Associate of Science to Bachelor of Science in Computer Information Technology – All Tracks

Completion of the following curriculum will satisfy the requirements for the **Associate of Science (AS)** degree at a Kentucky Community and Technical College System institution and leads to the **Bachelor of Science in Computer Information Technology** degree at Northern Kentucky University.

There are two Associate of Science degrees in this document. The first AS degree prepares students for a major in Computer Information Technology with the Network and System Administration Track or the Cybersecurity Track. The second AS degree prepares students for a major in Computer Information Technology with the Web and Database Track or the Non-Specialist Track.

Admission Requirements for a Bachelor of Science in Computer Information Technology

Students completing the AS with a gpa of 2.0 or higher will be admitted into the Computer Information Technology major at NKU.

Students with current certification at the time of registering for classes will receive credit for equivalent NKU courses based on the following course mappings.

Examination	Equivalent NKU Courses	Semester Credits
CCNA Routing and Switching	CIT 247 Networking Fundamentals CIT 447 Network Design/Troubleshooting	6
CCNA Security	CIT 247 Networking Fundamentals CIT 484 Network Security	6
Security+ (versions SY0-501 and later)	CIT 285 Cybersecurity Fundamentals	3
OCA – Oracle Certified Associate	CIT 472 Database Administration	3

Note: Students with Security+ exams SY0-401 and below will be required to take CIT 285.

GCTC AS TO NKU BS IN COMPUTER INFORMATION TECHNOLOGY – ALL TRACKS CHECKLIST

Gateway Community and Technical College

Category I: General Education Requirements				
GCTC Course	Course or Category	Credits	NKU Course	✓
ENG 101	Writing I (WC)	3	ENG 101	
ENG 102	Writing II (WC)	3	ENG 291	
COM 181	Basic Public Speaking (OC)	3	CMST 101	
TBS XXX	Arts & Humanities (AH) Heritage	3	TBD XXX	
TBS XXX	Arts & Humanities (AH) Humanities	3	TBD XXX	
TBS XXX	Social & Behavioral Sciences (SB)	3	TBD XXX	
TBS XXX	Social & Behavioral Sciences (SB)	3	TBD XXX	
TBS XXX	Natural Science with Lab (SL)	4	TBD XXX	
TBS XXX	Natural Science (NS)	3	TBD XXX	
MAT 150	College Algebra (QR)	3	MAT 109	
STA 220	Statistics (QR)	3	STA 205	
Subtotal General Education Courses		**34**		

TBS XXX means to be selected.
TBD XXX means to be determined.

Category II: Degree Requirements for the AS				
GCTC Course	Course or Category	Credits	NKU Course	✓
TBS XXX	Quantitative Reasoning (QR)	3	TBD XXX	
TBS XXX	Quantitative Reasoning (QR)	3	TBD XXX	
TBS XXX	General Education Elective	3	TBD XXX	
TBS XXX	General Education Elective	3	TBD XXX	
CIT 105	Introduction to Computers (if needed)	0-3	BIS 101	
CIT 120	Computational Thinking	3	INF 100T	
CIT 141 or CIT 142 or CIT 143 or CIT 144 or CIT 145 or CIT 146 or CIT 147 or CIT 148 or CIT 149 or CS 115	Level I Programming Language Course: PHP I or C++ I or C# I or Python I or Perl I or Swift I or Programming I: Language or Visual Basic I or Java I or Introduction to Computer Programming	3	INF 120	
CIT 150 or CIT 155 or IMD 230	Internet Technologies (CIT Technical) or Web Page Development (CIT Technical) or Advanced Web Design (CIT Technical)	3	INF 286	

CIT 170	Database Design and Fundamentals	3	INF 282	
TBS XXX	Elective	3	TBD XXX	
	Total Associate Degree Credit Hours	**61-64**		

Northern Kentucky University

<table>
<tr><td colspan="5" style="background-color:#b7dde8">Category III: Major Requirements for the BS in Computer Information Technology</td></tr>
<tr><th>NKU Course</th><th>Course</th><th>Credits</th><th>GCTC Course</th><th>Taken at GCTC</th></tr>
<tr><td>INF 120</td><td>Elementary Programming</td><td>0</td><td>CIT 141 or CIT 142 or CIT 143 or CIT 144 or CIT 145 or CIT 146 or CIT 147 or CIT 148 or CIT 149 or CS 115</td><td>x</td></tr>
<tr><td>INF 282</td><td>Introduction to Databases</td><td>0</td><td>CIT 170</td><td>x</td></tr>
<tr><td>INF 286</td><td>Introduction to Web Development</td><td>0</td><td>CIT 150 or CIT 155 or IMD 230</td><td>x</td></tr>
<tr><td>CIT 130</td><td>Information Technology Fundamentals</td><td>3</td><td>CIT 111 + CIT 217 + CIT 160 or CIT 161 = CIT 130 + CIT 100T + INF 284</td><td></td></tr>
<tr><td>CIT 247</td><td>Networking Fundamentals</td><td>3</td><td>CIT 167</td><td></td></tr>
<tr><td>CIT 271</td><td>Windows Administration</td><td>3</td><td>CIT 213 + CIT 215 = CIT 271 + CIT 200T</td><td></td></tr>
<tr><td>CIT 285</td><td>Cybersecurity Fundamentals</td><td>3</td><td>CIT 180 +CIT 182 = CIT 285 +CIT 100T</td><td></td></tr>
<tr><td>CIT 371</td><td>Unix Systems</td><td>3</td><td></td><td></td></tr>
<tr><td>CIT 383</td><td>Scripting</td><td>3</td><td></td><td></td></tr>
<tr><td>STA 205 or STA 250</td><td>Introduction to Statistical Methods or Probability and Statistics</td><td>0</td><td>STA 220</td><td>x</td></tr>
<tr><td>PHI 310</td><td>Information Ethics</td><td>3</td><td></td><td></td></tr>
<tr><td>ENG 347</td><td>Technical Writing</td><td>3</td><td></td><td></td></tr>
<tr><td></td><td>Select one track from following tracks:
   Network and Administration Track
   Web and Database Administration Track
   Cybersecurity Track
   Non-Specialist Track
(Required courses are listed in Category IV boxes below.)</td><td>18</td><td></td><td></td></tr>
<tr><td></td><td>Any NKU minor may be selected. Information Systems and Computer Science are common choices and require at most 15 additional credits.</td><td>15</td><td></td><td></td></tr>
</table>

	(Required courses for these minors are listed in Category V boxes below.)				
	Additional hours at the 300/400-level to meet the 45 credit hour graduation requirement*	3-9			
Subtotal NKU Courses Credit Hours		**60-66**			
Total Baccalaureate Degree Credit Hours		**124-130**			

*Students selecting minors other than Information Systems and Computer Science may need additional hours to complete this requirement.

Students must choose a track as part of the Computer Information Technology major.

Category IV: Network and System Administration Track				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
CIT 447	Network Design/Troubleshooting	3		
CIT 470	Advanced Network and System Administration	3		
CIT 484	Network Security	3		
CIT XXX	300/400-level CIT Course (not above)	3		
CIT XXX	300/400-level CIT Course (not above)	3		
CIT XXX	300/400-level CIT Course (not above)	3		
Additional Credit Hours in Track		**18**		

Category IV: Web and Database Administration Track				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
CSC 260	Object-Oriented Programming I	3	CIT 149 +CIT 249= CSC 260 +CSC 360	
CSC 360	Object-Oriented Programming II	3	CIT 149 +CIT 249= CSC 260 +CSC 360	
CSC 301	Web Programming	3		
CIT 436	Web Server Administration	3		
CIT 472	Database Administration	3		
CSC 456 or CIT XXX	Advanced Web Application Development or One 300/400-level CIT course	3		
Additional Credit Hours in Track		**18**		

Category IV: Cybersecurity Track				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
CIT 430	Computer Forensics	3		
CIT 484	Network Security	3		
CIT 485	Advanced Cybersecurity	3		
CIT XXX	300/400-level CIT Course (not above)*	3		
CIT XXX	300/400-level CIT Course (not above)*	3		
CIT XXX	300/400-level CIT Course (not above)*	3		
Additional Credit Hours in Track		**18**		

*BIS 383, CSC 482 and CSC 483 may count toward these electives.

Category IV: Non-Specialist Track				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
CSC 260	Object-Oriented Programming I	3	CIT 149 +CIT 249= CSC 260 +CSC 360	
CSC 360	Object-Oriented Programming II	3	CIT 149 +CIT 249= CSC 260 +CSC 360	
CIT 436 or CIT 438 or CIT 472	Web Server Administration or Cloud Computing or Database Administration	3		
CIT 470 or CIT 485	Advanced Network and System Administration or Advanced Cybersecurity	3		
CIT XXX	One 300/400-level CIT course	3		
CIT XXX	One 300/400-level CIT course	3		
Additional Credit Hours in Track		**18**		

Students may choose one of the minors listed below or any other minor offered at NKU.

Category VI: Additional Requirements for Information Systems Minor				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
INF 120	Elementary Programming	0	CIT 141 or CIT 142 or CIT 143 or CIT 144 or CIT 145 or CIT 146 or CIT 147 or CIT 148 or CIT 149 or CS 115	x
INF 282	Introduction to Databases	0	CIT 170	x
INF 286	Introduction to Web Development	0	CIT 150 or CIT 155 or IMD 230	x
BIS 275	Introduction to Business Analysis	3		

BIS 300	Management Information Systems	3		
BIS 310	Information Systems Analysis	3	CIT 291	
BIS 330	IT Project Management	3		
BIS XXX	One 300/400-level BIS course from list	3		
Additional Credit Hours in Minor		**15**		

Category VI: Additional Requirements for Computer Science Minor				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
INF 120	Elementary Programming	0	CIT 141 or CIT 142 or CIT 143 or CIT 144 or CIT 145 or CIT 146 or CIT 147 or CIT 148 or CIT 149 or CS 115	x
CSC 260	Object-oriented Programming I	3	CIT 149 +CIT 249= CSC 260 +CSC 360	
CSC 360	Object-oriented Programming II	3	CIT 149 +CIT 249= CSC 260 +CSC 360	
CSC 362 or CSC 364	Computer Systems or Data Structures and Algorithms	3		
CSC XXX	One 300/400-level CSC course	3		
CSC XXX	One 300/400-level CSC course	3		
INF XXX or CSC XXX or CIT XXX	Two 300/400-level INF, CSC, or CIT courses (met by CIT major requirements)	0		
Additional Credit Hours in Minor		**15**		

GCTC AS TO NKU BS IN COMPUTER INFORMATION TECHNOLOGY –
WEB AND DATABASE ADMINISTRATION OR NON-SPECIALIST TRACK CHECKLIST

Gateway Community and Technical College

Category I: General Education Requirements				
GCTC Course	**Course or Category**	**Credits**	**NKU Course**	✓
ENG 101	Writing I (WC)	3	ENG 101	
ENG 102	Writing II (WC)	3	ENG 291	
COM 181	Basic Public Speaking (OC)	3	CMST 101	
TBS XXX	Arts & Humanities (AH) Heritage	3	TBD XXX	
TBS XXX	Arts & Humanities (AH) Humanities	3	TBD XXX	
TBS XXX	Social & Behavioral Sciences (SB)	3	TBD XXX	
TBS XXX	Social & Behavioral Sciences (SB)	3	TBD XXX	
TBS XXX	Natural Science with Lab (SL)	4	TBD XXX	
TBS XXX	Natural Science (NS)	3	TBD XXX	
MAT 150	College Algebra (QR)	3	MAT 109	
STA 220	Statistics (QR)	3	STA 205	
Subtotal General Education Courses		**34**		

TBS XXX means to be selected.
TBD XXX means to be determined.

Category II: Degree Requirements for the AS				
GCTC Course	**Course or Category**	**Credits**	**NKU Course**	✓
TBS XXX	Quantitative Reasoning (QR)	3	TBD XXX	
TBS XXX	Quantitative Reasoning (QR)	3	TBD XXX	
TBS XXX	General Education Elective	3	TBD XXX	
TBS XXX	General Education Elective	3	TBD XXX	
CIT 105	Introduction to Computers (if needed)	0-3	BIS 101	
CIT 111	Computer Hardware and Software	3	CIT 100T	
CIT 120 +	Computational Thinking and	3	INF 120 +	
CIT 149 +	Java I and	3	CSC 260 +	
CIT 249	Java II	3	CSC 360	
CIT 170	Database Design and Fundamentals	3	INF 282	
Total Associate Degree Credit Hours		**61-64**		

Northern Kentucky University

NKU Course	Course	Credits	GCTC Course	Taken at GCTC
Category III: Major Requirements for the BS in Computer Information Technology				
INF 120	Elementary Programming	0	CIT 141 or CIT 142 or CIT 143 or CIT 144 or CIT 145 or CIT 146 or CIT 147 or CIT 148 or CIT 149 or CS 115	x
INF 282	Introduction to Databases	0	CIT 170	x
INF 286	Introduction to Web Development	3	CIT 150 or CIT 155 or IMD 230	
CIT 130	Information Technology Fundamentals	3	CIT 111 + CIT 217 + CIT 160 or CIT 161 = CIT 130 + CIT 100T + INF 284	
CIT 247	Networking Fundamentals	3	CIT 167	
CIT 271	Windows Administration	3	CIT 213 + CIT 215 = CIT 271 + CIT 200T	
CIT 285	Cybersecurity Fundamentals	3	CIT 180 + CIT 182 = CIT 285 + CIT 100T	
CIT 371	Unix Systems	3		
CIT 383	Scripting	3		
STA 205 or STA 250	Introduction to Statistical Methods or Probability and Statistics	0	STA 220	x
PHI 310	Information Ethics	3		
ENG 347	Technical Writing	3		

	Select one track from following tracks:
	   Web and Database Administration Track
	   Non-Specialist Track
	(Required courses are listed in Category IV boxes below.)
		12		

	Any NKU minor may be selected. Information Systems and Computer Science are common choices and require at most 15 additional credits. (Required courses for these minors are listed in Category V boxes below.)	9-15		
	Additional hours at the 300/400-level to meet the 45 credit hour graduation requirement*	3-9		
Subtotal NKU Courses Credit Hours		**57-60**		
Total Baccalaureate Degree Credit Hours		**121-124**		

*Students selecting minors other than Information Systems and Computer Science may need additional hours to complete this requirement.

Students must choose a track as part of the Computer Information Technology major. The recommended tracks for this pathway are Web and Database Administration Track and Non-Specialist Track.

Category IV: Web and Database Administration Track				
NKU Course	Course	Credits	GCTC Course	Taken at GCTC
CSC 260	Object-Oriented Programming I	0	CIT 149 +CIT 249= CSC 260 +CSC 360	x
CSC 360	Object-Oriented Programming II	0	CIT 149 +CIT 249= CSC 260 +CSC 360	x
CSC 301	Web Programming	3		
CIT 436	Web Server Administration	3		
CIT 472	Database Administration	3		
CSC 456 or CIT XXX	Advanced Web Application Development or One 300/400-level CIT course	3		
Additional Credit Hours in Track		**12**		

Category IV: Non-Specialist Track				
NKU Course	Course	Credits	GCTC Course	Taken at GCTC
CSC 260	Object-Oriented Programming I	0	CIT 149 +CIT 249= CSC 260 +CSC 360	x
CSC 360	Object-Oriented Programming II	0	CIT 149 +CIT 249= CSC 260 +CSC 360	x
CIT 436 or CIT 438 or CIT 472	Web Server Administration or Cloud Computing or Database Administration	3		
CIT 470 or CIT 485	Advanced Network and System Administration or Advanced Cybersecurity	3		
CIT XXX	One 300/400-level CIT course	3		
CIT XXX	One 300/400-level CIT course	3		
Additional Credit Hours in Track		**12**		

Students may choose one of the minors listed below or any other minor offered at NKU.

Category VI: Additional Requirements for Information Systems Minor				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
INF 120	Elementary Programming	0	CIT 141 or CIT 142 or CIT 143 or CIT 144 or CIT 145 or CIT 146 or CIT 147 or CIT 148 or CIT 149 or CS 115	x
INF 282	Introduction to Databases	0	CIT 170	x
INF 286	Introduction to Web Development (Requirement for CIT major above)	3	CIT 150 or CIT 155 or IMD 230	
BIS 275	Introduction to Business Analysis	3		
BIS 300	Management Information Systems	3		
BIS 310	Information Systems Analysis	3	CIT 291	
BIS 330	IT Project Management	3		
BIS XXX	One 300/400-level BIS course from list	3		
Additional Credit Hours in Minor		**18**		

Category VI: Additional Requirements for Computer Science Minor				
NKU Course	**Course**	**Credits**	**GCTC Course**	**Taken at GCTC**
INF 120	Elementary Programming	0	CIT 141 or CIT 142 or CIT 143 or CIT 144 or CIT 145 or CIT 146 or CIT 147 or CIT 148 or CIT 149 or CS 115	x
CSC 260	Object-oriented Programming I	0	CIT 149 +CIT 249= CSC 260 +CSC 360	x
CSC 360	Object-oriented Programming II	0	CIT 149 +CIT 249= CSC 260 +CSC 360	x
CSC 362 or CSC 364	Computer Systems or Data Structures and Algorithms	3		
CSC XXX	One 300/400-level CSC course	3		
CSC XXX	One 300/400-level CSC course	3		
INF XXX or CSC XXX or CIT XXX	Two 300/400-level INF, CSC, or CIT courses (met by CIT major requirements)	0		
Additional Credit Hours in Minor		**9**		