Associate of Arts Degree to BS in Mathematics

St. Charles Community College students who plan to transfer to Truman State University with the Associate of Arts degree are strongly encouraged to prepare for transfer by completing the courses listed below. By following this plan for degree completion, students are assured that they will be able to transfer without loss of credit or duplication of courses, that they will complete prerequisites for later course work, and that they will be prepared to make a smooth transition from St. Charles to Truman.

Students who complete the Associate of Arts degree will fulfill the Essential Skills, Modes of Inquiry, Truman Week, and Intercultural requirements of Truman’s Liberal Studies Program. Transfer students must fulfill all other degree requirements that are required of native Truman students.

Students who do not complete the courses as listed on this plan or who transfer without the Associate of Arts degree will have their coursework evaluated and applied to degree requirements on a course-by-course basis.

Students are recommended to complete the following courses to fulfill requirements for their Associate of Arts degree at St. Charles Community College:

Communication – 9 credit hours

ENG 101 English Composition I
ENG 102 English Composition II
SPE 101 Oral Communication

Social Science – 9 credit hours

Complete one course from Group I, and one course from Group II. Select the third course from Group I, II, or III. Students must fulfill the state statute requirements for the United States and Missouri Constitutions.

Group I
HIS 101 U.S. History to 1877
HIS 102 U.S. History Since 1877
HIS 115 U.S. History Since 1945 (elective at Truman but does fulfill MO Statute)
HIS 270 History of Missouri
POL 101 American Government
POL 102 State and Local Government

Group II
ANT xxx Any ANT course
CRJ 140 Introduction to Criminal Justice System
ECO 100 Survey Economics
ECO 110 Principles of Macroeconomics
ECO 120 Principles of Microeconomics
GEO xxx Any GEO course
PSY 101 Introduction to Psychology
SOC 101 Introduction to Sociology
SOC 102  Introduction to Sociological Theory

**Group III**
One additional course from Group I or II

OR

HIS xxx  Any HIS course
POL xxx  Any POL course

Humanities – 9 credit hours

Complete one course from Group I, one course from Group II, and one additional course from Group I or Group II.

**Group I**
- ART 101  Art Appreciation
- ART 150  Survey of Western Art History I: Prehistory to End of the Middle Ages
- ART 151  Survey of Western Art History II: Renaissance to the Twentieth Century
- ART 160  Art History II (formerly called Modern and Contemporary Art History)
- ART 170  Design I
- MUS 110  American Music Appreciation (elective but Fine Art Mode at Truman)
- MUS 111  Music Appreciation
- MUS 112  Jazz Appreciation
- MUS 234  Jazz History
- THE 122  Introduction to the Theater

**Group II**
Taking two courses in the same foreign language will apply toward the foreign language requirement for the Mathematics major.

FL xxx  Any FL course
LIT xxx  Any LIT course
PHL xxx  Any PHL course

Multicultural/Valuing – 3 credit hours

Complete one course from the following:

FL 101  Foreign Language and Culture I
FL 102  Foreign Language and Culture II
FL 201  Foreign Language and Culture III
FL 202  Foreign Language and Culture IV

OR

ANT 102  Intro to Cultural Anthropology
ANT 151  World Archaeology
ANT 202  Current Debates in Anthropology
ESL 102  ESL: Intermediate Composition for Non-Native Speakers
GEO 100  Principles of Geography
HIS 145  Western Civilization, Ancient and Medieval Heritage
HIS 146  Western Civilizations, Modern European Heritage
LIT 200  World Mythology
LIT 271 Contemporary Voices of Global Literature
LIT 272 World Literature: Ancient World Through the Renaissance
LIT 273 World Literature: Enlightenment to the 20th Century
MUS 111 Music Appreciation
PHL 201 World Religion
POL 201 International Relations
POL 210 Comparative Politics
POL 255 European Politics and Culture

Mathematics – 5 credit hours
MAT 180 Calculus and Analytic Geometry I

Natural Science – 8 credit hours

Complete one course from Group I and one course from Group II including at least one lab
**Although only one lab is required for the AA degree, taking CHM 110/113, CHM 115, or PHY 240/243 will meet a Math major requirement at Truman and is the recommended choice.

Group I
BIO 101/103 General Biology I and Lab

OR
BIO 150 General Biology I and Lab
BIO 105/106 Essentials of Biology and Lab
BIO 125/127 General Botany and Lab
BIO 160 General Botany and Lab

Group II
CHM 110/113 General Chemistry I and Lab

OR
CHM 115 General Chemistry I
PHY 240/243 College Physics I and Lab

Computer Literacy Requirement – 3 credit hours
Complete one course from the following:
BAS 103 Microcomputer Applications
CPT 103 Microcomputer Applications
CPT 115 Introduction to Data Processing
EDU 220 Educational Technology

Capstone – 1 credit hour
COL 299 Sophomore Portfolio Assessment

Transferable Major Field Requirements – 19-23 credit hours
MAT 230 Calculus and Analytic Geometry II
MAT 240 Calculus and Analytic Geometry III
MAT 250  Differential Equations
MAT 260  A Transition to Theoretical Mathematics
CPT 185  Programming in C# (C Sharp)
CPT 271  Programming in Perl

Satisfactorily complete the first year of a single foreign language (Language and Culture II), or demonstrate elementary proficiency as determined by a CLEP examination, or successfully complete an intermediate foreign language course.
FL 102  Foreign Language and Culture II
FL 201  Foreign Language and Culture III
FL 202  Foreign Language and Culture IV

Total credits required for the Associate of Arts degree: 64

After completing the Associate of Arts degree at St. Charles Community College, students will then complete the following courses at Truman State University to earn a Bachelor of Science degree in Mathematics. Students may transfer any of the following 100-200 level equivalent coursework from SCC provided the 28 hours residency requirement, the 45 hours of Truman coursework, and the major hour requirements for Truman are met.

Junior Interdisciplinary Writing-Enhanced Seminar (JINS) – 3 credit hours

Bachelor of Science Requirements – 6 credit hours

Bachelor of Science Requirements

Complete six hours from the following areas. These courses may not be used to fulfill a Mathematics major requirement.

Courses designated CS, BIOL, CHEM, or PHYS which fulfill a major requirement for a bachelor’s degree in that major.

OR
STAT 374  Statistical Quality Control
STAT 375  ANOVA/Experimental Design
STAT 376  Nonparametric Statistics /Sampling
STAT 378  Linear Regression/Time Series
PHRE 342  Symbolic Logic
PHRE 382  Philosophy of Mathematics
NASC 400  History of Science to 1700
NASC 401  History of Science since 1700
ECON 300  Intermediate Microeconomics
ECON 303  Intermediate Macroeconomics
ECON 304  Mathematical Economics
ECON 373  Econometrics
Required Support – 10-11 credit hours (CS 170, CHEM 130, or PHYS 195 equivalents also may have been taken at SCC as part of transfer work)

- CS 170  Introduction to Computer Science I
- OR
- CS 180  Foundations of Computer Science I
- STAT 290  Statistics
- CHEM 130  Chemical Principles I
- OR
- PHYS 195  Physics with Calculus I

Major Requirements – 23-29 credit hours (some of these hours may have been taken at SCC prior to transfer)

- MATH 200  Foundations of Mathematics (if not completed at SCC)
- MATH 357  Linear Algebra
- MATH 451  Algebraic Structures I
- MATH 461  Advanced Calculus I
- MATH 498  Senior Seminar

Mathematics Electives:
Chose courses totaling 15 credit hours from the following lists, with at least one course from List A:

List A:
- MATH 363  College Geometry
- MATH 440  Topology
- MATH 447  Combinatorial Analysis
- MATH 452  Algebraic Structures II
- MATH 454  Theory of Numbers
- MATH 462  Advanced Calculus II
- MATH 465  Differential Geometry
- MATH 467  Logic and Set Theory
- MATH 515  Complex Variables I
- STAT 570  Mathematical Probability and Statistics I

List B:
- MATH 300  Introduction to Numerical Analysis
- MATH 325  Introduction to Operations Research
- MATH 330  Mathematics of Finance
- MATH 335  Game Theory
- MATH 345  Introduction to Mathematical Biology
- MATH 347  Discrete Mathematics
- MATH 364  Vector Analysis
- MATH 365  Ordinary Differential Equations (may have been completed at SCC)
- MATH 400  Methods of Optimization
- MATH 455  History of Mathematics I
- MATH 456  History of Mathematics II
- MATH 464  Higher Geometry
**Capstone Experience**

Each student pursuing a bachelor’s degree in mathematics is required to complete a project demonstrating his/her ability to study independently some area of mathematics. The project will include a written report and an accompanying public presentation. Each project should be of such a nature that all three of the following criteria are satisfied:

- The student should learn some mathematics outside the classroom setting.
- The student should synthesize material obtained from different sources.
- The student should clearly communicate, orally and in writing, what he or she has learned.

Students are responsible for choosing a project and a supervisor. The project must be approved by the supervisor and by the Mathematics Undergraduate Committee. By the start of Midterm Break in the semester the student is planning to graduate, the student’s written report, approved by his/her supervisor must be submitted to the Mathematics Undergraduate Committee. Upon committee approval, the supervisor will arrange the public presentation. Information about acceptable types of projects will be available in the Department Office.

NOTE: Students who double-major in mathematics and another discipline are allowed to meet the Capstone Integrating Experience requirement in the other discipline provided it requires a Capstone Integrating Experience. Students must submit the Verification of Capstone Experience form, signed by their capstone advisor, to the Department Office in VH 2100.

**Writing-Enhanced Requirement**

Complete at least two additional courses at Truman, in addition to the JINS course, that are listed as Writing-Enhanced. These courses may be used to fulfill other requirements.

**Total credits required for the Baccalaureate of Science degree: 120**

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**Additional Information:**

Note: Most mathematics courses having a prerequisite mathematics course require a grade of “C” or higher in that course. Students should check prerequisites in the course descriptions.

Students seeking Missouri teacher certification as secondary mathematics teachers should select MATH 363 College Geometry in order to meet Missouri certification requirements and MATH 455 History of Mathematics I or MATH 456 History of Mathematics II for entry into the MAE program.

Courses offered under the numbers MATH 473, MATH 488, MATH 489, MATH 503, STAT 380, STAT 486, and STAT 487 may substitute for List B with the approval of the mathematics faculty. At most, six hours total credit from MATH 473 and MATH 489 may be counted as List B elective.
Mathematics majors may substitute at most one course from another discipline for a course in List B. Such a course must be at the 300 level or above, contain a strong mathematical component, and be approved by the mathematics faculty. A list of approved courses may be obtained in the Mathematics and Computer Science Department Office.

Transfer students majoring in mathematics must complete 18 semester hours in the major at Truman. This coursework must include 15 semester hours at the 300 level or higher.

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<thead>
<tr>
<th>Minimum GPA required:</th>
<th>2.00</th>
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<tr>
<td>Residency Requirements:</td>
<td>For a Truman degree, at least 45 hours of credit must be completed in residence at Truman, including at least 15 hours of coursework in the major. In addition, the last 28 hours applied toward the degree must be completed in residence at Truman. Students must also complete at least 40 hours of 300+ level coursework.</td>
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<tr>
<td>SCC Contact:</td>
<td>Student Development Office, 636-922-8241 or 8246</td>
</tr>
<tr>
<td>Truman Contact:</td>
<td>Erin Shaw 660-785-5146, Kimberly Titus 660-785-4143, or Dr. Susan LaGrassa, 660-785-4547</td>
</tr>
<tr>
<td>Location:</td>
<td>Kirksville, Missouri</td>
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