Business Programming and Systems Analysis (BPA)

Business Programming and Systems Analysis (BPA)

The Business Programming and Systems Analysis degree program provides the skills required to plan, design, write, implement, and support computer software for varied industries and organizations. Students gain knowledge of state-of-the-art programming languages and database management systems. Additionally, the team-oriented, project-based coursework familiarizes students with business process modeling, project management, and problem-solving skills.

Graduates earn an Associate of Applied Science degree and are well prepared to enter the workforce as skilled computer programmers or to pursue a bachelor's degree in information systems or computer science.

Courses in the Business Programming and Systems Analysis program are offered using a variety of delivery methods, including fully online and traditional in-person classes, as well as hybrid classes that combine both methods.

For more information, please contact the Center for Innovative Technologies at (513) 569-1743.

Business Programming and Systems Analysis (BPA)

Semester 1		**Lec**	**Lab**	**Credits**
ENG 101	English Composition 1 (**G**)	3	0	3
IT 110	HTML with CSS and JavaScript (**B**)	2	3	3
FYE 1XX First Year Experience Elective (**B**)		1	0	1
XXX XXX Arts/Humanities Elective (**G**)		3	0	3
IT 100	Computer Programming Foundations (**B**)	2	3	3
Semester 2				
IT 101	.NET Programming 1 (**B**)	2	3	3
IT 111	Database Design and SQL 1 (**B**)	2	3	3
BPA 130	Business Systems Analysis and Design (**B**)	2	3	3
ECO 1XX Economics Elective (**G**)		3	0	3
CIT 190	Career Preparation: Engineering and Information Technologies (**B**)	1	0	1
Semester 3				
IT 102	.NET Programming 2 (**T**)	2	3	3
IT 140	PHP and MySQL (**T**)	3	3	4
IT 161	Java Programming 1 (**T**)	2	3	3
IT 210	System Design and Implementation (**T**)	2	3	3
Semester 4				
BPA 291	Full-Time Cooperative Education 1: Business Programming and Systems Analysis (**T**)	1	40	2
XXX XXX Technical Elective 1 (**T**)		2	3	3
Semester 5				

IT 220	Emerging Topics in Computer Software Development (**T**)	2	3	3
BPA 290	Business Programming and Systems Analysis Capstone (**T**)	3	3	4
MAT XXX Mathematics Elective (**G**)		2	2	3
ENG 10X English Composition Elective (**G**)		3	0	3
IT 162	Java Programming 2 (**T**)	2	3	3
Semester 6				
BPA 292	Full-Time Cooperative Education 2: Business Programming and Systems Analysis (**T**)	1	40	2
XXX XXX Technical Elective 2 (**T**)		2	3	3
Total Credits:		48	124	65

Electives

First Year Experience Elective		
FYE 100	College Survival Skills	1
FYE 105	College Success Strategies	2
FYE 110	Community College Experience	3
Arts/Humanities Elective		
Any Transfer Module course from ART, LIT, MUS, PHI, REL, THE, or COMM 130		3
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
Economics Elective		
ECO 105	Principles of Microeconomics	3
ECO 110	Principles of Macroeconomics	3
Mathematics Elective		
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
Technical Electives *		
Take two courses from the following:		
BPA 230	Mobile Application Development	4
BPA 240	Emerging Technologies: Web and Mobile Applications	4
BPA 211	Business Application Development 1: RPGLE/DB2	4
BPA 212	Business Application Development 2: RPGLE/DB2	4
CPDM 151	ASP.NET C# 1	3
CPDM 152	ASP.NET C# 2	3
IT 112	Database Design and SQL 2	4
NETC 121	Network Communications 1	3
NETC 122	Network Communications 2	3

* Students should consult with their advisor before registering for Technical Electives

Faculty

Program Chair/Advisor

Professor Robert Nields, MBA
robert.nields@cincinnatistate.edu

Co-op Coordinator

Professor Noelle Grome, ME, MA
noelle.grome@cincinnatistate.edu

BPA Courses

BPA 130 Business Systems Analysis and Design
3 Credits. 2 Lecture Hours. 3 Lab Hours.
An introductory course on business systems analysis within the framework of the system development life cycle. Topics include: business case analysis, requirement gathering, requirement modeling, enterprise modeling, and development strategies.
Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

BPA 191 Part-Time Cooperative Education 1: Business Programming and Systems Analysis
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

BPA 192 Part-Time Cooperative Education 2: Business Programming and Systems Analysis
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: BPA 191

BPA 193 Part-Time Cooperative Education 3: Business Programming and Systems Analysis
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: BPA 192

BPA 194 Part-Time Cooperative Education 4: Business Programming and Systems Analysis
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: BPA 193

BPA 195 Part-Time Cooperative Education 5: Business Programming and Systems Analysis
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: BPA 194

BPA 196 Part-Time Cooperative Education 6: Business Programming and Systems Analysis
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: BPA 195

BPA 198 First Year Special Topics in Business Programming and Systems Analysis
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A course on selected topics related to Business Programming and Analysis, 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

BPA 199 First Year Independent Project in Business Programming and Systems Analysis
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A project related to Business Programming and Analysis that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Business Programming and Analysis faculty. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: Instructor Approval

BPA 211 Business Application Development 1: RPGLE/DB2
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on the IBM operating system and utilities including DB2, Control Language, Query, SDA, and SQL. Topics include: RPGLE utilization of forms/specifications, language operation codes and special functions used to generate reports, and transaction level file maintenance.
Prerequisites: IT 102

BPA 212 Business Application Development 2: RPGLE/DB2
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A continuation of BPA 211. Topics include: RPGLE procedural programming including arrays/list processing, interactive applications, and subfiles; interactive and embedded SQL; and ILE programming through service programs to address introductory cross-platform programming.
Prerequisites: BPA 211

BPA 230 Mobile Application Development
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on designing and programming applications for current mobile devices. Topics include: GUI programming application structure; and considerations related to network, database, video, GPS sensors, and multi-touch.
Prerequisites: None

BPA 240 Emerging Technologies: Web and Mobile Applications
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on emerging technologies in software and applications development for the Web and mobile devices.
Prerequisites: BPA 230

BPA 290 Business Programming and Systems Analysis Capstone
4 Credits. 3 Lecture Hours. 3 Lab Hours.
Students work on a team project that demonstrates mastery of skills gained throughout their degree studies. Topics include: analyzing requirements, determining an IT solution, and implementing an IT solution.
Prerequisites: BPA 211, IT 161, and IT 210

BPA 291 Full-Time Cooperative Education 1: Business Programming and Systems Analysis
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

BPA 292 Full-Time Cooperative Education 2: Business Programming and Systems Analysis
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: BPA 291

BPA 293 Full-Time Cooperative Education 3: Business Programming and Systems Analysis
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: BPA 292

BPA 294 Internship 1: Business Programming and Systems Analysis
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

BPA 295 Internship 2: Business Programming and Systems Analysis
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: BPA 294

BPA 298 Second Year Special Topics in Business Programming and Systems Analysis
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A course on selected topics related to Business Programming and Analysis, 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

BPA 299 Second Year Independent Project in Business Programming and Systems Analysis
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A project related to Business Programming and Analysis that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Business Programming and Analysis faculty. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: Instructor Approval

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 and AFM 092 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 092, or equivalent placement test scores

IT 102 .NET Programming 2
3 Credits. 2 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
3 Credits. 2 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 and 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, input/output (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 092, or appropriate placement test scores

IT 110 HTML with CSS and JavaScript
3 Credits. 2 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 applications (apps), and dynamic web pages.
Prerequisites: None

IT 111 Database Design and SQL 1
3 Credits. 2 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 092, or appropriate placement test scores

IT 112 Database Design and SQL 2
3 Credits. 2 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 data models from abstract requirements.
Prerequisites: IT 111 (minimum grade C)

IT 115 Operating Systems Administration 1
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on the Windows operating system used on PCs. Topics include Windows utilization and management, utilities, managing disks, disaster recovery, troubleshooting, user management, productivity tools, and performance issues. This course prepares students for a Microsoft Certification exam.
Prerequisites: AFL 085 or appropriate placement test score

IT 116 Operating Systems Administration 2
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A continuation of IT 115. Topics include: managing software problems; managing virtualization; and client configuration, development, deployment, and security. This course prepares students for a Microsoft Certification exam.
Prerequisites: IT 115

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: Take IT 101, IT 110 and IT 111 (minimum grade of C for all)

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 1
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on fundamentals of 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 162 Java Programming 2
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A continuation of IT 161. Topics include: Java Server Pages (JSP) and complex database applications using Java and JSP.
Prerequisites: IT 161

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