CURRICULUM PLAN COLLEGE OF SCIENCE 2020-2021

APPLIED MATHEMATICS

MY ADVISOR'S NAME IS: _____

REQUIREMENTS

CORE CURRICULUM

The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at marshall.edu/gened.

CORE 1: CRITICAL THINKING

CODE	COURSE NAME		HRS	GRADE
FYS 100	First Year Sem Crit Thinking	●	3	
MTH 229	Critical Thinking Course	●	5	
_____	Critical Thinking Course	●	3	

Additional University Requirements

_____	Writing Intensive	3	
_____	Writing Intensive	3	
_____	Multicultural or International	3	
MTH 490/491	Capstone	2	

CORE 2:

CODE	COURSE NAME		HRS	GRADE
ENG 101	Beginning Composition	●	3	
ENG 201	Advanced Composition	●	3	
CMM 103	Fund Speech-Communication	●	3	
MTH 229	Calculus/Analytic Geom I (CT)	● ♦	5	
_____	Core II Natural/Physical Science	●	4	
_____	Core II Humanities	●	3	
_____	Core II Social Science	●	3	
_____	Core II Fine Arts	●	3	

COLLEGE-SPECIFIC

All Applied Mathematics majors are required to take 7 additional hours in Physical or Natural Sciences beyond the Core II requirement. These hours must be from two different areas:

CODE	COURSE NAME		HRS	GRADE
_____	COS Physical/Natural Science	■	4	

CODE	COURSE NAME		HRS	GRADE
_____	COS Physical/Natural Science	■	3	

MAJOR-SPECIFIC

Students who wish to major in Applied Mathematics must take the following courses:

CODE	COURSE NAME		HRS	GRADE
MTH 229	Calculus/Analytic Geom I (CT)	♦	5	
MTH 230	Calculus/Analytic Geom II	♦	4	
CS 110	Computer Science I	♦	3	
MTH 231	Calculus/Analytic Geom III	♦	4	
MTH 300	Intro to Higher Math	♦	4	
MTH 331	Linear Algebra	♦	4	
MTH 490 or 491	Internship or Sr. Seminar (C)	● ♦	2	
_____	MTH Sequence I	♦	3	
_____	MTH Sequence I	♦	3	
_____	MTH Sequence II	♦	3	
_____	MTH Sequence II	♦	3	

CODE	COURSE NAME		HRS	GRADE
_____	Math Elective or Minor or 2nd Major		3	
_____	Math Elective or Minor or 2nd Major		3	
_____	Math Elective or 2nd Major		3	
_____	Math Elective or 2nd Major		4	
_____	300/400 Elective		3	
_____	300/400 Elective		3	
_____	Free Elective		3	
_____	Free Elective		3	
_____	Free Elective		3	
_____	Free Elective		3	
_____	Free Elective		3	
_____	Free Elective		1	

MAJOR INFORMATION

- Sequence Requirements: Applied Mathematics majors must complete two of the following elective sequences:
  1. Differential Equations: MTH335 and (MTH 415 or MTH 416)
  2. Numerical Methods: MTH 443 and (MTH 411 or MTH 442)
  3. Probability and Statistics: STA 445 and STA 446
- Applied Mathematics majors are not required to satisfy the College of Science requirement of a minor in another discipline. However, Applied Mathematics majors often elect to complete a second (or more) major(s) and/or one (or more) minor(s).
- Math electives may not duplicate those used for the sequence requirements. The number of elective courses required depends on whether a student is pursuing an outside minor or a 2nd major. The following are the three options:
  - No Outside Major or Minor: A student may graduate with a major in Applied Mathematics, without a second major or a minor, by completing an additional 4 elective mathematics courses from the list of electives. The major requires 50 credit hours.
  - Outside Minors: A student graduating with a single major in Applied Mathematics, and at least one minor outside the department, must complete at least 2 additional elective mathematics courses from the list below. Effectively, the major requires 44 credit hours.
  - Outside Double Majors: A student graduating with multiple majors, including Applied Mathematics, need not take any additional elective math courses. Effectively, the major requires 38 credit hours. A student pursuing multiple majors, including at least two of the majors in the department, should consult with the undergraduate coordinator or chair of the department for details.
- Math Electives: MTH 335, 360, 361, 405, 411, 415, 416, 427, 428, 430, 431, 440, 442, 443, 448, 449, 450, 452, 455, STA 412, 413, 420, 422, 425, 445, 446, 464, 466, 470
- Since the major is quite flexible, students are expected to consult with the undergraduate coordinator in the department. Before graduation, the undergraduate coordinator must approve the selection of sequences and electives.
- Please check with advisor about course offerings. Not all classes will be offered every semester.
- Mathematics Education Majors may count MTH 450 and (MTH 335 or MTH 427) as a sequence toward the Applied Mathematics Major.
- Forty (40) hours must be earned in courses numbered 300-499.

● Area of Empahsis ♦ Major Requirement ■ College Requirement ● General Education Requirement

Milestone Course: This is a key success marker for your major. See your advisor to discuss importance of this course in your plan of study.

FOUR YEAR PLAN COLLEGE OF SCIENCE 2020-2021

APPLIED MATHEMATICS

MY ADVISOR'S NAME IS: _____

The Marshall University Department of Mathematics prepare students for careers in the mathematical sciences and related disciplines. Graduates of our mathematics programs have had successful careers in government and industry. Our graduates have also earned advanced degrees in mathematics, statistics, engineering, and economics. Our degree programs may also be used to prepare for secondary mathematics certification and for professions such as law or medicine. The department has a dynamic and engaged faculty who focus both on excellent teaching and on many areas of mathematical research.

YEAR ONE

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
FYS 100	First Year Seminar	●	3	
ENG 101	Beginning Composition	●	3	
MTH 229	Calculus/Analytic Geom I (CT)	● ♦	5	
_____	Core II Fine Arts	●	3	
UNI 100	Freshman First Class		1	
TOTAL HOURS			**15**	

Summer Term (optional):

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
MTH 230	Calculus/Analytic Geom II	♦	4	
_____	Core I Critical Thinking	●	3	
CMM 103	Fund Speech-Communication	●	3	
_____	Multicultural or International	●	3	
_____	Core II Social Science	●	3	
TOTAL HOURS			**16**	

YEAR TWO

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
CS 110	Computer Science I	♦	3	
MTH 231	Calculus/Analytic Geom III	♦	4	
ENG 201	Advanced Composition	●	3	
_____	Core II Physical/Natural Science	●	4	
TOTAL HOURS			**14**	

Summer Term (optional):

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
MTH 300	Intro to Higher Math	♦	4	
_____	Core II Humanities	●	3	
_____	Math Elective or Minor or 2nd Major		3	
_____	COS Physical/Natural Science	■	3	
_____	300/400 Elective		3	
TOTAL HOURS			**16**	

YEAR THREE

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
MTH 331	Linear Algebra	♦	4	
_____	MTH Sequence I	♦	3	
_____	Math Elective or Minor or 2nd Major		3	
_____	Free Elective		3	
_____	Free Elective		1	
TOTAL HOURS			**14**	

Summer Term (optional):

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
_____	MTH Sequence I	♦	3	
_____	Writing Intensive	●	3	
_____	Math Elective or 2nd Major		3	
_____	COS Physical/Natural Science	■	4	
_____	Free Elective		3	
TOTAL HOURS			**16**	

YEAR FOUR

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
_____	MTH Sequence II	♦	3	
_____	Writing Intensive	●	3	
_____	Math Elective or 2nd Major		3	
_____	300/400 Elective		3	
_____	Free Elective		3	
TOTAL HOURS			**15**	

Summer Term (optional):

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
MTH 490 or 491	Internship or Sr. Seminar (C)	● ♦	2	
_____	MTH Sequence II	♦	3	
_____	Free Elective		3	
_____	Free Elective		3	
_____	Free Elective		3	
TOTAL HOURS			**14**	

● Area of Empahsis ♦ Major Requirement ■ College Requirement ● General Education Requirement

Milestone Course: This is a key success marker for your major. See your advisor to discuss importance of this course in your plan of study.

APPLIED MATHEMATICS — 2020-2021

INVOLVEMENT OPPORTUNITIES

- SGA
- Campus Activity Board
- JMELI
- Commuter Student Advisory Board
- Community Engagement Ambassadors
- Club Sports
- Religious organizations
- Political organizations
- Residence Hall Association
- Cultural organizations
- National Society of Leadership and Success
- Math Club
- Pi Mu Epsilon Mathematics Association
- Greek Life

RELATED MAJORS

- Statistics
- Data Science
- Business
- Finance
- Economics
- Accounting
- Entrepreneurship
- Health Informatics

GRADUATION REQUIREMENTS

- Have a minimum of 120 credit hours (some colleges or majors require more);
- Have an overall Grade Point Average of 2.00 or higher;
- Have an overall Grade Point Average of 2.00 or higher in the major area of study;
- Have earned a grade of C or better in English 201 or 201H;
- Have met all major(s) and college requirements;
- Have met the requirements of the Core Curriculum;
- Have met the residence requirements of Marshall University, including 12 hours of 300/400 level coursework in the student's college (see section entitled "Residence Requirements" in the undergraduate catalogue);
- Be enrolled at Marshall at least one semester of the senior year;
- Have transferred no more than 72 credit hours from an accredited West Virginia two-year institution of higher education.

Colleges and specific programs may have unique requirements that are more stringent than those noted above. Students are responsible for staying informed about and ensuring that they meet the requirements for graduation.

YEAR ONE

Have questions? Need to talk? You already have a Friend-At-Marshall ready to help you succeed. Find your FAM Peer Mentor here: www.marshall.edu/fam

Stay on the Herd Path and come to class! Class attendance is more important to your success than your high school GPA, your class standing, or your ACT/SAT scores.

In order to graduate on time, you need to take an average of 15 credits per semester. Are you on track? Take 15 to Finish!

Meet with your Advisor to ensure you take the necessary prerequisites that are required for your sequences.

Declare a major before your 30th hour. Participate in a Career Exploration Experience (job shadow) to help decide on your major and career goals.

Join or create a club or organization on campus about a particular issue you care about. Marshall has more than 200 student organizations.

Attend an intercultural festival or event on campus or in town.

YEAR TWO

Are you completing enough credits to graduate on time? Dropping or failing a class can put you behind. Use summer terms to quickly get back on track.

Take a Community Based Learning (CBL) class that connects course content to the community. Stay engaged and make a difference.

Join the Marshall Mentor Network and connect with professionals in your field to discuss your major, career path, and more.

Join the Math Club and/or the Pi Mu Epsilon Mathematics Association

Have you considered adding a minor? Think about personal areas of interest you'd like to explore or how you might enhance your major with a related skill set.

College is a great time to experience the world! Consider studying abroad in the summer, during Spring Break, or for an entire semester.

Meet with a career education specialist to conduct a "gap analysis." Figure out the skills you'll need for the career you want while you still have time to build them.

YEAR THREE

Team up with a faculty mentor and participate in the Virginia Tech Regional Mathematics Competition

No need to wait until graduate school. Discuss undergraduate research opportunities with faculty in your major right now.

Are you on track to graduate? Meet with your advisor for your Junior Eval to make sure you know what requirements you have left.

College is a great time to experience the world! Consider studying abroad in the summer, during Spring Break, or for an entire semester.

Networking is key! Attend a Career Expo to seek employment opportunities and network with employers in your field.

Develop relationships with professors who can serve as future references by attending their office hours.

Think about who can help you grow as a student and a professional (professors, advisors, alumni, etc.)and ask at least one to be your mentor.

YEAR FOUR

This is it! Are you on track to graduate? Meet with your advisor for your Senior Eval to see what requirements you have left.

Prepare to present at the regional MAA Section Meetings or any other conferences. Team up with your faculty research mentor

Apply to be a New Student Orientation Leader or a Campus Tour Guide.

Did you do really well in a hard course? Become a Tutor or a Supplemental Instructor.

Be at the top of your professional game! Prepare a final resume and practice your interview skills with a career coach in Career Education.

Prepare to present at the College of Science Research EXPO in April.

Want to continue your education and increase your opportunities? Talk to a faculty member about whether graduate school fits your career goals.

TRANSFERABLE SKILLS ASSOCIATED WITH THIS MAJOR

- Mathematical Ability
- Attention to Detail
- Strong Oral and Written Communication Skills
- Organizational Skills

ASSOCIATED CAREERS

- Engineering
- Education
- Banking
- Statistics
- Finance
- Actuarial Positions
- Data Science
- Business
- Management
- Employment with Government Agencies

This academic map is to be used as a guide in planning your coursework toward a degree. Due to the complexities of degree programs, it is unfortunate but inevitable that an error may occur in the creation of this document. The official source of degree requirements at Marshall University is DegreeWorks available in your myMU portal. Always consult regularly with your advisor.

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