**Cleveland State University**
**College of Arts and Sciences**

# Bachelor of Science in Mathematics

## *First Year*

| Fall Semester | Credits | Major | Gen Ed | Spring Semester | Credits | Major | Gen Ed |
|---|---|---|---|---|---|---|---|
| ASC 101 Introduction to University Life | 1 | | INTRO | ENG 102 English II | 3 | | W/C |
| ENG 101 English I | 3 | | W/C | MTH 182 Calculus II | 4 | X | M/QL |
| MTH 181 Calculus I | 4 | X | M/QL | PHY 241 University Physics I (or PHY 243) | 5 | X | NS |
| Social Science Elective** | 3 | | SS | Arts & Humanities Elective** | 3 | | A&H |
| Science Elective^ | 3 | X | | General Elective* | 2 | | |
| | | | | | | | |
| *Semester Total* | *14* | | | *Semester Total* | *17* | | |

## *Second Year*

| Fall Semester | Credits | Major | Gen Ed | Spring Semester | Credits | Major | Gen Ed |
|---|---|---|---|---|---|---|---|
| MTH 281 Multivariable Calculus | 4 | X | | MTH 286 Intro to Differential Equations | 3 | X | |
| MTH 288 Linear Algebra | 3 | X | | MTH 220 Intro to Discrete Mathematics | 3 | X | |
| PHY 242 University Physics II (or PHY 244) | 5 | X | NS | US Diversity Elective | 3 | | DIV |
| Social Science Elective** | 3 | | SS | Science Elective^ | 3 | X | |
| | | | | General Elective* | 3 | | |
| *Semester Total* | *15* | | | *Semester Total* | *15* | | |

## *Third Year*

| Fall Semester | Credits | Major | Gen Ed | Spring Semester | Credits | Major | Gen Ed |
|---|---|---|---|---|---|---|---|
| MTH 300-Level Course^^ | 3 | X | | MTH 396 Junior Seminar | 2 | X | |
| MTH 300-Level Course^^ | 3 | X | | MTH 358 Abstract Algebra (Recommended as 300-level elective) | 3 | X | WAC |
| Science Elective^ | 3 | X | | MTH 300-Level Course^^ | 3 | X | |
| Arts & Humanities Elective** | 3 | | A&H | African American Experience Elective | 3 | | DIV |
| Upper-Division General Elective* | 3 | | | Science Elective^ | 3 | X | |
| | | | | | | | |
| *Semester Total* | *15* | | | *Semester Total* | *14* | | |

## *Fourth Year*

| Fall Semester | Credits | Major | Gen Ed | Spring Semester | Credits | Major | Gen Ed |
|---|---|---|---|---|---|---|---|
| MTH 400-Level Course^^ | 3 | X | | MTH 400-Level Course^^ | 3 | X | |
| MTH 400-Level Course^^ | 3 | X | | MTH 496 Senior Project | 3 | X | WAC; CAP |
| Writing Across the Curriculum Elective | 3 | | WAC | Upper-Division General Elective* | 3 | | |
| Upper-Division General Elective* | 3 | | | Upper-Division General Elective* | 3 | | |
| Upper-Division General Elective* | 3 | | | General Elective* | 3 | | |
| | | | | | | | |
| ***Apply for Spring graduation by the middle of this term*** | | | | | | | |
| *Semester Total* | *15* | | | *Semester Total* | *15* | | |
| *Degree Total (as listed in above sample): 120* ***(120 hours minimum required to earn degree)*** | | | | | | | |

*Assumptions: college-level readiness in MTH & ENG; no Foreign Language Deficiency*

**College/ Program Notes:**

The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of Gen Ed courses, although the M/QL and W/C requirements should be completed during the first year of study.

*Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 120 total credit hours**, of which a **minimum of 42 credit hours** must be upper division (300 or 400-level courses). Depending upon other elective choices made, students may not need as many electives as indicated above, or may need additional electives.

^Science Electives should be chosen from one or any combination of the following fields (courses numbered 200-level or higher): BIO, GEO, EVS, CHM, PHY, and CIS **OR** from STA 347,421,431,435,436,467. Please refer to the Undergraduate Catalog for more details.

^^STA 323 and 424/425 can be used to statisfy the MTH 300 or 400 level electives requirement

^^300/400 Math offerings are on annual rotations and consultation with an advisor is highly recommended to plan them accordingly

**University Notes:**

| **Gen Ed Key:** | |
|---|---|
| INTRO = Introduction to University Life (one course) | SS = Social Sciences (two courses from different departments**) |
| W/C = Writing/Composition (two courses; C or better required) | A&H = Arts & Humanities (two courses from different departments**) |
| M/QL = Mathematics/Quantitative Literacy (two courses) | DIV = Social Diversity (two courses; one US Diversity and one African American Experience) |
| NS = Natural Sciences (two courses, one of which must have a lab) | WAC/SPAC = Writing/Speaking Across the Curriculum (three courses, one in the major; C or better required) |
| | CAP = Capstone |
| ** of the four total SS and A&H courses, one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME) | |

**Cleveland State University**
**College of Arts and Sciences**
Bachelor of Science in Mathematics
CS*Uteach* (license in Education)

| *First Year* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Fall Semester** | **Credits** | **Major** | **License** | **Gen Ed** | **Spring Semester** | **Credits** | **Major** | **License** | **Gen Ed** |
| ASC 101: Intro to University Life | 1 | | | Intro | EDC 200: Diversity in Educational Settings | 3 | | x | DIV |
| ENG 101: College Writing I | 3 | | | W/C | ENG 102: College Writing II | 3 | | | W/C |
| Science Elective | 3 | x | | NS | PHY 241/243/H: University Physics I | 5 | x | | NS |
| PSY 221: Adolescent Psychology | 3 | | x | SS | Social Science Elective (**ALAAME) | 3 | | | SS |
| MTH 181: Calculus I | 4 | x | x | M/QL | MTH 182: Calculus II | 4 | x | x | M/QL |
| | | | | | | | | | |
| *Semester Total* | *14* | | | | *Semester Total* | *18* | | | |

| *Second Year* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Fall Semester** | **Credits** | **Major** | **License** | **Gen Ed** | **Spring Semester** | **Credits** | **Major** | **License** | **Gen Ed** |
| EUT 201: Step 1: Inquiry Approaches to Teaching | 1 | | x | | EDB 242: Introduction to Education | 3 | | x | DIV |
| MTH 288: Linear Algebra | 3 | x | x | | MTH 286: Differential Equations | 3 | x | | |
| MTH 281: Multivariable Calculus | 4 | x | x | | MTH 220: Discrete Mathematics | 3 | x | x | |
| Arts & Humanities Elective (**ALAAME) | 3 | | | A&H | Science Elective | 3 | x | | |
| PHY 242/244/H: University Physics II | 5 | x | | NS | African American Experience Elective | 3 | | | DIV |
| | | | | | | | | | |
| *Semester Total* | 16 | | | | *Semester Total* | 15 | | | |

| *Third Year* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Fall Semester** | **Credits** | **Major** | **License** | **Gen Ed** | **Spring Semester** | **Credits** | **Major** | **License** | **Gen Ed** |
| EDB 302: Psychological Foundations of Education | 3 | | x | WAC | EUT 305: Classroom Interactions | 3 | | x | |
| MTH 301: Introduction to Number Theory | 3 | x | x | | MTH 358: Abstract Algebra | 3 | x | x | WAC |
| MTH 333: Geometry | 3 | x | x | | MTH 4xx Elective | 3 | x | | |
| EDL 305: Content Area Literacy | 3 | | x | | MTH 201: Functions & Modeling | 3 | | x | |
| STA 323: Statistical Methods | 3 | x | x | | Science Elective | 3 | | | |
| | | | | | ESE 400: Introduction to Special Education | 3 | | x | WAC |
| *Semester Total* | *15* | | | | *Semester Total* | *18* | | | |

| *Fourth Year* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Fall Semester** | **Credits** | **Major** | **License** | **Gen Ed** | **Spring Semester** | **Credits** | **Major** | **License** | **Gen Ed** |
| EUT 415: Project Based Instruction in Mathematics | 3 | | x | | EST 499: CS*Uteach* STEM Apprentice Teaching II | 6 | | x | |
| EST 399: CS*Uteach* STEM Apprentice Teaching I | 1 | | x | | EUT 210: Perspectives on Science & Math | 3 | | x | A&H/WAC |
| SCI 311: Research Methods | 3 | | x | WAC | MTH 496: Senior Project | 3 | x | | WAC/CAP |
| STA 424: Probability Theory & Application | 3 | x | x | | | | | | |
| MTH 396: Junior Seminar | 2 | x | | | | | | | |
| MTH 4xx Elective | 3 | x | | | | | | | |
| ***Apply for Spring graduation by the middle of this term*** | | | | | | | | | |
| *Semester Total* | *15* | | | | *Semester Total* | *12* | | | |
| *Degree Total: 123* | | | | | | | | | |

*Assumptions: college-level readiness in MTH & ENG; no Foreign Language Deficiency*

**College/ Program Notes:**

The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of Gen Ed courses, although the M/QL and W/C requirements should be completed during the first year of study.

*Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 120 total credit hours**, of which a **minimum of 42 credit hours** must be upper division (300 or 400-level courses). Depending upon other elective choices made (3 credit hour vs. 4 credit hour courses), students may not need as many general electives as indicated above, or may need additional electives.

**University Notes:**

| **Gen Ed Key:** | |
|---|---|
| INTRO = Introduction to University Life (one course) | SS = Social Sciences (two courses from different departments) |
| W/C = Writing/Composition (two courses; C or better required) | A&H = Arts & Humanities (two courses from different departments) |
| M/QL = Mathematics/Quantitative Literacy (two courses) | DIV = Social Diversity (two courses; one US Diversity and one African American Experience) |
| NS = Natural Sciences (two courses, one of which must have a lab) | WAC/SPAC = Writing/Speaking Across the Curriculum (three courses, one in the major; C or better required) |
| | CAP = Capstone |
| ** of the SS and A&H courses, one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME) | |

**Cleveland State University**
**College of Arts and Sciences**
Bachelor of Science in Mathematics
CS*Uteach* (minor in Physics, license in Education)

***First Year***

| Fall Semester | Credits | Major | License | Gen Ed | Spring Semester | Credits | Major | License | Gen Ed | Summer Semester | Credits | Major | License | Gen Ed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASC 101: Intro to University Life | 1 | | | Intro | | | | | | | | | | |
| ENG 101: College Writing I | 3 | | | W/C | ENG 102: College Writing II | 3 | | | W/C | | | | | |
| Arts & Humanities Elective (**ALAAME) | 3 | | | A&H | PHY 241/243/H: University Physics I | 5 | x | x | NS | | | | | |
| PSY 221: Adolescent Psychology | 3 | | x | SS | BIO 380/381: BIO Content Mid Sch Teach & Lab | 4 | | x | | | | | | |
| MTH 181: Calculus I | 4 | x | x | M/QL | MTH 182: Calculus II | 4 | x | x | M/QL | | | | | |
| | | | | | | | | | | | | | | |
| *Semester Total* | *14* | | | | *Semester Total* | *16* | | | | *Semester Total* | *0* | | | |

***Second Year***

| Fall Semester | Credits | Major | License | Gen Ed | Spring Semester | Credits | Major | License | Gen Ed | Summer Semester | Credits | Major | License | Gen Ed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUT 201: Step 1: Inquiry Approaches to Teaching | 1 | | x | | EDB 242: Introduction to Education | 3 | | x | DIV | STA 323: Statistical Methods | 3 | x | x | |
| MTH 288: Linear Algebra | 3 | x | x | | MTH 286: Differential Equations | 3 | x | | | EDC 200: Div in Edu Settings | 3 | | x | DIV |
| MTH 281: Multivariable Calculus | 4 | x | x | | MTH 220: Discrete Mathematics | 3 | x | x | | | | | | |
| EVS 206: Intro to Environmental Science | 3 | | x | NS | MTH 201: Functions & Modeling | 3 | | x | | | | | | |
| PHY 242/244/H: University Physics II | 5 | x | x | NS | PHY 330: Modern Physics | 3 | | x | | | | | | |
| | | | | | | | | | | | | | | |
| *Semester Total* | 16 | | | | *Semester Total* | 15 | | | | *Semester Total* | *6* | | | |

***Third Year***

| Fall Semester | Credits | Major | License | Gen Ed | Spring Semester | Credits | Major | License | Gen Ed | Summer Semester | Credits | Major | License | Gen Ed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EDB 302: Psychological Foundations of Education | 3 | | x | WAC | EUT 305: Classroom Interactions | 3 | | x | | EDL 305 Content Area Literacy | 3 | | x | |
| MTH 301: Introduction to Number Theory | 3 | x | x | | MTH 358: Abstract Algebra | 3 | x | x | WAC | Social Science Elective (**ALAAME) | 3 | | x | |
| MTH 333: Geometry | 3 | x | x | | MTH 4xx Elective | 3 | x | | | | | | | |
| African American Experience Elective | 3 | | | DIV | CHM 380: Prin of Chem Mid Sch Teachers | 3 | | x | | | | | | |
| PHY 470: Environmental Physics | 3 | x | x | | ESE 400: Introduction to Special Education | 3 | | x | WAC | | | | | |
| | | | | | MTH 396: Junior Seminar | 2 | x | | | | | | | |
| *Semester Total* | *15* | | | | *Semester Total* | *17* | | | | *Semester Total* | *6* | | | |

***Fourth Year***

| Fall Semester | Credits | Major | License | Gen Ed | Spring Semester | Credits | Major | License | Gen Ed | Summer Semester | Credits | Major | License | Gen Ed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUT 415: Project Based Instruction in Mathematics | 3 | | x | | EST 499: CS*Uteach* STEM Apprentice Teaching II | 6 | | x | | | | | | |
| EUT 417: Project Based Instruction in Science | 3 | | x | | EUT 210: Perspectives on Science & Math | 3 | | x | A&H/WAC | | | | | |
| EST 399: CS*Uteach* STEM Apprentice Teaching I | 1 | | x | | MTH 496: Senior Project | 3 | x | | WAC | | | | | |
| STA 424: Probability Theory & Application | 3 | x | x | | MTH 4xx Elective | 3 | x | | | | | | | |
| SCI 311: Research Methods | 3 | | x | WAC | | | | | | | | | | |
| PHY 474: Thermal Physics | 4 | x | x | CAP | | | | | | | | | | |
| ***Apply for Spring graduation by the middle of this term*** | | | | | | | | | | | | | | |
| *Semester Total* | *17* | | | | *Semester Total* | *15* | | | | *Semester Total* | 0 | | | |
| | | | | | *Degree Total: 137* | | | | | | | | | |

*Assumptions: college-level readiness in MTH & ENG; no Foreign Language Deficiency*

**College/ Program Notes:**

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