

**Semester 1**

Course ID	Course Title	Credits	Pre/Co-requisites	Industry Certification
ENC 1101	English Composition I	3	Prerequisite: Student must meet the Developmental Education reading and writing requirements in State Rule 6A-10.0315 (by course, placement score, or eligible exemption).	
MAC 1105	College Algebra	3	Prerequisite: MAT 1033♦ ♦Students must seek advisement for proper mathematics course from discipline chairperson.	
CGS 1060C*	Introduction to Computer Technology and Applications	4		
COP 1047C*	Introduction to Python Programming	4		
<b>Semester Credits</b>		<b>14</b>		

**Semester 2**

Course ID	Course Title	Credits	Pre/Co-requisites	Industry Certification
COP 1334*	Introduction to C++ Programming	4		
CGS 1540C*	Database Concepts and Design	4		
COP 2800*	Java Programming	4	Prerequisite: COP 1047C, COP 1334 or COP 2270	
<b>Semester Credits</b>		<b>12</b>		

**Semester 3**

Course ID	Course Title	Credits	Pre/Co-requisites	Industry Certification
Social Science	AMH 2010, AMH 2020, POS 2041	3		
GEB 1432	Applied Artificial Intelligence (AI) in Business	3		
CIS 2331*	Systems Analysis, Design and Implementation	5		
<b>Semester Credits</b>		<b>11</b>		

**Semester 4**

Course ID	Course Title	Credits	Pre/Co-requisites	Industry Certification
COP 2041C	Python Programming 2	4	Prerequisite for COP 2041C: COP 1047C	
COP 2335* --OR-- COP 2805C*	C++ Programming 2 --OR-- Advanced Java Programming	4	Prerequisite for COP 2335: COP 1334 Prerequisite for COP 2805C: COP 2800	<a href="#">Oracle Certified Professional, Java SE 8 Programmer Certification</a>
Elective	CAI*, CEN*, COP*, CTS* CGS 2091, EET 1033C, PHI 2680	4		
<b>Semester Credits</b>		<b>12</b>		

**Semester 5**

Course ID	Course Title	Credits	Pre/Co-requisites	Industry Certification
Humanities	ARH 1000, HUM 1020, LIT 2000, MUL 1010, PHI 2010, THE 2000	3	<b>Note:</b> ENC 1101 is a prerequisite to LIT 2000.	
Natural Science	AST 1002, BSC 1005, CHM 1020, ESC 1000, EVR 1001, GLY 1010, OCE 1001, PHY 1020, PHY 2053	3	<b>Note:</b> Check with advisor for requisite information	
Elective	CAI*, CEN*, COP*, CTS* CGS 2091, EET 1033C, PHI 2680	5		
<b>Semester Credits</b>		<b>11</b>		
<b>Program Total</b>		<b>60</b>		

**Academic Pathway at MDC:** The AS in Computer Programming and Analysis - Business Applications is a pathway to the [BAS in Leadership and Management Innovation](#). ★ Course leads to a [College Credit Certificate \(CCC\) in Computer Programmer - Business Applications](#). In addition, the courses lead to an industry certification through [Oracle](#). To learn more about the courses listed see [College Catalog](#). Some [industry certifications](#) are eligible for reimbursement.