

Software Engineering Technology (SET)

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The Software Engineering Technology degree program focuses on the design, development, implementation, and maintenance of software used in industry. Along with core math and science classes, SET students gain knowledge of computer operating systems and software development using various programming languages. Graduates are prepared to enter the workforce as skilled computer programmers and systems integrators, and also are well-prepared to enter a Bachelor of Science degree program in engineering, engineering technology, or computer science.

Software Engineering Technology (SET)

All degree-seeking students must complete a First Year Experience (FYE) course as part of the first 12 credit hours taken at Cincinnati State.

Semester 1		Lec	Lab	Credits
IT 101	.NET Programming 1	2	3	3
IT 110	HTML with CSS and JavaScript	3	3	4
IT 111	Database Design and SQL	3	3	4
MAT 126	Functions and Calculus	3	2	4
CIT 190	Career Preparation: Engineering and Information Technologies	1	0	1
ENG 101	English Composition 1	3	0	3
Semester 2				
IT 102	.NET Programming 2	3	3	4
ENG 10X English Composition Elective				3
PHY 151	Physics 1: Algebra and Trigonometry-Based	3	3	4
SET 151	C Programming 1	3	2	4
Semester 3				
SET 291	Full-Time Cooperative Education 1: Software Engineering Technology	1	40	2
Semester 4				
IT 103	.NET Programming 3	3	3	4
IT 161	Java Programming	3	3	4
COMM 1XX Communications Elective				3
SET 252	C Programming 2	3	2	4
Semester 5				
EET 101	Electronic Fundamentals 1	2	3	3
CULT 110	Social Issues in Technology	3	0	3
ECO 1XX Economics Elective				3
SET 253	C Programming 3	3	2	4
SET 290	Software Engineering Technology Capstone	1	4	3
Semester 6				
SET 292	Full-Time Cooperative Education 2: Software Engineering Technology	1	40	2
Total Credits:		44	116	69

Electives

English Composition Elective

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

Communication Elective

COMM 105	Interpersonal Communication	3
COMM 110	Public Speaking	3

Economics Elective

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

IT Courses

IT 100 Computer Programming Foundations

3 Credits. 2 Lecture Hours. 3 Lab Hours.

A course on fundamental concepts related to programming. Topics include: problem solving and developmental tools, design techniques such as flow charting and pseudo coding, and testing techniques used in programming.

Prerequisites: AFL 085, AFM 090 or appropriate placement test scores

IT 101 .NET Programming 1

3 Credits. 2 Lecture Hours. 3 Lab Hours.

An introduction to concepts of object-oriented software development using Visual Basic .NET. Topics include: application design methods, stages of software development, interaction with the .NET framework, and modular programming concepts utilizing procedures and functions.

Prerequisites: AFL 085 and AFM 090, or equivalent placement test scores

IT 102 .NET Programming 2

4 Credits. 3 Lecture Hours. 3 Lab Hours.

A continuation of IT 101. Topics include: object-oriented design and implementation using the .NET framework, developing class modules, and accessing and writing to external data storage and databases using ADO.NET and SQL.

Prerequisites: IT 101

IT 103 .NET Programming 3

4 Credits. 3 Lecture Hours. 3 Lab Hours.

A continuation of IT 102. Topics include creating, debugging, and maintaining Web-based database applications using the .NET framework.

Prerequisites: IT 102, IT 111

IT 105 Information Technology Concepts

3 Credits. 2 Lecture Hours. 3 Lab Hours.

A course on information technology fundamentals. Topics include; the internet, software, hardware, I/O and storage, operating systems, communications and networks, database management, security, system development, programming, enterprise computing, and numbering systems. The course is delivered through online instruction only.

Prerequisites: AFL 085 and AFM 090, or appropriate placement test scores

IT 110 HTML with CSS and JavaScript

4 Credits. 3 Lecture Hours. 3 Lab Hours.

A course on internet programming using HTML, CSS, and JavaScript. Topics include: HTML commands, cascading style sheets, JavaScript commands, web apps, and dynamic web pages.

Prerequisites: None

IT 111 Database Design and SQL

4 Credits. 3 Lecture Hours. 3 Lab Hours.

A course on fundamentals of relational database design and implementation using Microsoft SQL Server. Topics include: SQL Enterprise Manager, fundamentals of database design and normalization, data import and export, Structured Query Language (SQL), indexes and keys, views, and stored procedures.

Prerequisites: AFL 085 and AFM 090, or appropriate placement test scores

IT 112 Database Design and SQL 2

4 Credits. 3 Lecture Hours. 3 Lab Hours.

A continuation of IT 111. Topics include: advanced stored procedures using transact SQL, user defined functions, triggers, user defined data types, full text searching, replication, database maintenance plans, and designing various data models from abstract requirements.

Prerequisites: IT 111 (minimum grade C)

IT 115 Operating Systems Administration**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on the Windows operating system used on PC's. Topics include Windows utilization and management, utilities, managing disks, disaster recovery, troubleshooting, user management, productivity tools, and performance issues.

Prerequisites: AFL 085 or appropriate placement test score

IT 140 PHP and MySQL**4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course in PHP web programming with a MySQL database. Topics include: PHP language, syntax, variables, and forms; MySQL database design; connecting to a MySQL database using PHP; inserting, editing, and deleting MySQL data using PHP; and building dynamic web pages using PHP and MySQL.

Prerequisites: None

IT 150 Logistics and Distribution Technology**3 Credits. 2 Lecture Hours. 2 Lab Hours.**

A course on technologies and software used in supply chain management for freight, air, and maritime logistics operations. Topics include: barcodes, RFID, Wi-Fi tags, logistics and inventory software, high frequency tracking, and passive/active tracking.

Prerequisites: SCM 105

IT 161 Java Programming**4 Credits. 3 Lecture Hours. 3 Lab Hours.**

An introduction to the Java programming language. Topics include: data types, variables, basic command line input/output, decisions, loops, procedures, string manipulation, arrays, object-oriented development, event programming, and database programming.

Prerequisites: IT 101

IT 210 System Design and Implementation**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on methodologies and techniques of the system development life cycle. Topics include: system design, project management for IT, system implementation, programming design, and system testing techniques.

Prerequisites: BPA 130

IT 215 Scripting**3 Credits. 2 Lecture Hours. 2 Lab Hours.**

A course on task automation and configuration management using Microsoft PowerShell programming language. Topics include: modifying existing PowerShell scripts, and creating new scripts to automate common tasks.

Prerequisites: NETB 155

IT 220 Emerging Topics in Computer Software Development**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on current topics related to Computer Software Development such as data reporting, XML, and other new concerns.

Prerequisites: IT 101, IT 110, IT 111

SET Courses**SET 151 C Programming 1****4 Credits. 3 Lecture Hours. 2 Lab Hours.**

An introduction to the C and C++ computer programming languages. Topics include: decision statements, loops, functions, arrays, strings, pointers, and simple classes.

Prerequisites: IT 101

SET 191 Part-Time Cooperative Education 1: Software Engineering Technology**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: None

SET 192 Part-Time Cooperative Education 2: Software Engineering Technology**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 191

SET 193 Part-Time Cooperative Education 3: Software Engineering Technology

1 Credit. 1 Lecture Hour. 20 Lab Hours.

Students seeking an associate's degree participate in their third part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 192

SET 194 Part-Time Cooperative Education 4: Software Engineering Technology

1 Credit. 1 Lecture Hour. 20 Lab Hours.

Students seeking an associate's degree participate in their fourth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 193

SET 195 Part-Time Cooperative Education 5: Software Engineering Technology

1 Credit. 1 Lecture Hour. 20 Lab Hours.

Students seeking an associate's degree participate in their fifth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 194

SET 196 Part-Time Cooperative Education 6: Software Engineering Technology

1 Credit. 1 Lecture Hour. 20 Lab Hours.

Students seeking an associate's degree participate in their sixth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 195

SET 198 First Year Special Topics in Software Engineering Technology

1-9 Credits. 0 Lecture Hour. 0 Lab Hour.

A course on selected topics related to Software Engineering Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: Instructor Approval

SET 199 First Year Independent Project in Software Engineering Technology

1-9 Credits. 0 Lecture Hour. 0 Lab Hour.

A project related to Software Engineering Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Software Engineering Technology faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Instructor Approval

SET 252 C Programming 2

4 Credits. 3 Lecture Hours. 2 Lab Hours.

A continuation of SET 151. Topics include: classes, object-oriented programming techniques, polymorphism, inheritance, encapsulation, pointers, memory management, overloading, templates, and advanced data structures.

Prerequisites: SET 151

SET 253 C Programming 3

4 Credits. 3 Lecture Hours. 2 Lab Hours.

A continuation of SET 252. Topics include: C#, advanced database programming techniques using stored procedures and views with SQL Server, and ASP.NET with C#.

Prerequisites: IT 111, SET 252

SET 290 Software Engineering Technology Capstone

3 Credits. 1 Lecture Hour. 4 Lab Hours.

Students combine their programming and database skills to complete a software application.

Prerequisites: IT 103, IT 111, SET 252

SET 291 Full-Time Cooperative Education 1: Software Engineering Technology

2 Credits. 1 Lecture Hour. 40 Lab Hours.

Students seeking an associate's degree participate in their first full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: None

SET 292 Full-Time Cooperative Education 2: Software Engineering Technology

2 Credits. 1 Lecture Hour. 40 Lab Hours.

Students seeking an associate's degree participate in their second full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 291

SET 293 Full-Time Cooperative Education 3: Software Engineering Technology**2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their third full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 292

SET 294 Internship 1: Software Engineering Technology**2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: CIT 190

SET 295 Internship 2: Software Engineering Technology**2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their second unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: SET 294

SET 298 Second Year Special Topics in Software Engineering Technology**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A course on selected topics related to Software Engineering Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: Instructor Approval

SET 299 Second Year Independent Project in Software Engineering Technology**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A project related to Software Engineering Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Software Engineering Technology faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Instructor Approval