4343 Intermediate Heat Transfer		X			X			X		
ME 4833 Intermediate Fluid Mechanics			X			X			X	
ME 4353 Alternative Energy Sources		X		X		X		X		X
ME 4373 Air Conditioning	X		X		X		X		X	
ME 4543 Combustion Engines	X		X		X		X		X	
ME 4393 Power Generation System		X		X		X		X		X
ME 4193 Automotive Engineering		X		X		X		X		X
ME 4123 Failure of Engineering Materials	X		X		X		X		X	
ME 4133 Mechanical Metallurgy	X		X		X		X		X	
ME 4233 Fundamentals of FEA		X		X		X		X		X
ME 4990 Special Topics in Mechanical Eng.										

Additional Technical Electives

Energy/Environmental
ME 4353 - Alternative Energy Sources
ME 4373 - Air Conditioning
ME 4990 – Power Generation Systems
PTE 4993 - Petroleum Econ Analysis
ME 4543 – Combustion Engines

Materials
ME 4123 – Failure of Engineering Materials
ME 4133 – Mechanical Metallurgy
ABE 4523 - Biomedical Materials
CHE 4143 - Adv Poly/Composite Materials
EM 4133 – Mechanics of Composite Materials

Fluid/Thermal Mechanics
ME 4833 – Int. Fluid Mechanics
ASE 4423 – Int. Comp Fluid Dynamics
ME 4343 – Intermediate Heat Transfer

Management/Entrepreneurship
IE 4923 – Six Sigma Methods and Project
PTE 4993 - Petroleum Econ Analysis
CE 4753 - Construction Cost Estimation

Math and Science
IE 4613 - Engineering Statistics I
IE 4624 - Engineering Statistics II
IE 4733 – Linear Programming
ASE 4233 - Structural Dynamics
Any 4000 level Math course

Solid Mechanics
EM 4213 – Advanced Mechanics of Materials
EM 4123 – Intro. to Finite Element Methods
EM 4133 – Mechanics of Composite Materials
ABE 4613 – Biomechanics
ME 4233 – Fundamentals of FEA

Medical
IE 4113 - Human Factors
ABE 4613 – Biomechanics
ABE 4523 - Biomedical Materials
CH 4513 - Organic Chemistry I
CH 4523 - Organic Chemistry II

Please note:

1. At least **one** of the **three** technical elective requirements must be a course offered by the ME department (ME 4XXX).
2. The Topic for ME 4990 will be announced the semester the course will be offered.
3. These courses are outside of ME, and the schedule is subject to change.
4. Students are limited to **ONE** Directed Individual Studies (DIS) course to apply towards the three technical elective requirements.

#Get Your College Life Together Checklist

Your guide to ensuring success as a Mechanical Engineering major!

FRESHMAN YEAR

- ✓ ***GET INVOLVED***
  - Participate in campus activities and organizations such as the American Society of Mechanical Engineers, Society of Automotive Engineers, Circle K, Anime Club, etc. Run for leadership positions whenever possible.
- ✓ ***GO TO CLASS AND MAKE GOOD GRADES***
- ✓ ***GET ADVISED***
  - Academic advising serves a crucial step in your college career, and freshmen are **REQUIRED** to get advised.
- ✓ ***ATTEND CAREER EVENTS***
  - Especially if they are hosted by the mechanical engineering department and/or organizations, it is never too early to get yourself out there!

SOPHOMORE YEAR

- ✓ ***JOIN HONOR SOCIETIES***
- ✓ ***LEARN THE CURRICULUM***
  - Be aware of the prerequisites you are required to make at least a "C."
- ✓ ***BUILD YOUR RESUME***
  - Get a part-time job, co-op, on-campus job, or a summer/holiday job if possible. Remember, ANY work experience is good work experience.
- ✓ ***GET A CONNECTIONS ACCOUNT***
  - This is where you can apply for jobs, co-ops, internships, see which employers are coming to campus, etc.
- ✓ ***ATTEND CAREER EVENTS***
  - Especially if they are hosted by mechanical engineering and/or organizations, it is never too early to get yourself out there!
- ✓ **THINK ABOUT UNDERGRADUATE RESEARCH**
  - If you are interested in grad school, look at the professor's research, and talk to them about undergraduate research positions. Who knows? This may lead to an offer for grad school!
- ✓ ***ATTEND ANY ME UNDERGRADUATE SEMINAR SERIES EVENTS***

JUNIOR YEAR

- ✓ ***GET YOUR RESUME REVIEWED ASAP THROUGH THE CAREER CENTER***
- ✓ ***NETWORK WITH EMPLOYERS***
  - Attend the Career Expo and introduce yourself to potential employers.
- ✓ ***IF INVITED, JOIN TAU BETA PI (HONORARY SOCIETY FOR ENGINEERING)***
  - Join other honor societies
- ✓ **THINK ABOUT UNDERGRADUATE RESEARCH**
  - If you are interested in grad school, look at the professor's research, and talk to them about undergraduate research positions. Who knows? This may lead to an offer for grad school!
- ✓ ***BE AWARE OF THE REQUIREMENTS TO GRADUATE***
- ✓ ***ATTEND ANY ME UNDERGRADUATE SEMINAR SERIES EVENTS***

SENIOR YEAR

FALL SEMESTER

- ✓ ***IF YOU HAVEN'T ALREADY, GET YOUR RESUME REVIEWED THROUGH THE CAREER CENTER***
- ✓ ***GO TO THE CAREER EXPO***
- ✓ ***SIGN UP FOR INTERNSHIP INTERVIEWS ON CAMPUS***
- ✓ ***SIGN YOUR DEGREE AUDIT***
- ✓ ***ATTEND ANY ME UNDERGRADUATE SEMINAR SERIES EVENTS***

SPRING SEMESTER

- ✓ ***APPLY FOR GRADUATION***
- ✓ ***APPLY TO GRADUATE SCHOOL***

MISSISSIPPI STATE UNIVERSITY
JAMES WORTH BAGLEY COLLEGE OF ENGINEERING

Department of
MECHANICAL ENGINEERING

Approved Core Electives 2023 - 2024

Humanities (6 Hours)

AAS 1063	Introduction to African American Studies
AAS 2363	Introduction to African American Literature
AAS 3013	African American History to 1865
AAS 3023	African American History since 1865
ARC 2313	History of Architecture I
ARC 3313	History of Architecture II
ARC 3323	History of Architecture III
BCS 2013	Construction and Culture
EN 2203	Introduction to Literature
EN 2213	English Literature Before 1800
EN 2223	English Literature After 1800
EN 2243	American Literature Before 1865
EN 2253	American Literature After 1865
EN 2273	World Literature Before 1600
EN 2283	World Literature After 1600
FL 1113-2143	Language I – IV
	***Chinese, French, German, Greek, Italian, Japanese, Latin, Russian, and Spanish**
HI 1003	History of Science in Six Ideas
HI 1013	History of Technology in Six Objects
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History before 1500
HI 1173	World History Since 1500
HI 1213	Early Western World
HI 1223	Modern Western World
HI 1313	East Asian Civilization to 1300
HI 1323	East Asian Civilization since 1300
HI 4683	Europe: The First World War to Hitler
HON 1163	The Quest Begins
HON 3183	Honors Seminar in the Humanities
PHI 1103	Introduction to Philosophy
PHI 1113	Introduction to Logic
PHI 1123	Introduction to Ethics
PHI 3023	History of Western Philosophy I
PHI 3033	History of Western Philosophy II
PHI 3153	Aesthetics
REL 1103	Introduction to Religions
REL 3213	World Religions I
REL 3223	World Religions II

Social/Behavioral Sciences (6 Hours)

ADS 1013	Animal Agriculture & Society (Food for Thought)
	***Cross Listed as PO 1013**
AEC 2713	Introduction to Food and Resource Economics
AN 1103	Introduction to Anthropology
AN 1143	Introduction to Cultural Anthropology
AN 1543	Discovering Archaeology: Past Meets Present
AN 2403	Introduction to the Study of Language
	***Cross Listed as EN 2403**
CO 1223	Introduction to Communication Theory
CO 1403	Introduction to the Mass Media
DSCI 2013	Data Science Literacy
EC 1033	Economics of Social Issues
EC 2113	Principle of Macroeconomics
EC 2123	Principle of Microeconomics
EN 2403	Introduction to the Study of Language
EPY 2513	Human Growth and Development
EPY 3503	Principles of Educational Psychology
EPY 3543	Psychology of Adolescence
FO 4113	Forest Resource Economics
GR 1123	Introduction to World Geography
GR 2013	Human Geography
HON 1173	The West and Wider World
HON 3143	Honors Seminar in Social Science
HDFS 1813	Individual and Family Development
PO 1013	Animal Agriculture & Society: Food for Thought
PS 1113	American Government
PS 1313	Introduction to International Relations
PS 1513	Comparative Government
PSY 1013	General Psychology
PSY 3073	Psychology of Interpersonal Relations
SO 1003	Introduction to Sociology
SO 1103	Contemporary Social Problems
SO 1203	Sociology of Families

Fine Arts (3 Hours)

AAS 1103	African American Music
	***Cross Listed as MU 1103**
ARC 1013	Architectural Appreciation
ART 1013	Art History I
ART 1023	Art History II
ART 1113	Art Appreciation
ART 2063	Global Contemporary Art
ART 2413	History and Appreciation of the Artcrafts
CO 1503	Introduction to Theatre
HON 3175	Honors Seminar in Fine Arts
ID 3643	History of Interiors I
LA 1803	Landscape Architecture Appreciation
MU 1103	African American Music
MU 1113	History and Appreciation of Music
MU 1123	History and Appreciation of American Music
MU 1133	The History of Rock and Roll
MU 1143	The History of Jazz
MU 1163	Introduction to Music in Film
MU 1173	Music of the Beatles
MU 2173	Women in Music
MU 3013	Survey of Western Music History I
PE 1323	History and Appreciation of Dance
PSS 2343	Floral Design

Source: MSU Undergraduate Catalog 2023 – 2024, Academic Policies, Degrees, Degree Requirements, and Scheduling, General Education Requirements

Mississippi State University

CREDIT BY EXAMINATION

Not more than 25 percent of any curriculum may be earned by College-Level Examination Program (CLEP), evaluated military service credits, tutorial, extension courses, and advanced placement exams (a maximum of 20% of the total degree hours can be correspondence courses). Evaluated military service credits are classified as extension work. Correspondence courses must be approved by the dean before being taken by students in residence. Mississippi State University serves as an open testing center for both the General and Subject Examinations.

a. Advanced Placement Examinations.

Students entering Mississippi State University for the first time are allowed credit on the advanced placement examination administered by the College Entrance Examination Board. Grades of Satisfactory (S) appear on the transcript for courses in which advanced placement credit is earned. These courses do not affect grade-point averages. Applicability of such credit to a specific degree is to be determined by the appropriate dean. The following table provides the details on how credit is presently assigned in the various subject areas by the deans.

AP Examination	Score	Hours	Related Course
1. ART HISTORY	3	3	ART 1013
2. BIOLOGICAL SCIENCE (no lab credit)	3	3	BIO 1023
	4	6 or 7	BIO 1123 and BIO 1134
	5	8	BIO 1134 and BIO 1144
3. CHEMISTRY	3	3	CH 1213
	4 or 5	6	CH 1213 and CH 1223
4. COMPUTER SCIENCE			
A Exam	3, 4, or 5	4	CSE 1284
5. COMPUTER SCIENCE PRINCIPLES	3, 4, or 5	3	CSE 2990
6. ECONOMICS			
Macroeconomics	3	3	EC 2113
Microeconomics	3	3	EC 2123
7. ENGLISH			
Language & Comp.	3	3	EN 1103
Language & Comp.	4 or 5	6	EN 1103 and EN 1113
Literature & Comp.	3	3	EN 1103
Literature & Comp.	4 or 5	6	EN 1103 and EN 1113
8. ENVIRONMENTAL SCIENCE	3	3	ENS 2103
9. FRENCH			
Language and Culture	3	3	FLF 1113
Language and Culture	4	6	FLF 1113 and FLF 1123
Language	5	9	FLF 1113, FLF 1123, and FLF 2133
Culture	5	9	FLF 1113, FLF 1123, and FLF 2133
10. GERMAN			
Language and Culture	3	3	FLG 1113
Language and Culture	4	6	FLG 1113 and FLG 1123
Language	5	9	FLG 1113, FLG 1123, and FLG 2133
Culture	5	9	FLG 1113, FLG 1123, and FLG 2133
11. GOVERNMENT and POLITICS			
Comparative	3	3	PS 1513
United States	3	3	PS 1113
12. HISTORY			
American	3	3	HI 1063
	4 or 5	6	HI 1063 and HI 1073

AP Examination	Score	Hours	Related Course
European	3	3	HI 1213
	4 or 5	6	HI 1213 and HI 1223
World	3	3	HI 1163
	4 or 5	6	HI 1163 and HI 1173
13. HUMAN GEOGRAPHY	3	3	GR 2013
14. LATIN	3	6	FLL 1113 and FLL 1123
	4	6	FLL 1123 and FLL 2133
	5	6	FLL 2133 and FLL 2143
15. MATHEMATICS			
AB Exam	3, 4 or 5	3	MA 1713
BC Exam	3	3	MA 1713
	4 or 5	6	MA 1713 and MA 1723
16. STATISTICS	3	3	ST 2113
17. PHYSICS (no lab credit)			
CI Exam - MECH	3	3	PH 1113
	4 or 5	3	PH 2213
CII Exam - E & M	3	3	PH 1133
	4 or 5	3	PH 1133 or PH 2223
18. PHYSICS I	3, 4, or 5	3	PH 1113
19. PHYSICS II	3, 4, or 5	3	PH 1123
20. PSYCHOLOGY	3	3	PSY 1013
21. SPANISH			
Language and Culture	3	3	FLS 1113
Language and Culture	4	6	FLS 1113 and FLS 1123
Language and Culture	5	9	FLS 1113, FLS 1123, and FLS 2133
Literature and Culture	5	9	FLS 1113, FLS 1123, and FLS 2133
22. MUSIC	3	3	MU 1213

As more high schools develop Advanced Placement courses, Mississippi State University will consider their inclusion in this listing for credit.

b. College-Level Examination Program (CLEP).

Academic credit on the Subject Examinations is awarded to students who are enrolled at the University and who make a scaled score of 50 or above (see exceptions below). Credit is neither awarded nor accepted for transfer credit for the General Examinations. Credit is considered the same as extension credit and is subject to the same limitations. The applicability of credit toward degree requirements is determined by the dean and/or department head concerned. At present, the only courses for which credit may be obtained through the CLEP Program are these:

ACC 2013	Principles of Financial Accounting	3
BIS 1012	Introduction to Business Information Systems	2
BIO 1023	Plants and Humans (requires score of 50-59)	3
BIO 1123 & BIO 1134	Animal Biology and Biology I (requires score of 60-69)	7
BIO 1134 & BIO 1144	Biology I and Biology II (requires score of 70-80)	8
CH 1213	Chemistry I	3
CH 1223	Chemistry II	3
EC 2113	Principles of Macroeconomics	3
EC 2123	Principles of Microeconomics	3
EPY 2513	Human Growth and Development	3

EPY 3503	Principles of Educational Psychology	3
FLF 1113	French I (score of 53 or above)	3
FLF 1123	French II (score of 53 or above)	3
FLG 1113	German I (score of 53 or above)	3
FLG 1123	German II (score of 53 or above)	3
FLS 1113	Spanish I (score of 53 or above)	3
FLS 1123	Spanish II (score of 53 or above)	3
HI 1063	Early U.S. History	3
HI 1073	Modern U.S. History	3
HI 1213	Early Western World	3
HI 1223	Modern Western World	3
MA 1313	College Algebra	3
MA 1453	Precalculus with Graphing Calculators	3
MA 1713 & MA 1723	Calculus I and Calculus II	6
PS 1113	American Government	3
PSY 1013	General Psychology	3
SO 1003	Introduction to Sociology	3

For further information about CLEP and a form for application to take the tests, please write to: Computer Based Testing, P.O. Box 9747, Mississippi State, MS 39762, or call (662) 325-6610.

c. The International Baccalaureate.

The International Baccalaureate program is a comprehensive and rigorous two-year curriculum, leading to examinations, for students between sixteen and nineteen years of age. To accommodate differences among cultures regarding academic standards, it is a deliberate compromise between the specialization required in some national systems and the breadth preferred in others. The general objectives of the IB are to provide students with a balanced education; to facilitate geographic and cultural mobility; and to promote international understanding through a shared academic experience. The student who satisfies its demands demonstrates a strong commitment to learning, both in terms of the mastery of subject content and in the development of the skills and discipline necessary for success in a competitive world.

All IB Diplomas candidates are required to offer one subject from each of the groups. At least three and not more than four of the six subjects are taken at the Higher level, the others at the Subsidiary level. Each examined subject is graded on a scale of 1 (minimum) to 7 (maximum). The award of the Diploma requires a minimum total of 24 points and the satisfactory completion of three additional requirements: the Extended Essay of some 4000 words, which provides the first experience of the independent research paper; a course entitled Theory of Knowledge (ToK), which explores the relationships among the various disciplines and ensures that students engage in critical reflection and analysis of the knowledge acquired within and beyond the classroom; the compulsory participation in Creativity, Action, and Service (CAS) extracurricular and community-service activities. Bonus points may be awarded for the exceptional essay or performance in Theory of Knowledge.

Mississippi State University recognizes the IB Program. Credit will be considered for the higher level subject examinations with scores of 5, 6 or 7 pending approval of the various colleges, schools and major departments of the university. Some subject areas may consider a score of 4.

Mississippi State University awards credit in the following areas:

IB Credit	Score/Level Required	Credit to Award
ENGLISH	5, 6, or 7 HIGHER LEVEL	EN 1103 and EN 1113
CHEMISTRY	5, 6, or 7 HIGHER LEVEL	CH 1213 and CH 1223
HISTORY		
American	6 STANDARD LEVEL	HI 1063
	4 HIGHER LEVEL	HI 1063
	5 or 6 HIGHER LEVEL	HI 1063 and HI 1073
Asian	6 STANDARD LEVEL	HI 1313
	4 HIGHER LEVEL	HI 1313
	5 or 6 HIGHER LEVEL	HI 1313 and HI 1323
European	6 STANDARD LEVEL	HI 1213

IB Credit	Score/Level Required	Credit to Award
	4 HIGHER LEVEL	HI 1213
	5 or 6 HIGHER LEVEL	HI 1213 and HI 1223
Islamic	4 HIGHER LEVEL	HI 1163
	5 OR 6 HIGHER LEVEL	HI 1163 and HI 1173
BIOLOGY	4 STANDARD LEVEL	BIO 1023 or BIO 1123
	5, 6, or 7 STANDARD LEVEL	BIO 1023 and BIO 1123
	6 HIGHER LEVEL	BIO 1134
	7 HIGHER LEVEL	BIO 1134 and BIO 1144
PHYSICS	5 HIGHER LEVEL	PH 1113
	6 HIGHER LEVEL	PH 1113 and PH 1123 or PH 2213
	7 HIGHER LEVEL	waiver for PH 1113 and credit for PH 1123 and PH 1133 or PH 2213 and PH 2223
ECONOMICS	5, 6, or 7 HIGHER LEVEL	EC 2113 and EC 2123
PSYCHOLOGY	5, 6, or 7 HIGHER LEVEL	PSY 1013
SPANISH	4 HIGHER LEVEL	FLS 1113 and FLS 1123
	5, 6, or 7 HIGHER LEVEL	FLS 2133 and FLS 2143
LATIN	4 HIGHER LEVEL	FLL 1113 and FLL 1123
	5, 6, or 7 HIGHER LEVEL	FLL 2133 and FLL 2143
FRENCH	4 HIGHER LEVEL	FLF 1113 and FLF 1123
	5, 6, or 7 HIGHER LEVEL	FLF 2133 and FLF 2143
GERMAN	4 HIGHER LEVEL	FLG 1113 and FLG 1123
	5, 6, or 7 HIGHER LEVEL	FLG 2133 and FLG 2143

A final official IB transcript will be sent by the International Baccalaureate North America (IBNA) regional office following the grade awarding and upon the request of the student. The document will indicate the level of the subjects, the grade awarded in each, the total point score and the completion of the additional Diploma requirements. Results are available in late July for May session candidates.

e. Cambridge International

Students entering Mississippi State University for the first time may be granted credit for examinations administered by Cambridge International. Courses taken as part of the AS level or A level curricula will be considered. Grades of Satisfactory (S) appear on the transcript for courses in which Cambridge credit is earned. These courses do not affect grade-point averages. Applicability of such credit to a specific degree is to be determined by the appropriate dean. Contact the Office of the Registrar for details on how credit is presently assigned in the various subject areas.

Mississippi State, MS 39762 | 662.325.2323

// ex: printoption:/pdf/undergraduate.pdf|Undergraduate Catalog|A PDF of the entire Undergraduate catalog.|/undergraduate/

MINORS, CERTIFICATE PROGRAMS & ACCELERATED PROGRAM INFO

College of Business Minors

Office of Academic Advising
106 McCool Hall 662.325.1890

BUSINESS STUDENTS PURSUING A MINOR

COB students may obtain a minor in all EXCEPT General Business. COB students may be eligible for a double major and should see an academic advisor in 106 McCool.

NON-BUSINESS STUDENTS PURSUING A MINOR

Non-Business students may broaden their education as well as expand their competitiveness in the job market with a minor in business. Students interested in pursuing a minor should consult with their major advisor to determine which one would best compliment their major.

Non-Business students should follow these steps:

1. Twelve (12) hours must be taken at the MSU main campus in Starkville.
2. You must meet the required 2.50 MSU AND Overall GPA. Only one D is accepted in the minor courses.
3. Complete the Request to Add a Minor in the COB Academic Advising Center (106 McCool Hall) or online - www.business.msstate.edu/curstu/undergrad/advising/minors/index.php
4. Follow the course requirements and pre-requisites. No course substitutions are allowed.
5. COB enforces pre-requisites due to its prestigious AACSB accreditation. Consider pre-requisites when choosing a minor course.
6. In order to ensure recognition for a minor, include the minor on the application for your degree. The minor and major must be declared simultaneously.
7. The minor will be recorded on the transcript, but does not appear on the diploma.

MINORS AVAILABLE

ACCOUNTING – 15 Hours

This minor is complimentary to other majors and offers basic career preparation including public, private and governmental accounting.
Note: Offered through the School of Accountancy. Visit 300 McCool Hall or call 325-1631 for more info.

Required:
ACC 3023 Intermediate Accounting I
ACC 3033 Intermediate Accounting II

Choose any 3 of the following:
ACC 3003 Accounting Info Systems I
ACC 3013 Cost Accounting
ACC 3053 Accounting Info Systems II
ACC 4013 Income Tax I
ACC 4063 Income Tax II
ACC 4033 Auditing
ACC 4023 Advanced Accounting
ACC 4043 Municipal & Gov Accounting
ACC 4053 International Accounting

BUSINESS ADMINISTRATION – 21/22 Hours

Prepare for entrance into the world of business and/or the MBA program. Students will become familiar with basic concepts and techniques necessary for analyzing business environments, making sound business decisions, and planning one's career.

Choose any 7 of the following:

BL	2413	Legal Environment of Business
*ACC	2013	Financial Accounting
ACC	2023	Managerial Accounting
EC	2113	Macroeconomics
EC	2123	Microeconomics
*FIN	3123	Financial Management
MKT	3013	Principles of Marketing
*MGT	3113	Principles of Management
BIS	3233	Management Information Systems
*BQA	2113	Business Statistical Methods I
*BQA	3123	Business Statistical Methods II

*Pre-requisites for the MBA program.

BUSINESS INFORMATION SYSTEMS – 15 Hours

Students interested in business and technology may wish to pursue a minor in Business Information Systems. Typical career paths range from programmer to systems analyst, database administrator, network administration, IT manager, and Chief Information Officer.

Note: A minimum GPA of 3.00 is required in the 15 hours.

Required (**if minor has been started before summer 2015**):
BIS 1733 Visual Basic Prog.
BIS 1753 Intro to Business COBOL

Required (**if minor is started summer 2015 or after**):
BIS 1523 Web Development I
BIS 2523 Web Development II

Choose any 3 of the following:
BIS 3523 Advanced Languages I
BIS 3753 Business Database Systems
BIS 4113 BIS Security Management
BIS 4513 Microcomputers and Networks
BIS 4523 Business Programming w/ COBOL (repl. Adv Lang II)
BIS 4533 Decision Support Systems
BIS 4753 Structured Systems Analysis & Design
BIS 4763 BIS Senior Seminar

INSURANCE – 15 Hours

This minor provides students with the expertise to pursue insurance related careers such as insurance underwriter, sales/agency management, claims adjustor, financial planner and actuary. The insurance minor enhances many existing business majors including business administration, business information systems, management, and marketing. The minor also complements many non-business majors such as mathematics, statistics, communication, and psychology.

Required:
INS 3103 Principles of Insurance (Jr standing)
INS 3203 Property and Casualty Insurance
INS 3303 Life and Health Insurance
INS 4503 Enterprise Risk Management (INS 3103)(Only in Spring)
Choose one of the following:
INS 3403 Financial Planning (FIN 3123)
INS 3503 Employee Benefits

ECONOMICS – 15 Hours

Select at least 15 hours of economics coursework. Three hours from finance (FIN), agricultural economics (AEC), IE 3913 or FO 4113 may be applied with approval from the advisor.

Note:, ECON minors must have grades of C in all upper level (3000-4000 level) ECON courses.

Required:
EC 2113 Principles of Macroeconomics
EC 2123 Principles of Microeconomics

Choose any 3 of the following:
EC 3113 Intermediate Macroeconomics*
EC 3123 Intermediate Microeconomics*
EC 3333 Managerial Economics
EC 3423 Economics of Regulation & Antitrust
EC 3513 Comparative Economic Policy
EC 4000 Directed Individual Study
EC 4183 US Economic History
EC 4213 Personnel Economics
EC 4223 Labor Law & Employment Policy
EC 4233 Labor Economics
EC 4303 International Economic Development
EC 4323 International Economics
EC 4423 Public Finance
EC 4433 State & Local Finance
EC 4523 History of Economic Thought
EC 4643 Economic Forecasting & Analysis
EC 4713 Industrial Organization
EC 4990 Special Topics in Economics

*Offered fall and spring and once during the summer.

ENTREPRENEURSHIP – 16 Hours

In partnership with the MSU Entrepreneurship Center, the College of Business offers a minor in Entrepreneurship to help MSU students prepare for launching and growing new business ventures. The entrepreneurship minor is available to any MSU student, regardless of major. The Minor in Entrepreneurship is designed to complement the Engineering Entrepreneurship Certificate program by allowing engineering majors to benefit from more advanced coursework in entrepreneurship.

Required:
MGT 3323 Entrepreneurship
MGT 3333 Field Studies in Entrepreneurship
BL 4243 Legal Aspects of Entrepreneurship
FIN 4323 Entrepreneurial Finance
MKT 4423 Strategic Brand Management
GE 3011 Engineering Entrepreneurship Seminar

FINANCE – 15 Hours

Engineering, pre-med, communications, and agribusiness majors benefit from this minor. Students improve understanding of the management of financial institutions and the management of financial assets (such as personal, organizational, and governmental funds as well as business assets).

Required:
FIN 3123 Financial Management
FIN 3723 Financial Markets & Institutions
FIN 4223 Intermediate Financial Management
FIN 4423 Investments
FIN or REF elective at 3000- level or above

MANAGEMENT – 18 Hours

Students in areas ranging from engineering to landscape architecture may wish to pursue careers requiring the management of people.

Required:
MGT 3113 Principles of Management
MGT 3513 Intro Human Resource Management
MGT 3813 Organizational Behavior

Choose any 3 of the following:
MGT 3323 Entrepreneurship
MGT 3333 Field Studies/Entrepreneurship
MGT 3823 Responsible Leadership
MGT 4153 Management Seminar
MGT 4533 Advanced Human Resource Management
MGT 4543 Compensation Management
MGT 4563 Staffing in Organizations
MGT 4613 Cross-Cultural Management
MGT 4713 Quality in Organizations

MARKETING – 18 Hours

Students in areas ranging from communications to human sciences may wish to pursue careers requiring the use of marketing activities.

Required:

MKT	3013	Principles of Marketing
MKT	4413	Consumer Behavior

Choose any 4 of the following:

MKT	3323	International Logistics
MKT	3213	Retailing
MKT	3933	International Marketing
MKT	4033	International Transportation
MKT	4113	Personal Selling
MKT	4123	Advertising
MKT	4143	Sales Management
MKT	4213	Internet Marketing
MKT	4313	Physical Distribution Management
MKT	4333	International Supply Chain Management
MKT	4423	Branding
MKT	4533	Marketing Research
MKT	4613	Services Marketing

REAL ESTATE – 15 Hours

This minor allows students to enhance their undergraduate training and differentiate themselves from their peers. It also satisfies pre-licensing real estate education requirements for all state's salesperson's license and/or most state's broker's license.

Required:

REF	3333	Principles of Real Estate
REF	3433	Real Property Evaluation
REF	4333	Real Estate Law

Choose any 2 of the following:

REF	4153	Real Estate Investments
REF	4253	Mortgage Financing
EC	4313	Intro to Regional Economic Development

Business Analytics-15 Hours

The Minor in Business Analytics is comprised of 15 hours on analytics skills and applications. Students can select from the following:

Analytics Skills (choose 3 out of 4):

BQA	4413/6413	Business Forecasting & Predictive Analytics
BQA	4423/6423	Business Decision Analytics
ECON	4443/6643	Econ Forecasting & Analysis
BIS	3753	Business Database Systems

Analytics Applications (choose 2 out of 6):

ACC	3003	Accounting Systems I
ACC	3053	Accounting Systems II
BIS	4533	Decision Support Systems
MKT	4333	International Supply Chain Management
MKT	4533	Marketing Research
MKT	4033	International Transportation

The minor in Business Analytics is available beginning with the fall 2018 semester

Minor in Mathematics

The minor in mathematics consists of MA 1713, MA 1723, MA 2733, MA 2743, MA 3113, MA 3253, one additional mathematics course at the 3000+ level, and another additional mathematics course at the 4000+ level.

Required Courses	Options for the MA 3000+/4000+ Course Requirements
MA 1713 Calculus I [3 credits] *Prerequisite: ACT Math score of 26 or grade of C or better in MA 1323 or MA 1453*	**One MA 3000+ course and one MA 4000+ course**
MA 1723 Calculus II [3 credits] *Prerequisite: MA 1713*	**Two MA 4000+ courses**
MA 2733 Calculus III [3 credits] *Prerequisite: MA 1723*	**IE 4613/6613 Engineering Statistics and one MA 4000+ course** **Engineering Statistics counts as one of the MA 3000+ courses mentioned above.*
MA 2743 Calculus IV [3 credits] *Prerequisite: MA 2733*	**IE 4733/6733 Linear Programming and one MA 3000+ course** **Linear Programming counts as one of the MA 4000+ courses mentioned above.*
MA 3113 Introduction to Linear Algebra [3 credits] *Prerequisite: MA 1723*	**IE 4733/6733 Linear Programming and one MA 4000+ course** **Linear Programming counts as one of the MA 4000+ courses mentioned above.*
MA 3253 Differential Equations I [3 credits] *Prerequisite: MA 2743*	*See the Courses Tab for prerequisite requirements of all optional courses.*

If you have any questions, please contact the Undergraduate Coordinator.

Minors

Minor in Computer Science

Computer Science has applications in a broad range of disciplines, and students with majors in other fields of study may wish to complement their studies with a minor in computer science. Completion of the minor requirements should prepare the student to pursue a career as a computer applications specialist within his/her major field of study or as an entry-level computer programmer in the general computing environment.

A minor in computer science consists of Introduction to Computer Programming (CSE 1284), Intermediate Computer Programming (CSE 1384), Data Structures and Analysis of Algorithms (CSE 2383), Discrete Structures (CSE 2813), and nine hours of approved Computer Science courses. The approved Computer Science courses include all 3000 and 4000 level Computer Science courses. A maximum of three hours of CSE 4000 (Directed Individual Study) may be applied towards the minor. Computer Engineering and Software Engineering majors are not eligible for the Computer Science minor.

Minor in Software Engineering

Software Engineering is defined in IEEE Standard 610.12 as "the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software." Students that wish to study this area to a limited degree can do so by majoring in a related area and taking a concentration of software engineering classes that constitutes the minor offering (i.e., 21 hours of course work). These 21 hours are chosen to give the student a basic understanding of the tenets of software engineering and will allow students to practice in the field should they desire to so do.

A minor in software engineering consists of CSE 1284, CSE 1384, CSE 2383, CSE 4214, and nine hours of approved upper-division software engineering courses. The list of approved courses includes the following but may consist of other special topics courses as approved by the Department of Computer Science & Engineering: CSE 3213 Senior Design 1, CSE 3223 Senior Design 2, CSE 4233 Software Architecture and Design, CSE 4283 Software Testing and Quality Assurance, CSE 4223 Software Project Management, CSE 4253 Secure Software Engineering.

Minor in Industrial Engineering

Industrial engineering is an academic discipline with applicability to a broad range of students from other majors. Engineering majors specifically may wish to complement their degree programs with a minor in industrial engineering to demonstrate knowledge and competence in industrial engineering areas. Completion of the minor requirements should prepare students to apply fundamental principles of industrial engineering, such as production control, operations improvement, and engineering management, to their chosen career field.

Only students within the Bagley College of Engineering are eligible for a minor in industrial engineering. Students majoring in industrial engineering are not eligible.

A minor in industrial engineering consists of three required courses for all students pursuing the minor and two restricted elective courses:

Course	Title	Credit Hours
IE 3913	Engineering Economy	3
IE 4613	Engineering Statistics 1	3
IE 4333	Production Control 1	3
Choose two additional industrial engineering courses from this list:		
IE 3123/3121	Industrial Ergonomics	4
IE 4113	Human Factors Engineering	3
IE 4173	Occupational Safety Engineering	3
IE 4513	Engineering Administration	3
IE 4533	Project Management	3
IE 4543	Logistics Engineering	3
IE 4553	Engineering Law and Ethics	3
IE 4573	Process Improvement Engineering	3
IE 4653	Industrial Quality Control 1	3
IE 4733	Linear Programming 1	3
IE 4753	Systems Engineering and Analysis	3

Minor in Electrical Engineering

A minor in Electrical Engineering (EE) will prepare students for additional study or employment in electrical engineering fields. Students will become familiar with basic theory and techniques necessary for analyzing electrical and electronics systems and informing their design decisions involving electrical and electronics systems. Academic advising toward the EE minor is available from the ECE Undergraduate Program Coordinator located in 135 Simrall.

Students majoring in electrical engineering and computer engineering are not eligible.

A minimum of 16 hours must be taken to obtain the EE minor. All courses used to earn the EE minor must be taken at MSU. A grade of "C" or better must be earned in all courses for the EE minor. A minimum grade point average of 2.0/4.0 is required in all courses taken as a part of the EE minor.

For all eligible MSU majors, the EE minor consists of three required courses and two restricted elective courses. Note that some course choices may require other courses as prerequisites. Prerequisite courses of note are: PH 2223 Physics II, MA 1723 Calculus II and MA 3253 Differential Equations.

Note: for students who have completed ECE 3443 Signals and Systems during or prior to Fall 2022, Circuits II would not be required. In this case, students would take Intro to Circuits, Intermediate Circuits (Electronics I) and Signals and Systems as required classes for the minor and would take 2 additional classes from the approved list.

Required Courses (11 Hours)	**Credit Hours**
ECE 3413 Introduction to Electronic Circuits or ECE 3423 Circuits I and ECE 3421 Circuits I lab	4
ECE 3433 Circuits II	3
ECE 3244 Electronics I	4
Required Elective Courses (6-8 Hours: Choose 2 of the following.)	3
ECE 3213 Solid-State Electronics	3
ECE 3313 Electromagnetics I	3
ECE 3323 Electromagnetics II	3
ECE 3434 Advanced Electronics Circuits	4
ECE 3443 Signals and Systems	3
ECE 3614 Fundamentals of Energy Systems	4
ECE 4293 Nano-electronics	3
ECE 4313 Antennas	3
ECE 4323 Electromagnetic Compatibility	3
ECE 4333 RF & Microwave Engineering	3
ECE 4413 Digital Signal Processing	3
ECE 4433 Intro to Radar	3
ECE 4613 Power Transmission Systems	3
ECE 4633 Power Distribution Systems	3
ECE 4653 Intro to Power Electronics	3
ECE 4673 Fundamentals of HV Engineering	3
ECE 4813 Communications Theory	3
ECE 4913 Feedback Control Systems I	3
ECE 4923 Feedback Control Systems II	3
ECE 4933 State Space Design	3

Minor in Petroleum Engineering

A minor in Petroleum Engineering (PTE) will prepare students for additional study or employment in the field of petroleum engineering. Students will become familiar with basic theory and techniques necessary for evaluating and managing oil and gas reservoirs and informing their design decisions involving oil and gas recovery. Academic advising toward the PTE minor is available from the CHE Undergraduate Program Coordinator, **Dr. Julie Jessop**.

Students majoring in petroleum engineering are not eligible for this minor. Students majoring in chemical engineering will find it easiest to pair the minor with the **Practice Concentration**.

A minimum of 21 hours must be taken to obtain the PTE minor. All hours earned in the Petroleum Engineering minor program must be taken at MSU. A minimum GPA of 2.5 is required in all courses in the minor program.

For all eligible MSU engineering majors, the PTE minor consists of six required courses and one restricted elective course. Note that some courses may require other courses as prerequisites.

Required Courses	**18 Total Credit Hours**
PTE 3953 – Petroleum Reservoir Rock Properties	3
PTE 3903 – Petroleum Reservoir Fluid Properties	3
PTE 3963 – Drilling	3
PTE 3973 – Petroleum Production Operations	3
PTE 4923 – Completion Design	3
PTE 4903 – Petroleum Reservoir Engineering I	3
Required Elective Course (Choose one of the following.)	**3 Total Credit Hours**
PTE 4913 – Petroleum Reservoir Engineering II	3
PTE 4953 – Formation Evaluation	3
PTE 4963 – Oil Recovery Methods	3

Why choose the Bagley College of Engineering?

Global Engineering Leadership **minor**

With today's integrated global economy, engineers must understand other cultures, other ways of doing business, and be a part of collaborations that span the globe. To advance in their careers, modern engineers must have not only a strong engineering background, but also cross-cultural experience and management skills.

The minor in **Global Engineering Leadership** is designed to enhance students' knowledge of engineering practice in the global marketplace. Students completing this program will develop proficiency in a foreign language, have experience living and studying in a foreign country, and be familiar with engineering leadership and management techniques.

Curriculum Outline

Required Hours

GE 3813 - Challenges in Global Engineering — 3

Foreign language — 6

*Must be a modern language. The 6 credit hours must be of the same foreign language.

FL 1113 - Language I
FL 1123 - Language II

Relevant Overseas Engineering Experience — 3

*Requires approval to apply towards minor. Please submit approval form located on site.

Examples include:
- MSU Faculty-led Study Abroad in an engineering course
- International Engineering Internship
- Semester-long Engineering Exchange Program
- Overseas Service Learning (e.g. Engineers Without Borders)

Does not require travel - taught on Starkville campus (Spring 2021):
- GE 4990 - Sustainable Humanitarian Engineering

Leadership Electives — 6

BL 4273 - International Business Law
CE 4703 - Construction Engineering and Management
CE 4743 - Analysis and Mitigation of Conflicts, Claims and Disputes
CE 4903 - Civil Engineering Comprehensive
CSE 3981 - Social and Ethical Issues in Computing
CSE 4223 - Managing Software Projects
GE 2713 - Introduction to Engineering and Public Policy
GE 3011 - Engineering Entrepreneurship Seminar
GE 4990 - Sustainable Humanitarian Engineering
IB 4103 - International Business
EC 4303 - International Economic Development
EC 4323 - International Economics
IE 3913 - Engineering Economy I
IE 4513 - Engineering Administration
IE 4533 - Project Management
IE 4553 - Engineering Laws and Ethics
ISE 4103 - Cross-Cultural Leadership
MGT 3823 - Socially Responsible Leadership
MGT 4613 - Cross-cultural Management
MKT 3323 - International Logistics
MKT 4033 - International Transportation
MKT 4333 - International Supply Chain Management

bagley.msstate.edu/gel-minor

Mississippi State University
James Worth Bagley College of Engineering

THRIVE IN FIVE

The Bagley College of Engineering is proud to offer accelerated degree programs through Mississippi State University's Thrive in Five initiative. Accelerated programs are designed to allow highly qualified undergraduate students to count nine credit hours of their bachelor's degree towards their graduate degree program. All students must apply and be admitted to an accelerated program prior to enrolling in the graduate level classes.

General Requirements:

- Be enrolled at MSU in an undergraduate degree program in the Bagley College of Engineering
- Have completed a minimum of 60 credit hours towards a bachelor's degree (may vary by program)
- Have an overall GPA of 3.5 or higher for all undergraduate work

*Additional requirements may vary by program.

bagley.msstate.edu/thrivein5

PROGRAMS OFFERED

Aerospace Engineering
Biomedical Engineering
Biosystems Engineering
Chemical Engineering
Computer Science
Cyber Security & Operations
Electrical & Computer Engineering
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B.S. / M.S.
B.S. / M.B.A.
Mechanical Engineering
Master of Engineering

To learn more, visit **bagley.msstate.edu/thrivein5** or speak to your advisor today!

MISSISSIPPI STATE UNIVERSITY
JAMES WORTH BAGLEY COLLEGE OF ENGINEERING

Environment and Sustainability Minor

Required Courses (4 hours):

- Introduction to Environmental Science (ENS 2103)
- Introduction to Environmental Science Lab (ENS 2101) or ENS 4102 Practicum

Electives (12 hours):

Student must take three hours from each of three categories: Humanities, Social Sciences, and Science and Engineering. The final 3 hours course may be chosen from any category not directly related to the student's major.

Humanities Elective

- AN 3163 Maritime and Fishing People
- AN 8123 Environmental Anthropology
- AN 8523 Environmental Archaeology
- AN/SO 4173 Environment-Society
- ARC 2713 Passive Building Systems
- ARC 2723 Materials
- HI 3183 World Environmental History
- HI 4193 US Environmental History
- HI 4393/6393 Rural America
- HI 8803 Special Topics Courses
- HI 8973 US Environmental and Agricultural History
- HS/ID 3673 Environments for Special Needs
- LA 4463 Community Food Systems
- LA 4843 Sustainable Communities
- PHI 3313 Environmental Ethics
- REL 3113 Religions and Environment

Social Sciences Elective

- AEC 2223 Sustainability Economics
- AEC 2611 Environmental Economics and Sustainability Seminar
- AEC 3233 Intro to Environmental Economics and Policy
- AEC 4233 Environmental Economics
- AEC 4243 Natural Resource Economics
- AEC 4413 Public Problems of Agriculture
- AEC 8233 Applied Welfare and Env. Economics
- BL 4263 Environmental Law
- FO 1101 Forest Resource Survey
- FO 4343 Forest Administration and Organization

- FO 4413 Natural Resource Policy
- FO/NREC 4353 Natural Resource Law
- LA 3623 Urban Planning
- LA 8731 Seminar in Community Based Planning
- SO 4173 Environment-Society
- SO 4703 Population Problems

Science and Engineering Elective

- ABE 2873 Land Surveying
- ABE 3303 Transport in Bio Engineering
- ABE 4163 Machinery for Agro-Ecosystems
- ABE 4263 Soil and Water Management
- ABE 4803 Biosystems Simulation - Env.
- BIO 2503 Environmental Quality
- BIO 3104 Ecology
- BIO 4213 Plant Ecology
- BIO 4224 Aquatic Botany
- BIO 4324 Soil Microbiology (same as PSS 4314)
- CE 2803 Environmental Engineering Issues
- CE 3501 Water Resource Engineering Lab
- CE 3503 Water Resource Engineering
- CE 3801 Environmental Engineering and Water Resources Engineering Lab
- CE 3823 Environmental Engineering
- CE 4513 Engineering Hydrology
- CE 4523 Open Channel Hydraulics
- CE 4533 Computational Methods in Water Resources Engineering
- CE 4843 Environmental Engineering Chemistry
- CE 4863 Water and Wastewater Engineering
- CE 4883 Engineered Environmental Systems
- CE 4893 Hazardous Waste Management
- CH 4303 Environmental Chemistry
- CHE 4423 Fundamental of Industrial Corrosion
- CHE 4613 Air Pollution Control Design
- CHE 4673 Industrial Microbiology
- CHE 4683 Fund of Biofuels Production
- CHE 4990 Special Topics in CHE - Fund of Biorefineries
- CVM 4513 Environmental Toxicology
- ECE 4613 Power Transmission Systems
- IE 4543 Logistics Engineering
- FNH 4773 Intro. to Environmental Health
- FO 4123 Forest Ecology
- FO 4473 GIS for Natural Resource Management

- FO 4483 Forest Soils
- FO 8163 Nonmarket Forest Values
- FO 8323 Forest Ecophysiology
- FO 8333 Silviculture for Multiple Ecosystem Services
- FO 8433 Ecological Silviculture
- FO 8443 International Forest Resources and Trade
- FO/NREC 3113 Forest Recreation Management
- FO/NREC 4313 Spatial Technology for Natural Resource Management
- FO/NREC 4463 Forest Hydrology and Watershed Management
- FO/PSS/ECE/GR 4411 Remote Sensing Policy
- GG 3133 Intro Environmental Geology
- GG 3603 Intro to Oceanography
- GG 3613 Water Resources
- GG 4304 Principles Sediment Deposition I
- GG 4423 Chemical Hydrogeology
- GG 4443 Principles Sediment Deposition II
- GG 4523 Coastal Environments
- GG 4613 Physical Hydrogeology
- GG 8233 Environmental Geosciences
- GR 2313 Maps and Remote Sensing
- GR 3113 Conservation of Natural Resources
- GR 4613 Applied Climatology
- GR 4643 Physical Climatology
- GR 4813 Natural Hazards
- LA 1333 Landscape Systems
- LA 4514 Ecological Planting Design
- LA 4753 Sustainable Landscape Management
- LA 8711 Seminar in Watershed Management
- ME 4353 Alt Energy Sources
- ME 4543 Combustion Engines
- PSS 3133 Intro to Weed Science
- PSS 3303 Soils
- PSS 4153 Sustainable Agroecology
- PSS 4313 Soil Fertility
- PSS 4314 Soil Microbiology (same as BIO 4324/6324)
- PSS 4333 Soil Conservation
- PSS 4363 Sustainable Nursery Production
- PSS/ABE 2543 Precision Agric. I
- PSS/ABE 4543 Precision Agric. II
- SBP 1103 Intro to Sustainable Bioproducts
- SBP 3123 Biomass to Bioproducts
- SBP 4213 Deterioration and Preservation of Biomaterials

- SBP 4313 Bioproducts and the Environment
- SBP 8013 Advanced Wood Science and Technology
- SBP 8133 Environmental Issues in SBP
- WFA 4183 Principles and Practices of Aquaculture
- WFA 4373 Principles of Conserv Ag
- WFA 4463 Human Dimensions of Wildlife Management
- WFA 4623 Conservation Biology
- WFA 4633 Problem Solving in Conservation Biology
- WFA 4881 Current Topics in Conservation Biology

Assessment and Issuance of Certificate and/or Minor:
The ENSC Advisory committee will review the candidate's records to determine if course and grade requirements have been met. If all requirements have been met, the committee will submit the student's name to the Office of the Provost for certification and/or the student's college for the minor. The Office of the Registrar will also be notified to document the student's transcript accordingly. For those participating in the certificate program, a certificate will be issued with the degree received in the student's program.

FOR MORE INFORMATION, VISIT: https://www.ens.msstate.edu/

Information Assurance Certificate

Contact Information

Dr. George Trawick at **gtrawick@cse.msstate.edu**

Return forms to: Mrs. Pam Bobo at **pbobo@cse.msstate.edu**

Information Assurance Certificate Application - Each student who wishes to participate in the program must complete the application and submit it to the appropriate contact (listed above).

Requirements

A minimum of 15 semester credit hours must be completed for award of the Information Assurance Professional certificate. Successful completion of the certificate requires completion of all courses in List A and any two from List B below. Please indicate the semester in which the course was completed in the space preceding the course number. Additionally, the IA Professional Certificate is only awarded at the same time as a degree in computer engineering, computer science, electrical engineering, industrial engineering, software engineering, or information systems.

The list of courses for the Information Assurance Certificate is given below:

List A (9 hours):

INFOSEC Professional Certificate Core Courses:

- CSE 4243/6243 - Information and Computer Security
- CSE 4273/6273 - Introduction to Computer Forensics
- CSE 4383/6383 - Network Security

List B (6 hours):

- CSE 4153/6153 - Data Communications and Networks
- CSE 4733/6733 - Operating Systems I
- CSE 4503/6503 - Database Management Systems
- BIS 4513/6513 - Local Area Networks
- BIS 4113/6113 - BIS Security Management
- BIS 3753 - Business Database Systems (MIS Students only)
- BIS 8313 - Advanced Database Design Administration (MIS Students only)
  [NOTE: Either BIS 3753 or BIS 8313 may be counted by MIS students – not both.]
- Any Advanced (4/6000 level or greater) IA course approved by the certificate administrative point of contract. These courses will typically be special topics courses offered by CSE or the College of Business.

Automotive Certificate

Contact Information

Dr. John Ball at **jeball@ece.msstate.edu**

For undergraduates, during your final semester please email the contact above for approval.

Program Information

The Automotive Engineering Certificate was developed in support of the automotive manufacturing companies in the state of Mississippi to provide students an opportunity to focus on engineering knowledge and issues related to the design of vehicle systems and their production. The program is multi-disciplinary, allowing students from all areas of engineering to participate. Course work can be selected from aerospace engineering, chemical engineering, civil engineering, electrical and computer engineering, computer science engineering, engineering mechanics, industrial engineering, and mechanical engineering. All students are required to participate in a vehicle design/construction experience which must be approved by the director of the automotive engineering certificate and will be designated as a three-hour directed individual study (4000-level for undergraduate students/7000-level for graduate students) course. Membership in the student section (or appropriate level) of the Society of Automotive Engineers is strongly encouraged.

Requirements

To meet the requirements for the Automotive Engineering Certificate, you must complete 15 hours of designated courses. These include one from the Level I list, two from the Level II list, the Automotive Engineering course, and a DIS related to a team experience in automotive engineering.

At least two of the courses must be in addition to the courses required for the student's graduation from his/her major.

For graduate students, **the student's graduate committee will determine how many of the courses** taken for the Certificate fulfill course requirements for the student's graduate degree.

Level I (3 hours):

- ME 3523 - Thermodynamics II
- ME 3423 - Mechanics of Machinery
- ME 3533 - Thermodynamics
- CHE 3123 - Chemical Engineering Thermodynamics II
- IE 3124 - Industrial Ergonomics
- IE 3913 - Engineering Economy I
- IE 3323 - Manufacturing Processes

- ECE 3414 - Fundamentals of Energy Systems
- ECE 3163 - Signals and Systems
- CSE 2383 - Data Structures and Analysis of Algorithms
- CSE 3324 - Distributed Client/Server Programming
- ASE 3213 - Aircraft Structures I
- ASE 3333 - Aerothermodynamics
- CE 3113 - Transportation Engineering

Level II (6 hours):

- ME 4123 - Failure of Engineering Materials
- ME 4463 - Engineering Design
- ME 4543 - Combustion Engines
- CHE 4613 - Air Pollution Control Design: Theory and Practice
- CHE 4423 - Fundamentals of Industrial Corrosion
- CHE 4490 - Special Topics: Fuel Cells
- IE 4113 - Human Factors Engineering
- IE 4533 - Project Management
- IE 4753 - Systems Engineering and Analysis
- ECE 4653 - Introduction to Power Electronics
- ECE 4913 - Feedback Control Systems I
- ECE 4723 - Embedded Systems
- ECE 4833 - Data Communications and Computer Networks
- CSE 4153 - Data Communications and Computer Networks
- CSE 4214 - Introduction to Software Engineering
- CSE 4233 - Software Architecture
- CSE 4283 - Software Testing and Quality Assurance
- CSE 4733 - Operating Systems I
- ASE 4553 - Engineering Design and Optimization
- EM 4133 - Mechanics of Composite Materials
- CE 4103 - Pavement Design
- CE 4133 - Geometric Design of Highways
- CE 3143 - Traffic Engineering

Automotive Engineering course (3 hours)

DIS related to a team experience in automotive engineering (3 hours)

Energy Certificate

Contact Information

Dr. Heejin Cho at **cho@me.msstate.edu**
Dr. Masoud Karimi at **karimi@ece.msstate.edu**

Energy Certificate Application - Each student who wishes to participate in the program must complete the application and submit it to the committee (listed above).

Program Information

The Energy Certificate is open to undergraduate and graduate students in good standing at MSU.

This program has been designed for engineering students who plan to pursue a career in energy related fields. The Energy Certificate utilizes courses in most MSU engineering programs plus a required course in alternate energy sources. Students who successfully complete the Energy Certificate will have acquired significant energy engineering expertise in their related engineering disciplines as well as an interdisciplinary overview of energy and sustainable energy concepts.

Upon completion of the Energy Certificate, students should have achieved the following student learning outcomes:

- Demonstrated an awareness and broadened perspective of energy issues.
- Developed a more in-depth technical understanding of an energy area(s).
- Successfully gained knowledge of and perspective for alternate energy sources.

The Energy Certificate Committee will review the candidates' records to determine if course and grade requirements have been met. If all requirements have been met, the committee will submit the candidates' name to the Dean of Engineering for certification. The Energy Certificate will be awarded at the time of completing a degree from MSU for degree-seeking students and the Dean of Engineering will notify the Office of the Registrar that the candidate has completed the Energy Certificate program (international exchange students are exempt from this requirement).

Requirements

To meet the requirements for the Energy Certificate, a student must complete with a grade of "C" or better at least 15 hours of courses as designated in the Level I, Level II, and Level III categories listed below. Two of the Level I, II, or III courses must be above the degree requirements of the student.

The list of courses for the Energy Certificate is given below:

Level I (6 hours):

All students must complete one course in thermodynamics and one course in circuits:

Thermodynamics:

- CHE 3113 - Chemical Engineering Thermodynamics I
- ME 3513 - Thermodynamics I
- ASE 3333 - Aerothermodynamics

Circuits:

- ABE 3413 - Bioinstrumentation I
- ECE 3183 - Electrical Engineering Systems
- ECE 3413 - Introduction to Electronic Circuits

Level II (3 hours):

All students must complete the following course:

- ME 4353 - Alternate Energy Sources

Level III (6 hours):

All students must complete two senior-level courses related to energy:

- ABE 4423 - Bioinstrumentation II
- ABE 4803 - Biosystems Simulation
- ABE 4844 - Sustainable Communities (same as LA 4844)
- ABE 4990 - Special Topics in Agricultural and Biological Engineering

- ASE 4413 - Aircraft Propulsion
- ASE 4343 - Compressible Aerodynamics
- ASE 4443 - Spacecraft Propulsion
- ASE 4423 - Introduction to Computational Fluid Dynamics
- ASE 4990 - Special Topics in Aerospace Engineering

- CE 4893 - Hazardous Waste Management
- CE 4990 - Special Topics in Civil Engineering

- CHE 3223 - Mass Transfer Operations
- CHE 4113 - Chemical Reactor Design
- CHE 4134 - Process Design
- CHE 4233 - Chemical Plant Design
- CHE 4613 - Air Pollution Control Design: Theory and Practice
- CHE 4990 - Special Topics in Chemical Engineering

- GG 4063 - Development of Fossil Fuel resources

- ECE 3614 - Fundamentals of Energy Systems
- ECE 4613 - Power Transmission Systems
- ECE 4633 - Power Distributions Systems
- ECE 4643 - Power Systems Relaying and Control
- ECE 4653 - Introduction to Power Electronics
- ECE 4663 - Insulation Coordination in Electric Power Systems
- ECE 4990 - Special Topics in Electrical or Computer Engineering

- FO 4123 - Forest Ecology
- FP 4023 - Wood Chemistry
- FP 4990 - Special Topics in Forest Products

- ME 4333 - Energy Systems Design
- ME 4343 - Intermediate Heat Transfer
- ME 4373 - Air Conditioning
- ME 4373 - Power Generation Systems
- ME 4383 - Heat Exchanger Design
- ME 4543 - Combustion Engines
- ME 4823 - Compressible Flow and Turbomachinery
- ME 4833 - Intermediate Fluid Mechanics
- ME 4990 - Special Topics in Mechanical Engineering

Entrepreneurship Program

Contact Information

Dr. Reuben Burch at **burch@ise.msstate.edu**

Certificate Application

This program has been designed for engineering students who plan to pursue a career combining technical and business skills. This could include a business startup or working for an entrepreneur in the early years of the business. The certificate also enhances the engineering program for students interested in corporate management.

The Entrepreneurship Certificate Program is comprised of three major parts:

- Coursework
- The Seminar Series
- The "company" or project experience

Requirements

The coursework can be accomplished with a maximum, in most engineering disciplines, of six hours or less of additional coursework over the degree program by utilizing electives. Also, much of the coursework will apply toward the prerequisites for an MBA degree at a later time should the student decide to pursue that path. A GPA of 2.25 on all coursework and no grade less than a "C" can be applied toward the certificate. At most two courses can be online courses.

The completion of 15 hours of coursework from the following business and engineering classes is also required.

- ACC 1203 Basic Industrial Accounting or ACC 2013 Principles of Financial Accounting
- EC 2123 Microeconomics
- IE 3913 Engineering Economy
- MKT 3013 Principles of Marketing
- MGT 3323 Entrepreneurship

In addition, 3 semesters of GE 3011-Engineering Entrepreneurship Seminar must be completed with a grade of "C" or higher.

Project Experience

The "company" or project experience is a real-world engineering experience developing a marketable product or service. In most cases, the certificate candidate can get academic credit through the senior design course or a technical elective. For example, electrical engineering and computer engineering majors can get credit for the senior design project requirement (ECE 4512/4522 and ECE 4521). The "company" experience may be a project proposed by one of the participating companies or by students or faculty members. To complete the requirements for the project experience, the candidate submits a report to the associate dean, which has been approved by both mentors. The project report will include an oral and written presentation of the project. It should include a business plan as well. The business plan may also serve to fulfill the partial course requirement of MGT 3323, Entrepreneurship, which is one of the core courses of the certificate program.

Project Examples

- Harley Transmission Bearing race (ME)
- Wright Medical Impact Hammer (ME)
- Exhaust Control System (ME)
- Youth Chest Protector (Bio E)
- Robotics Application (ECE)
- Resource Planning Software (CS)
- Viking Dishwasher (ECE and ME)

Materials Certificate

Contact Information

Dr. Hongjoo Rhee at **hrhee@me.msstate.edu**
Dr. Rooban Venkatesh K.G. Thirumalai at **rthirumalai@i2at.msstate.edu**

Materials Certificate Checklist - Each student who wishes to participate in the program must complete the checklist with a **Materials Working Group faculty advisor**.

Materials Certificate Application - Each student who wishes to participate in the program must complete the application and submit it to the committee (listed above).

Program Information

The Materials Certificate Program, administered through the Bagley College of Engineering, is available to qualified students who complete an organized plan of study in the interdisciplinary field of materials science and engineering at Mississippi State University.

The University's various departments offer a range of materials-related courses in both the science and engineering fields, such as biomaterials, electronic and semiconductor materials, composites, polymers, metals, ceramics, and construction materials. We also have a wide range of supporting courses in the areas of materials modeling, mechanics, processing, and characterization, along with special topics in fatigue, fracture, and corrosion.

As part of an organized plan of study, including Directed Study courses under the direction of a **Materials Faculty Member**, these courses allow students to pursue an interdisciplinary education and training program tailored to individual interests.

The Materials Certificate Program is available to both traditional and non-traditional students. This allows industry to offer employees further training in materials, as well as provide current university students the opportunity to pursue an interdisciplinary materials specialty.

Requirements

To be admitted to the Materials Certificate Program, students must first successfully complete freshman chemistry (CH 1213, CH 1223), freshman calculus (MA 1713, MA 1723), and physics (PH 2213, PH 2223). If you would like to propose an exception to these courses, it must be discussed with the MWG faculty advisor who will handle each request on a case-by-case basis.

- CHE 4990 - Particle and Crystallization Technology
- ECE 4283 - Semiconductor Processing
- EPP 8144 - Transmission Electron Microscopy
- EPP 8223 - Scanning Electron Microscopy
- FP 4423 - Mechanical Properties of Wood
- ME 4413/6413 - Casting and Joining
- ME 4423/6423 - Machining and Forming
- ME 4624/6624 - Experimental Methods in Materials Research
- PH 4813 - Introduction to Solid State Physics
- XX 8990 - Graduate Special Topics in Materials (approval required)

Directed Study (3 hours)

Please note that 4xxx courses may be taken at the graduate level as 6xxx.

Participating Departments

Materials related course may be found in the following BCoE Departments: **Aerospace**, **Agricultural & Biological**, **Chemical**, **Civil & Environmental**, **Electrical & Computer**, **Industrial & Systems**, and **Mechanical**; as well as in **Chemistry**, **Physics & Astronomy**, and the **College of Forest Resources**.

Other materials related courses are often presented through collaboration with staff at the following Centers: **Center for Advanced Vehicular Systems (CAVs)**, **Center for Computational Sciences (CCS)**, **Geosystems Research Institute (GRI)**, **Institute for Imaging & Analytical Technologies (I^{2}AT)**, **Institute for Clean Energy Technology (ICET)**, and the **Raspet Flight Research Laboratory (RFRL)**.

These departments and programs offer exciting research and education opportunities in a variety of contemporary research fields:

- nanomaterial processing and modeling
- polymers and polymeric composites
- casting and fusion welding
- solid state welding or joining
- fatigue and fracture
- metallurgy
- electronics and semiconductors
- organic superconductors
- ceramics
- corrosion
- waste remediation and recycling
- computational materials
- biomaterials
- tissue engineering substrates
- materials design and selection
- materials characterization techniques

To receive the Materials Certificate, students must then complete four additional courses and a 3 hour Directed Study course under the direction of a faculty member of the **Materials Working Group**. The four traditional courses should be chosen from the "Level" course list.

- One Course from Level I
- Two Courses from level II
- One Course from Level III
- Plus, One Course Directed Study

A grade of "C" or better must be attained in all four courses, including the Directed Study course. Only one course in Level II can be from the Special Topics category.

In all cases, it is the student's responsibility to provide official transcripts of all courses taken prior to admission into the program.

Level I (3 hours):

Introduction to Materials Science

- ABE 3813 - Biophysical Properties of Materials
- CE 3314 - Construction Materials
- CHE 3413 - Engineering Materials
- ME 3403 - Materials in Mechanical Engineering Design

Level II (6 hours):

Basic Materials Properties

- CE 4633 - Concrete Structures
- CH 8990 - Polymer Chemistry
- ECE 4243 - Introduction to Physical Electronics
- EM 4133 - Mechanics of Composite Materials
- EM 4213 - Advanced Mechanics of Materials
- FP 4323 - Physical Properties of Wood
- PH 3613 - Modern Physics
- ME 4113/6113 - Material Selection in Design
- ME 4123/6123 - Failure of Engineering Materials
- ME 4133/6133 - Mechanical Metallurgy
- XX 4990 - Special Topics: Courses under development related to basic materials properties (Contact MWG members of individual department)

Level III (3 hours):

Applied Materials Courses

- ABE 4523 - Biomedical Materials
- ASE 4990 - Space Environment and Effects

Materials Working Group

The **Materials Working Group** is a group of faculty in various disciplines across campus, with a strong interest in promoting teaching and research in the area of materials science and engineering.