

College of Arts and Sciences

MATHEMATICS B.S. ACADEMIC MAP 4 YEAR PLAN (EFFECTIVE FALL 2014 AND AFTER)

This map is a term-by-term sample course schedule. The milestones listed to the right of each semester are designed to keep you on course to graduate in four years. The Sample Schedule serves as a general guideline to help you build a full schedule each term. Milestones are courses and special requirements necessary for timely progress to complete a major. Students are urged to consult with departmental advisors frequently during their undergraduate years – to make an appointment call (219) 980-5691 or stop by Hawthorn Hall Room 445. Each student is responsible for planning his/her own program and for meeting the college and departmental degree requirements by the time he/she expects to be graduated. Consult the IUN Bulletin for details and for courses that meet Groups I, II, III and IV requirements in the College of Arts and Sciences.

Major Requirements (42-44 cr.)

- (1) **Required core courses (23 cr.)** MATH-M 215 (5 cr.), MATH-M 216 (5 cr.), MATH-M 301 (3 cr.), MATH-M 311 (4 cr.), MATH-M 360 (3 cr.), MATH-M 391/393 (3 cr.)
- (2) **Applications (12 cr.)** At least four additional 300- or 400 level mathematics courses not used for 1, 3, or 4.
- (3) **Senior Concentration (6 cr.)** Select 2 courses from the following MATH-M 366 (3 cr.), MATH-M 403 (3 cr.), MATH-M 405 (3 cr.), MATH-M 413 (3 cr.)
- (4) **Senior Thesis in Mathematics: (1-3 cr.)** MATH-M 493 (1-3 cr.) (a capstone course)

Sample Schedule

First Semester (Fall)	Hrs.	Grade
MATH-M 215 Calculus I ⁽¹⁾	5	
ENG-W 131 English Composition	3	
Physical/Life Science w/lab- Group IIIA	4-5	
Education course or Elective or Course for a Minor (1/5)	3	
Total hours	15-16	

Milestones

First Semester

Placement Tests determine the first year Mathematics and composition courses.

Complete ENG-W 131 with a C or higher.

All courses in the major must be completed with a grade of C- or higher.

Second Semester

Complete SPCH-S 121 with a C or higher.

Complete ENG-W 231 with a C or higher Intensive writing requirement – part 1.

All courses in the major must be completed with a grade of C- or higher.

Third Semester

All courses in the major must be completed with a grade of C- or higher.

Need at least 6CR in group IIIB.

Fulfill Diversity/Culture requirement.

Remember to consult with an advisor frequently. B.S. degree in Mathematics requires a minor or another major in Education.

Second Semester (Spring)	Hrs.	Grade
MATH-M 216 Calculus II ⁽¹⁾	5	
MATH-M 301 Linear Algebra ^{o(1)} or MATH-M 391/393 Intro to Proof ^{e(1)}	3	
SPCH-S 121 Public Speaking	3	
ENG-W 231 Professional Writing Skills	3	
Total hours	14	

Third Semester (Fall)	Hrs.	Grade
MATH-M 311 Calculus III ⁽¹⁾	4	
MATH-M 360 Probability ^{e(1)} or Elective ^o	3	
Social/Behavioral Science – Group IIIB (1/3)	3	
Amer. Minority Exper. – Group IVB & IIIC (1/3)	3	
Education course or Elective or Course for a Minor (2/5)	3	
Total hours	16	

⁽¹⁾ This course is one of the courses that satisfy requirement (1): **Required Core Courses**. Similarly we will mark courses with (2), (3) or (4) if they could be used to fulfill the requirements of requirements (2), (3), or (4), respectively.

^o Odd-numbered year.

^e Even-Numbered year.

College of Arts and Sciences

MATHEMATICS B.S. ACADEMIC MAP 4 YEAR PLAN (EFFECTIVE FALL 2014 AND AFTER)

Fourth Semester (Spring)	Hrs.	Grade
MATH-M 301 Linear Algebra ^{o(1)} or MATH-M 391/393 Intro to Proof ^{ε(1)}	3	
MATH-M 343 Differential Equations ^{ε(2)} or Math-M 366 Statistics ^{o(2)(3)} or Math-M 405 Number Theory ^{o(2)(3)}	3	
Education course or Elective or Course for a Minor (3/5)	3	
Social/Behavioral Science – Group IIIB (2/3)	3	
Humanities – Group IIIC (2/3)	3	
Total hours	15	

Fourth Semester

All courses in the major must be completed with a grade of C- or higher.

Need at least 6CR in groups IIB and IIIC.

Use Summer sessions to make up any coursework you need to keep on track for graduation.

Fifth Semester (Fall)	Hrs.	Grade
MATH-M 360 Probability ^{ε(1)} or MATH-M 403 Abstract Algebra ^{o(2)(3)}	3	
MATH-M 320 Theory of Interest ^{o(2)} or MATH-M 447/477 Mathematical Models ^{o(2)} or MATH-T 366 Euclidean Geometry ^{ε(2)}	3	
Education course or Elective or Course for a Minor (4/5)	3	
Education courses or Electives	6	
Total hours	15	

Fifth Semester

All courses in the major must be completed with a grade of C- or higher.

B.S. degree in Mathematics requires a minor or another major in Education.

Remember that you need a minimum of 36 credit hours in courses at the 300-400 (junior-senior) level.

Sixth Semester (Spring)	Hrs.	Grade
MATH-M 343 Differential Equations ^{ε(2)} or Math-M 366 Statistics ^{o(2)(3)} or Math-M 405 Number Theory ^{o(2)(3)}	3	
MATH-M 413 Analysis ^{ε(2)(3)} or Elective ^o	3	
Social/Behavioral Science – Group IIIB (3/3) or Humanities – Group IIIC (3/3)	3	
Education course or Elective or Course for a Minor (5/5)	3	
Elective	3	
Total hours	15	

Sixth Semester

All courses in the major must be completed with a grade of C- or higher.

Remember that the total credit hours in groups IIIB and IIIC must be at least 18CR.

Usually Minor requires 15CR.

Complete a Senior Check to verify your remaining requirements - see COAS Recorder for assistance (HH 231).

^o Odd-numbered year.

^ε Even-Numbered year.

College of Arts and Sciences

MATHEMATICS B.S. ACADEMIC MAP 4 YEAR PLAN (EFFECTIVE FALL 2014 AND AFTER)

Seventh Semester (Fall)	Hrs.	Grade
MATH-M 403 Abstract Algebra ^o (2) (3) or Elective ^ε	3	
MATH-M 447/477 Mathematical Models ^o (2) or MATH-M 320 Theory of Interest ^o (2) or MATH-T 366 Euclidean Geometry ^ε (2)	3	
Humanities – Group IIIC (3/3) or Social/Behavioral Science – Group IIIB (3/3)	3	
Education courses or Electives	6	
Total hours	15	

Seventh Semester

May and August graduates must file the application for graduation by October 15.

Remember that the total credit hours in groups IIIB and IIIC must be at least 18CR.

All courses in the major must be completed with a grade of C- or higher.

Eighth Semester (Spring)	Hrs.	Grade
MATH-M 413 Analysis ^ε (2) (3) or Elective ^o	3	
MATH-M 493 Senior Thesis ⁽⁴⁾	1-3	
Education courses or Electives	9	
Total hours	13-15	

Eighth Semester

Write and present a senior thesis.
Intensive writing requirement – part 2.
Remember ≥120 CR needed for graduation.

Celebrate the end of the semester and the completion of your degree!

^o Odd-numbered year.

^ε Even-Numbered year.