

# Computer Programming and Database Management - Software Engineering Technology Major (SET)

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The Computer Programming and Database Management - Software Engineering Technology Major (SET) focuses on the design, development, implementation, and maintenance of software solutions used in a variety of industries and organizations.

Students gain practical knowledge and experience in the software development process and methods using relevant, current programming languages, databases, and database query languages. Students also gain knowledge of core math and science concepts and skills.

Graduates earn an Associate of Applied Science degree and are prepared to enter the workforce as skilled software developers/computer programmers. Graduates may continue their education in a bachelor's degree program in computer science, engineering technology, or mathematics.

Although some required courses are available through evening and/or online classes, most of the required courses for the Software Engineering Technology Major are scheduled as in-person classes offered on Monday through Friday between 8 a.m. and 5 p.m.

## Employment Options

### GRADUATES ARE PREPARED TO:

- Design and write computer programs using programming languages NET, Python, Java, C, and C++
- Develop applications using the Object-Oriented Programming Methodology
- Design, develop, and maintain databases in various Database Management Systems
- Demonstrate proficiency in business/system analysis and design methodologies such as Agile
- Develop on various platforms and operating systems such as .NET, Windows, LINUX, and IBM Power Systems
- Seek a variety of industry certifications and/or advanced degrees

### GRADUATE STARTING SALARY PROJECTIONS:

\$40,000 to \$60,000 annual salary

### EMPLOYMENT OUTLOOK:

Graduates of the Software Engineering Technology program are in demand by companies locally and nationally. According to the U.S. Bureau of Labor Statistics, employment of software developers is projected to grow 24 percent through 2026, much faster than the average for all occupations.

### REPRESENTATIVE JOB TITLES:

Software Developer  
Computer Programmer  
Database Programmer  
Web-Based Application Programmer  
System/Business Analyst

## Education Options

### STRONG TRANSFER HISTORY:

Northern Kentucky University  
University of Cincinnati  
Western Governors University  
Wilmington College  
Wright State University

## Related Programs

Computer Programming and Database Management - Computer Information Systems Major (CINS)  
Computer Programming and Database Management - Computer Software Development Major (CSD)  
Computer Software Development Certificate (CSDC)

Program Code: SET.AAS

## Ready To Get Started?

Learn more about our admissions process and complete your online application today at [cincinnatiastate.edu/admissions](http://cincinnatiastate.edu/admissions).

OFFICE OF ADMISSION (513) 861-7700 | [adm@cincinnatiastate.edu](mailto:adm@cincinnatiastate.edu)



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## Program Curriculum

		Lec	Lab	Credits
<b>Semester 1</b>				
FYE 1XX	First Year Experience Elective (B)	1	0	1
ENG 101	English Composition 1 (G)	3	0	3
MAT XXX	Mathematics Elective (G)	3	0	3
IT 100	Computer Programming Foundations (B)	2	3	3
XXX XXX	Arts/Humanities Elective (G)	3	0	3
<b>Semester 2</b>				
IT 101	Programming 1 (B)	2	3	3
IT 111	Database Design and SQL 1 (B)	2	3	3
XXX XXX	Software Engineering Technology Elective 1 (B)	3	3	4
CPDM 210	System Analysis and Design (T)	2	3	3
<b>Semester 3</b>				
IT 102	Programming 2 (T)	2	3	3
XXX XXX	Software Engineering Technology Elective 2 (B)	3	3	4
XXX XXX	Technical Concentration Elective 1 (T)	2	3	3
XXX XXX	Technical Track Elective 1 (T)	2	3	3
<b>Semester 4</b>				
XXX XXX	Experiential Learning Elective 1 (T)	1	40	2
XXX XXX	Technical Concentration Elective 2 (T)	2	3	3
<b>Semester 5</b>				
XXX XXX	Software Engineering Technology Elective 3 (B)	3	3	4
XXX XXX	Technical Concentration Elective 3 (T)	2	3	3
XXX XXX	Technical Track Elective 2 (T)	2	3	3
ECO 1XX	Economics Elective (G)	3	0	3
ENG-10X	English Composition Elective (G)	3	0	3
<b>Semester 6</b>				
XXX XXX	Experiential Learning Elective 1 (T)	1	40	2
CPDM 290	Computer Programming and Database Management Capstone (T)	2	3	3
<b>Total Credits:</b>		<b>49</b>	<b>122</b>	<b>65</b>
Electives				
<b>First Year Experience Elective</b>				
FYE 100	College Survival Skills	1		
FYE 105	College Success Strategies	2		
FYE 110	Community College Experience	3		
<b>Mathematics Elective</b>				
MAT 121	Technical Algebra and Geometry with Statistics	3		
MAT 125	Algebra and Trigonometry	4		
MAT 131	Statistics 1	3		
MAT 151	College Algebra	4		

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### English Composition Elective

ENG 102	English Composition 2: Contemporary Issues	3
ENG 103	English Composition 2: Writing about Literature	3
ENG 104	English Composition 2: Technical Communication	3
ENG 105	English Composition 2: Business Communication	3

### Arts/Humanities Elective

Any Transfer Module course from ART, LIT, MUS, PHI, REL, THE, or COMM 130

### Economics Elective

ECO 105	Principles of Microeconomics	3
ECO 110	Principles of Macroeconomics	3

Experiential Learning Electives (Choose courses from 1 experiential learning group)

### Cooperative Education Experiential Learning

CPDM 190	Cooperative Education Preparation: Computer Programming and Database Management	1
CPDM 291	Full-Time Cooperative Education 1: Computer Programming and Database Management	2
CPDM 292	Full-Time Cooperative Education 2: Computer Programming and Database Management	2

### Project-Based Experiential Learning

CPDM 296	Project-Based Learning 1	2
CPDM 297	Project-Based Learning 2	2

### Software Engineering Technology Electives (Choose 3 courses)

BIO 131	Biology 1	5
CHE 110	Fundamentals of Chemistry	4
CHE 111	Bio-Organic Chemistry	4
MAT 126	Functions and Calculus	4
MAT 251	Calculus 1	5
MAT 252	Calculus 2	5
PHY 151	Physics 1: Algebra and Trigonometry-Based	4
PHY 152	Physics 2: Algebra and Trigonometry-Based	4

Technical Concentration Electives (Choose courses from 1 concentration)

### C Programmer Concentration

SET 151	C Programming 1 (T)	3
SET 252	C Programming 2 (T)	3
SET 253	C Programming 3 (T)	3

### Java Programmer Concentration

IT 161	Java Programming 1 (T)	3
IT 162	Java Programming 2 (T)	3
IT 262	Java Programming 3 (T)	3

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### Web Programmer Concentration

IT 117	Web Application Development 1 (T)	3
IT 118	Web Application Development 2 (T)	3
IT 218	Web Application Development 3 (T)	3

Technical Track Electives (Choose courses from 1 track)

### Java Programming Track

IT 161	Java Programming 1 (T)	3
IT 162	Java Programming 2 (T)	3

### C Programming Track 1

SET 151	C Programming 1 (T)	3
SET 252	C Programming 2 (T)	3

### C Programming Track 2

SET 252	C Programming 2 (T)	3
SET 253	C Programming 3 (T)	3

### IBMi Powersystem Track

CPDM 211	Business Application Development 1: RPGLE/DB2 (T)	4
CPDM 212	Business Application Development 2: RPGLE/DB2 (T)	4

### Mobile Application Track

CPDM 230	Mobile Application Development (T)	4
CPDM 240	Emerging Technologies: Web and Mobile Applications (T)	4

### Computer Networking Track

NETC 121	Network Communications 1 (T)	3
NETC 122	Network Communications 2 (T)	3

### Web Programming Track

IT 117	Web Application Development 1 (T)	3
IT 118	Web Application Development 2 (T)	3

### Database Analytics Track

IT 112	Database Design and Management (T)	3
IT 212	Business Intelligence, Data Warehousing, and Reporting (T)	3

The letters G, B, and T (displayed after course titles or elective descriptions) identify types of courses required by the Ohio Department of Higher Education as part of an associate's degree curriculum.

G = General Education course in this curriculum

B = Basic Skills course in this curriculum

T = Technical course in this curriculum