

B.S.Ed. Secondary Education: Computer Science and Mathematics Requirements

The BSED Secondary Education Computer Science & Mathematics Program provides course preparation in education, computer science, and mathematics and includes clinical experience. The program leads to a bachelor's degree and teaching certification in 7-12 Secondary Computer Science and Mathematics.

Note that all students must achieve 120 undergraduate credits and a minimum 3.0 overall GPA to graduate. Most students will graduate with 125 credits in this major. The final GPA requirement for Secondary Education Computer Science & Mathematics is 3.0.

Required Computer Science Courses – 30 credits

CPSC 105 Introduction to Data Visualization (3 credits)
CPSC 150 Ethics, Legal & Prof. Impacts of Digital Age (3 credits)
CPSC 223 Advanced Scientific Programming (3 credits)
CPSC 243 Java Programming (3 credits)
CPSC 253 IT Systems (3 credits)
CPSC 341 Introduction to Information Security (3 credits)
CPSC 354 Software Engineering I (3 credits)
CPSC 355 Software Engineering II (3 credits)
CPSC 123 Introduction to Scientific Programming *or* CPSC 135 Computer Science I (3 credits)
CPSC 311 Computer Networks (3 credits) *or* CPSC 328 Network Programming (3 credits)

Required Mathematics Courses – 26 credits

MATH 182 Calculus II (4 credits) *Final grade of C or better is required.*
MATH 283 Calculus III (4 credits)
MATH 224 Foundations of Higher Mathematics (3 credits)
MATH 240 Synthetic Geometry (3 credits)
MATH 260 Linear Algebra (3 credits)
MATH 301 Probability and Statistics I (3 credits)
MATH 311 Abstract Algebra I (3 credits)
MATH 340 Differential Equations (3 credits)

Education Professional Courses – 15 credits

Students must achieve a B or better in professional coursework.

SEED 312 Principles of Learning (3 credits)
SEED 313 Principles of Learning Lab (3 credits)
SEED 342 Principles of Teaching (3 credits)
SEED 343 Principles of Teaching Lab (3 credits)
SEED 414 Computer Science Methods for Middle & High School *or* SEED 430 Math Methods for Middle & High School (3 credits)

Clinical Experience Courses – 12 credits

SEED 390 Clinical Experience I (6 credits)
SEED 391 Clinical Experience II (6 credits)

Directed General Education Courses – 19 credits

While counting toward General Education fulfillment, these courses are required for completion of the major.

Required before candidacy:

The following courses must be taken before a student can take their education professional coursework. Additionally, to achieve candidacy, a student must pass the state's basic skills requirement, earn a 3.0 GPA or higher and complete pre-candidacy field hours.

COMP 100 level course – Category A1 (3 credits) *Final grade of C or better is required.*

ENGL Literature course – Category D (3 credits) *Final grade of C or better is required.*

EDUC 100 Perspectives on American Education – Category B (3 credits)

SPEE 201 Cognitive Development of Diverse Learners – Category B (3 credits)

SPEE 314 Effective Instructional Strategies – Category B (3 credits)

Not required before candidacy:

MATH 181 Calculus I – Category C2 (4 credits) *Final grade of C or better is required.*

Program Plan Code: BSSED_SCED_CSMA

Effective Date: Fall 2022



Secondary Education: Computer Science & Mathematics Major Check Sheet

Student Name:

Student ID Number:

This check sheet provides a mechanism for students and advisors to keep track of a student's progress in the program. Please refer to the program requirements for more details regarding options.

Note that all students must achieve 120 undergraduate credits and a minimum 3.0 overall GPA to graduate. Most students will graduate with 125 credits in this major. The final GPA requirement for Computer Science & Mathematics is 3.0.

Required Computer Science Courses - 30 credits

CPSC 105 Introduction to Data Visualization	3 credits	Grade:
CPSC 123 Introduction to Scientific Programming or CPSC 135 Computer Science I	3 credits	Grade:
CPSC 150 Ethics, Legal, & Professional Impacts of the Digital Age	3 credits	Grade:
CPSC 223 Advanced Scientific Programming	3 credits	Grade:
CPSC 243 JAVA Programming	3 credits	Grade:
CPSC 253 IT Systems	3 credits	Grade:
CPSC 311 Computer Networks or CPSC 328 Network Programming	3 credits	Grade:
CPSC 341 Introduction to Information Security	3 credits	Grade:
CPSC 354 Software Engineering I	3 credits	Grade:
CPSC 355 Software Engineering II	3 credits	Grade:
Total Credits	30 total credits	

Required Mathematics Courses - 26 credits

MATH 182 Calculus II <i>Final grade of C or better is required.</i>	4 credits	Grade:
MATH 283 Calculus III	4 credits	Grade:
MATH 224 Foundations of Higher Mathematics	3 credits	Grade:
MATH 240 Synthetic Geometry	3 credits	Grade:
MATH 260 Linear Algebra	3 credits	Grade:
MATH 301 Probability & Statistics I	3 credits	Grade:
MATH 311 Abstract Algebra I	3 credits	Grade:
MATH 340 Differential Equations	3 credits	Grade:
Total Credits	26 total credits	

Education Professional Courses - 15 credits

These Teacher Candidacy courses also require a final grade of B or better.

SEED 312 Principles of Learning	3 credits	Grade:
SEED 313 Principles of Learning Lab	3 credits	Grade:
SEED 342 Principles of Teaching	3 credits	Grade:
SEED 343 Principles of Teaching Lab	3 credits	Grade:
SEED 414 Comp Science Methods for Middle & High School or SEED 430 Math Methods for Middle & High School	3 credits	Grade:
Total Credits	15 total credits	

Clinical Experience Courses - 12 credits

SEED 390 Clinical Experience I	6 credits	Grade:
SEED 391 Clinical Experience II	6 credits	Grade:
Total Credits	12 credits	Grade:

Directed General Education Courses

While counting toward General Education fulfillment, these courses are required for completion of the major.

COMP 100-level (Category A1) <i>Final grade of C or better is required.</i>	3 credits	Grade:
EDUC 100 Perspectives on American Education (Cat B)	3 credits	Grade:
SPEE 201 Cognitive Development of Diverse Learners (Category B)	3 credits	Grade:
SPEE 314 Effective Instructional Strategies (Category B)	3 credits	Grade:
MATH 181 Calculus I (Category C2) <i>Final grade of C or better is required.</i>	4 credits	Grade:
1 ENGL Literature Course (Category D) <i>Final grade of C or better is required.</i>	3 credits	Grade:
Total Credits	19 credits	

Summary of Graduation Requirements

Total credits from major courses	83
Total credits from general education program	42
Minimum total credits to graduate	120
Minimum overall GPA	3.0
Minimum GPA in major program	3.0

Program Plan Code: BSED_SCED_CSMA

Effective Date: Fall 2022



Secondary Education: Computer Science & Mathematics 8-Semester Planner

Student Name:

Student ID Number:

Each semester listed below provides information including course categories, typical credit hours (CH.), and space to add specific course selections. This planner is a suggested path. Consult with your advisor regarding your unique plans and interests as you make choices about your schedule.

First Semester Plan

Gen Ed	COMP 100 (Category A1)	3 CH.	Selection:
Gen Ed	Category C1	3 CH.	Selection:
Gen Ed	FYSM 100	3 CH.	Selection: FYSM 100 -
Gen Ed	EDUC 100 (Category B)	3 CH.	Selection:
Gen Ed	Category C2	4 CH.	Selection:
Total		16 CH.	

Second Semester Plan

Gen Ed	Category A2	3 CH.	Selection:
Gen Ed	SPEE 201 (Category B)	3 CH.	Selection:
Gen Ed	MATH 181 (Category C2)	4 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Total		16 CH.	

Third Semester Plan

Gen Ed	Category A3	3 CH.	Selection:
Gen Ed	ENGL Literature (Category D)	3 CH.	Selection:
Gen Ed	Category D	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Total		18 CH.	Selection:

Fourth Semester Plan

Gen Ed	SPEE 314 (Category B)	3 CH.	Selection:
Gen Ed	Category A4	3 CH.	Selection:
Gen Ed	Category D	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	4 CH.	Selection:
Total		16 CH.	

Fifth Semester Plan

Major	SEED 312	3 CH.	Selection:
Major	SEED 313	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Total		18 CH.	

Sixth Semester Plan

Major	SEED 342	3 CH.	Selection:
Major	SEED 343	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Total		15 CH.	

Seventh Semester Plan

Major	SEED 414 or SEED 430	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Major	Required Content Area Course	3 CH.	Selection:
Total		15 CH.	

Eighth Semester Plan

Major	SEED 390	6 CH.	Selection:
Major	SEED 391	6 CH.	Selection:
Total		12 CH.	

Additional Notes:

Program Plan Code: BSSED_SCED_CSMA

Effective Date: Fall 2022