

# SOFTWARE DEVELOPER: AAS

**Associate in Applied Science | 61 credit hours minimum**

**Area of Interest: Science, Technology, Engineering, and Math (STEM)**

Program Website (<https://stlcc.edu/programs-academics/pathways/s-t-e-m/software-developer/>)

Academic Advising (<https://stlcc.edu/admissions/advising/>)

## Program Description:

The Associate in Applied Science Software Developer degree provides students with the technical skills and knowledge required to design, write, implement, secure, and maintain software systems in the enterprise. It teaches the principles of software architecture and data analysis using current development tools, languages, and environments. The courses on Web design, software developer, and database focus areas enable students to pursue in-depth skill and expertise within one of these three areas while preparing for industry recognized certifications. The courses in the program provide a combination of distance learning and classroom-based in-depth hands-on skills development. Students completing the program are prepared for a variety of industry certification exams as well as entry-level employment as a software developer, or to pursue advanced studies in software design and development.

**Locations.** This program is offered at Forest Park and Meramec by taking a mixture of face-to-face and online courses.

**Related Programs.** The Computer and Information Technology Department offers certificates in the following areas:

Database Developer, Certificate of Proficiency (<http://catalog.stlcc.edu/programs/database-developer-certificate-proficiency/>)

Web Developer, Certificate of Specialization (<http://catalog.stlcc.edu/programs/web-developer-certificate-specialization/>)

**Cost of Attendance.** For more information on cost of attendance visit MoSCORES (<https://scorecard.mo.gov/Search/>).

**Program Career and Salary Information.** Pursuant to Missouri HB 1606 (2018), information regarding the number of credit hours, program length, employment rate, wage data, and graduates employed in careers related to their program of study at St. Louis Community College can be found at the following URL: <https://scorecard.mo.gov/scorecard/> ([https://www.google.com/url?q=https://scorecard.mo.gov/scorecard/&sa=D&ust=1555536894857000&usg=AFQjCNG1xf3E\\_i2lO96zEytILO-s5xaJCQ](https://www.google.com/url?q=https://scorecard.mo.gov/scorecard/&sa=D&ust=1555536894857000&usg=AFQjCNG1xf3E_i2lO96zEytILO-s5xaJCQ)). Search using School / Program “St. Louis Community College” and choose the degree or credential type of interest.

The following limitations to the data apply: Information provided is based on the most recent cohorts available. Typically, most recent cohorts for wage and completion data are six years prior to the current academic year. Time to complete a program of study varies depending on the number of credit hours students earn per semester.

**Interested in this program?** Start the enrollment process by visiting the Apply to STLCC (<https://www.stlcc.edu/admissions/apply-to-stlcc/>) page.

## At the completion of the program, students are expected to:

1. demonstrate technical skills based on industry standards to design, write, implement, secure, and maintain software systems.
2. modify existing software incorporating new functions to support specific project goals.
3. develop software solutions following industry best practices as a member of a team.
4. demonstrate proficiency in a selected focus area (Language, Web, or Database) by developing a portfolio of projects completed during courses related to the focus area.
5. perform data analysis by importing, manipulating, documenting, and displaying source information.

**Missouri Civics Examination.** Students entering college for the very first time in fall 2019 and who intend to complete an associate's degree must successfully complete a civics examination. Information on who is eligible for a waiver can be found on the STLCC website (<https://stlcc.edu/programs-academics/missouri-civics-exam.aspx>).

## Program of Study

Code	Title	Credit Hours
<b>General Education</b>		
ENG 101	College Composition I (MOTR ENGL 100)	3
ENG 103	Report Writing (MOTR ENGL 110)	3
or ENG 102	College Composition II (MOTR ENGL 200)	
<b>Mathematics Requirement: Choose One</b>		<b>3</b>
MTH 180	Introductory Statistics (MOTR MATH 110) (or MTH 180S)	
MTH 160	Precalculus Algebra (MOTR MATH 130) (or MTH 160S)	
XXX xxx	Social & Behavioral Sciences: Civics Requirement ( <a href="http://catalog.stlcc.edu/general-education/">http://catalog.stlcc.edu/general-education/</a> )	3
COM 103	Small Group Communication (MOTR COMM 125)	3
or COM 112	Argumentation and Debate (MOTR COMM 220)	
or COM 201	Interpersonal Communication (MOTR COMM 120)	
or PSY 200	General Psychology (MOTR PSYC 100)	
or PHL 102	Introduction to Logic (MOTR PHIL 101)	
<b>Program Requirements</b>		
IS 101	Keyboarding	1
or IS 123	Introduction to Windows	
or IS 136	Internet Fundamentals	
or IS 165	Computer Applications-Microsoft Project	
IS 120	Introduction to Excel	1
IS 112	Introduction to Computer Science	3
IS 139	Web Publishing	3
IS 153	C# Programming I	4
or IS 187	Java Programming I	
or IS 167	C++ Programming I	
or IS 166	C# and Java Programming I	
IS 168	GitHub for Developers	1
IS 225	Database Management	4
IS 229	Unix/Linux I	3
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security+	3

IS 280	Python	3
IS 241	Software Engineering Principles	3
<b>Select one of the following options:</b>		<b>8</b>
<b>C# Language</b>		
IS 253 & IS 283	C# Programming II and C# Programming III	
<b>Java Language</b>		
IS 287 & IS 288	Java Programming II and Java Programming III	
<b>C++ and Analytics</b>		
IS 267	C++ Programming II	
IS 257 & IS 165	Big Data Analytics and Computer Applications-Microsoft Project	
<b>Select one of the following tracks:</b>		<b>9</b>
Language Track		
Web Track		
Database Track		
<b>Total Credit Hours</b>		<b>61</b>

## Tracks

### Language Track

Code	Title	Credit Hours
IS 290	C# Frameworks: .NET Web App Framework	3
or IS 294	Java Frameworks: Struts and Hibernate	
or IS 296	Java Frameworks: Spring	
IS 265	Web Scripting Technologies	3
IS 285	Excel for Data Analytics	3
or IS 291	Workplace Learning: Computer and Information Technology	
or IS 294	Java Frameworks: Struts and Hibernate	
or IS 296	Java Frameworks: Spring	
or IT 121	Secure E-Commerce	
<b>Total Credit Hours</b>		<b>9</b>

### Web Track

Code	Title	Credit Hours
IS 141	Graphics for the Web	3
IS 265	Web Scripting Technologies	3
IS 142	Web Development	3
or IS 290	C# Frameworks: .NET Web App Framework	
or IS 291	Workplace Learning: Computer and Information Technology	
or IT 121	Secure E-Commerce	
<b>Total Credit Hours</b>		<b>9</b>

### Database Track

Code	Title	Credit Hours
IS 240	SQL and Database Development	3
IS 285	Excel for Data Analytics	3
IS 257	Big Data Analytics	3
or IS 268	SQL Server Programming	
or IS 276	Oracle Programming	
or IS 291	Workplace Learning: Computer and Information Technology	
or IT 121	Secure E-Commerce	
<b>Total Credit Hours</b>		<b>9</b>

## Database Track Part-Time Academic Plan

**Missouri Civics Examination.** Students entering college for the very first time in fall 2019 and who intend to complete an associate's degree must successfully complete a civics examination. Information on who is eligible for a waiver can be found on the STLCC website (<https://stlcc.edu/programs-academics/missouri-civics-exam.aspx>).

**PLEASE NOTE:** If you originally enrolled at STLCC prior to Fall 2024, you may need to view an archived catalog (<https://www.stlcc.edu/programs-academics/course-catalog/>) for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

Code	Title	Hours	Prerequisites	Milestones/Notes
<b>First Year</b>				
<b>Fall</b>				
IS 153 or 167 or 187 or 166	C# Programming I or C++ Programming I or Java Programming I or C# and Java Programming I	4	Reading Proficiency	Speak to your program coordinator before enrolling in IS 166.
IS 120	Introduction to Excel	1	Reading Proficiency	
IS 139	Web Publishing	3	Reading Proficiency	
IS 101 or 123 or 136	Keyboarding or Introduction to Windows or Internet Fundamentals	1		
	<b>Credit Hours</b>	<b>9</b>		
<b>Spring</b>				
IS 168	GitHub for Developers	1	Reading Proficiency	First or Second 8-week class

IS 253 or 287 or 267	C# Programming II or Java Programming II or C++ Programming II	4	IS 153 or IS 167 or IS 187 or IS 166 with minimum grades of "C" and Reading Proficiency	
IS 225	Database Management	4	Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
<b>Summer</b>				
IS 229	Unix/Linux I	3	Reading Proficiency	
ENG 101	College Composition I (MOTR ENGL 100)	3	Placement score or ENG 030 or ENG 070 with a grade of "C" or better or recommendation of department and Reading Proficiency or concurrent enrollment in RDG 079	
	<b>Credit Hours</b>	<b>6</b>		
<b>Second Year</b>				
<b>Fall</b>				
IS 280	Python	3	Reading Proficiency	
IS 257	Big Data Analytics	3	IS 225 with a minimum grade of "C" and Reading Proficiency	
IS 165	Computer Applications-Microsoft Project	1	Reading Proficiency	
COM 103 or 112 or 201 or PSY 200 or PHL 102	Small Group Communication (MOTR COMM 125) or Argumentation and Debate (MOTR COMM 220) or Interpersonal Communication (MOTR COMM 120) or General Psychology (MOTR PSYC 100) or Introduction to Logic (MOTR PHIL 101)	3	Reading Proficiency	
	<b>Credit Hours</b>	<b>10</b>		
<b>Spring</b>				
IS 240	SQL and Database Development	3	IS 225 with a minimum grade of "C" and Reading Proficiency	
MTH 160 or 180	Precalculus Algebra (MOTR MATH 130) or Introductory Statistics (MOTR MATH 110)	3	MTH 140 (or MTH 140S) with a grade of "C" or better or satisfactory score on placement test, and Reading Proficiency	
IS 112	Introduction to Computer Science	3	Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
<b>Summer</b>				
ENG 102 or 103	College Composition II (MOTR ENGL 200) or Report Writing (MOTR ENGL 110)	3	ENG 101 with a minimum grade of "C" and Reading Proficiency	
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security +	3	IT 102 or IS 229 with a minimum grade of "C" and Reading Proficiency	
	<b>Credit Hours</b>	<b>6</b>		

Third Year				
Fall				
IS 241	Systems Analysis and Design	3	IS 153 or IS 167 or IS 187 with a minimum grade of "C", and IS 139 or IS 253 or IS 267 or IS 287 with a minimum grade of "C", and Reading Proficiency	Capstone class: Take at end of program
IS 268 or 276	SQL Server Programming or Oracle Programming	3	IS 240 with a minimum grade of "C" and Reading Proficiency	
IS 285	Excel for Data Analytics	3	IS 120 with a minimum grade of "C", concurrent or prior enrollment in MTH 160 (or MTH 160S) or MTH 180 (or MTH 180S) with a minimum grade of "C", and Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
Spring				
XXX xxx	Social & Behavioral Sciences: Civics ( <a href="http://catalog.stlcc.edu/general-education/">http://catalog.stlcc.edu/general-education/</a> )	3		Apply for graduation.
	<b>Credit Hours</b>	<b>3</b>		
	<b>Total Credit Hours</b>	<b>61</b>		

\*Click on the hyperlinked course number to view additional information about the course.

\*\*Students completing a course that has been assigned a MOTR number may transfer that course to any public institution in Missouri. Those who complete CORE 42 requirements will have that verification on their transcript.

\*\*\* It is your responsibility to verify that the courses listed above will transfer to the four-year institution of your choice. Maximize your transfer credits/classes by meeting with an academic advisor.

## Language Track Part-Time Academic Plan

**Missouri Civics Examination.** Students entering college for the very first time in fall 2019 and who intend to complete an associate's degree must successfully complete a civics examination. Information on who is eligible for a waiver

can be found on the STLCC website (<https://stlcc.edu/programs-academics/missouri-civics-exam.aspx>).

**PLEASE NOTE:** If you originally enrolled at STLCC prior to Fall 2024, you may need to view an archived catalog (<https://www.stlcc.edu/programs-academics/course-catalog/>) for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

Code	Title	Hours	Prerequisites	Milestones/Notes
First Year				
Fall				
IS 101 or 123 or 136 or 165	Keyboarding or Introduction to Windows or Internet Fundamentals or Computer Applications-Microsoft Project	1		
IS 153 or 167 or 187 or 166	C# Programming I or C++ Programming I or Java Programming I or C# and Java Programming I	4	Reading Proficiency	Speak to your program coordinator before enrolling in IS 166.
IS 120	Introduction to Excel	1	Reading Proficiency	
IS 139	Web Publishing	3	Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		

Spring				
IS 168	GitHub for Developers	1	Reading Proficiency	First or Second 8-week class
IS 225	Database Management	4	Reading Proficiency	
IS 253 or 287 or 267	C# Programming II or Java Programming II or C++ Programming II	4	IS 153 or IS 167 or IS 187 or IS 166 with minimum grades of "C" and Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
Summer				
IS 229	Unix/Linux I	3	Reading Proficiency	
ENG 101	College Composition I (MOTR ENGL 100)	3	Placement score or ENG 030 or ENG 070 with a grade of "C" or better or recommendation of department and Reading Proficiency or concurrent enrollment in RDG 079	
	<b>Credit Hours</b>	<b>6</b>		
Second Year				
Fall				
IS 280	Python	3	Reading Proficiency	
IS 283 or 288 or 257	C# Programming III or Java Programming III or	4	IS 253 with a minimum grade of "C" and Reading Proficiency	
COM 103 or 112 or 201 or PSY 200 or PHL 102	Small Group Communication (MOTR COMM 125) or Argumentation and Debate (MOTR COMM 220) or Interpersonal Communication (MOTR COMM 120) or General Psychology (MOTR PSYC 100) or Introduction to Logic (MOTR PHIL 101)	3	Reading Proficiency	
	<b>Credit Hours</b>	<b>10</b>		
Spring				
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security +	3	IT 102 or IS 229 with a minimum grade of "C" and Reading Proficiency	
MTH 160 or 180	Precalculus Algebra (MOTR MATH 130) or Introductory Statistics (MOTR MATH 110)	3	MTH 140 (or MTH 140S) with a grade of "C" or better or satisfactory score on placement test, and Reading Proficiency	
IS 112	Introduction to Computer Science	3	Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
Summer				
ENG 102 or 103	College Composition II (MOTR ENGL 200) or Report Writing (MOTR ENGL 110)	3	ENG 101 with a minimum grade of "C" and Reading Proficiency	
IS 265	Web Scripting Technologies	3	IS 139 with a minimum grade of "C" and Reading Proficiency	
	<b>Credit Hours</b>	<b>6</b>		

Third Year				
Fall				
IS 241	Systems Analysis and Design	3	IS 153 or IS 167 or IS 187 with a minimum grade of "C", and IS 139 or IS 253 or IS 267 or IS 287 with a minimum grade of "C", and Reading Proficiency	Capstone class: Take at end of program
IS 290 or 294 or 296	C# Frameworks: .NET Web App Framework or Java Frameworks: Struts and Hibernate or Java Frameworks: Spring	3	IS 283 with a minimum grade of "C" and Reading Proficiency	
IS 285 or 294 or 296 or 291 or IT 121	Excel for Data Analytics or Java Frameworks: Struts and Hibernate or Java Frameworks: Spring or Workplace Learning: Computer and Information Technology or Secure E-Commerce	3	IS 120 with a minimum grade of "C", concurrent or prior enrollment in MTH 160 (or MTH 160S) or MTH 180 (or MTH 180S) with a minimum grade of "C", and Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
Spring				
XXX xxx	Social & Behavioral Sciences: Civics ( <a href="http://catalog.stlcc.edu/general-education/">http://catalog.stlcc.edu/general-education/</a> )	3		Apply for graduation.
	<b>Credit Hours</b>	<b>3</b>		
	<b>Total Credit Hours</b>	<b>61</b>		

\*Click on the hyperlinked course number to view additional information about the course.

\*\*Students completing a course that has been assigned a MOTR number may transfer that course to any public institution in Missouri. Those who complete CORE 42 requirements will have that verification on their transcript.

\*\*\* It is your responsibility to verify that the courses listed above will transfer to the four-year institution of your choice. Maximize your transfer credits/classes by meeting with an academic advisor.

## Web Track Part-Time Academic Plan

**Missouri Civics Examination.** Students entering college for the very first time in fall 2019 and who intend to complete an associate's degree must successfully complete a civics examination. Information on who is eligible for a waiver can be found on the STLCC website (<https://stlcc.edu/programs-academics/missouri-civics-exam.aspx>).

**PLEASE NOTE:** If you originally enrolled at STLCC prior to Fall 2024, you may need to view an archived catalog (<https://www.stlcc.edu/programs-academics/course-catalog/>) for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

Code	Title	Hours	Prerequisites	Milestones/Notes
First Year				
Fall				
IS 153 or 167 or 187 or 166	C# Programming I or C++ Programming I or Java Programming I or C# and Java Programming I	4	Reading Proficiency	Speak to Program Coordinator before enrolling in IS 166.
IS 120	Introduction to Excel	1	Reading Proficiency	
IS 139	Web Publishing	3	Reading Proficiency	

IS 101 or 123 or 136 or 165	Keyboarding or Introduction to Windows or Internet Fundamentals or Computer Applications- Microsoft Project	1		
	<b>Credit Hours</b>	<b>9</b>		
<b>Spring</b>				
IS 168	GitHub for Developers	1	Reading Proficiency	First or Second 8-week class
IS 253 or 287 or 267	C# Programming II or Java Programming II or C++ Programming II	4	IS 153 or IS 167 or IS 187 or IS 166 with minimum grades of "C" and Reading Proficiency	
IS 225	Database Management	4	Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
<b>Summer</b>				
IS 229	Unix/Linux I	3	Reading Proficiency	
ENG 101	College Composition I (MOTR ENGL 100)	3	Placement score or ENG 030 or ENG 070 with a grade of "C" or better or recommendation of department and Reading Proficiency or concurrent enrollment in RDG 079	
	<b>Credit Hours</b>	<b>6</b>		
<b>Second Year</b>				
<b>Fall</b>				
IS 280	Python	3	Reading Proficiency	
IS 141	Graphics for the Web	3	IS 139 with a minimum grade of "C" and Reading Proficiency	
COM 103 or 112 or 201 or PSY 200 or PHL 102	Small Group Communication (MOTR COMM 125) or Argumentation and Debate (MOTR COMM 220) or Interpersonal Communication (MOTR COMM 120) or General Psychology (MOTR PSYC 100) or Introduction to Logic (MOTR PHIL 101)	3	Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
<b>Spring</b>				
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security +	3	IT 102 or IS 229 with a minimum grade of "C" and Reading Proficiency	
MTH 160 or 180	Precalculus Algebra (MOTR MATH 130) or Introductory Statistics (MOTR MATH 110)	3	MTH 140 (or MTH 140S) with a grade of "C" or better or satisfactory score on placement test, and Reading Proficiency	
IS 112	Introduction to Computer Science	3	Reading Proficiency	
	<b>Credit Hours</b>	<b>9</b>		
<b>Summer</b>				
ENG 102 or 103	College Composition II (MOTR ENGL 200) or Report Writing (MOTR ENGL 110)	3	ENG 101 with a minimum grade of "C" and Reading Proficiency	

IS 265	Web Scripting Technologies	3	IS 139 with a minimum grade of "C" and Reading Proficiency	
	<b>Credit Hours</b>	<b>6</b>		
<b>Third Year</b>				
<b>Fall</b>				
IS 241	Systems Analysis and Design	3	IS 153 or IS 167 or IS 187 with a minimum grade of "C", and IS 139 or IS 253 or IS 267 or IS 287 with a minimum grade of "C", and Reading Proficiency	Capstone class: Take at end of program
IS 142 or 290 or 291 or IT 121	Web Development or C# Frameworks: .NET Web App Framework or Workplace Learning: Computer and Information Technology or Secure E-Commerce	3	IS 153 or IS 167 or IS 187 with a minimum grade of "C", IS 139 with a minimum grade of "C", concurrent or prior enrollment in IS 265 with a minimum grade of "C", and Reading Proficiency	
IS 283 or 288 or 257	C# Programming III or Java Programming III or	4	IS 253 with a minimum grade of "C" and Reading Proficiency	
	<b>Credit Hours</b>	<b>10</b>		
<b>Spring</b>				
XXX xxx	Social & Behavioral Sciences: Civics ( <a href="http://catalog.stlcc.edu/general-education/">http://catalog.stlcc.edu/general-education/</a> )	3		Apply for graduation.
	<b>Credit Hours</b>	<b>3</b>		
	<b>Total Credit Hours</b>	<b>61</b>		

\*Click on the hyperlinked course number to view additional information about the course.

\*\*Students completing a course that has been assigned a MOTR number may transfer that course to any public institution in Missouri. Those who complete CORE 42 requirements will have that verification on their transcript.

\*\*\* It is your responsibility to verify that the courses listed above will transfer to the four-year institution of your choice. Maximize your transfer credits/classes by meeting with an academic advisor.