Bachelor of Applied Science Degree (BAS)
APPLICATION DEVELOPMENT

Program Planning Sheet (Scope & Sequence)

The BAS in Application Development is a degree designed to prepare students for entry-level positions in software development careers by providing industry-relevant applied education in application development. Instruction focuses on current industry trends including web, cloud, data science and mobile applications, as well as industry practices such as Agile and collaborative development. A strong emphasis on industry-based projects throughout the program will prepare graduates to meet current and future industry needs and emerging software trends.

Prerequisites for Admission:

- **Applicants must have an associate's degree (or equivalent credits) from a regionally accredited institution with a minimum cumulative 2.5 GPA and a 2.5 GPA or higher in all IT courses. Any General Education Requirements taken as part of the associate degree can be transferred in to the requirements below.**

- **The following courses are prerequisites (equivalent courses may be substituted):**

Example Course Numbers			PREREQUISITES	CREDIT HOURS
North	**Central**	**South**	**PREREQUISITES – IT Courses:**	
CSC 110, CSC 142, IT 211	CSC 110, CSC 142, IT 111, IT 211	CSC 110, CSC 142	**Programing:** - 5 credits of Object-oriented programming strongly recommended	10
IT 125	IT 120, IT 222, IT 223	N/A	**Database Development / Programming in SQL.**	5
IT 102, IT 161	IT 121, IT 122, IT 221 IT 161, IT 162, IT 163	N/A	**Web programming / JavaScript**	5
			PREREQUISITE – Gen Ed:	
Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning Course	Quantitative/Symbolic Reasoning Course	**Quantitative/Symbolic Reasoning (QSR)** - Statistics or Pre-Calculus Recommended	5
English / Communication Courses	English / Communication Courses	English / Communication Courses	**Communication Skills** - ENGL& 101	5

COURSE NUMBER	GENERAL EDUCATION/RELATED INSTRUCTION REQUIREMENTS (60 CREDITS MINIMUM)	LECTURE HOURS	LAB HOURS	CREDIT HOURS
	Typically 15 or more of the following credits must be completed before beginning AD-BAS degree			
	Prerequisite Courses - Communication skills (ENGL& 101) - Quantitative Symbolic Reasoning Course	110		10
English / Communication Courses	**Communication Skills** - 5 credits in a composition, writing-intensive, or basic speaking skills course.	55		5
Any Natural World Course (5 credits must be a lab)	**The Natural World** - At least one 5-credit lab class required. See list on page 4 for acceptable courses	Varies	Varies	10
Humanities	**Visual, Literary, and Performing Arts** - See list on page 4 for acceptable course ideas	110		10
Social Sciences	**Individuals, Cultures, and Societies** - See list on page 4 for acceptable course ideas	110		10
Other General Education Credits	**Gen Ed Courses suited for AD-BAS Degree:** - credits may be selected to best suit the needs of the baccalaureate program	165		15
TOTAL				**60**

COURSE NUMBER	DEGREE/CERTIFICATE REQUIREMENTS (CREDITS)	LECTURE HOURS	LAB HOURS	CREDIT HOURS
AD 300	- Component Software or CSC 143	55		5
AD 315	- Discrete Mathematics	55		5
AD 320	- Web Application Development	55		5
AD 325	- Data Structures and Algorithms	55		5
AD 340	- Mobile Application Development	55		5
AD 350	- Relational Database Technology	55		5
AD 400	- Project Management in Software Development	55		5
AD 410	- Web Application Practicum		165	5
AD 420	- Cloud Computing – Software as a Service	55		5
AD 430	- Mobile Application Practicum		165	5
AD 440	- Cloud Computing Practicum		165	5
AD 450	- Data Science Development	55		5
AD 470	- Data Science Practicum		165	5
AD 490	- Internship – or – Capstone		275	5
TOTAL				**70**

COURSE NUMBER	ELECTIVES (CREDITS)	LECTURE HOURS	LAB HOURS	CREDIT HOURS
Varies	Includes any credits taken towards the associate degree and/or technology prerequisites	varies	varies	**50**
TOTAL CREDITS FOR DEGREE				**180**

Suggested Sequence for the Full-Time Student:

Fall, year 1	Winter, Year 1	Spring, Year 1
Component Software (5) – AD 300 Or Programming II (5) – CSC 143 Prereq: Program entry	Data Structures and Algorithms (5) – AD 325 Prereq: AD 300 or CSC 143	Mobile Application Development (5) – AD 340 Prereqs : AD 320 & AD 325
Project Management in Software Development (5) – AD 400 Prereq: Program entry	Relational Database Technology (5) – AD 350 Prereq: Program entry	Web Applications Practicum (5) – AD 410 Prereqs: AD 320 & AD 400
Gen Ed (5)	Web Application Development (5) – AD 320 Prereq: Program entry, IT 102 or IT 111	Discrete Mathematics (5) – AD 315 Prereq: Program entry

Fall, Year 2	Winter, Year 2	Spring, Year 2
Cloud Computing – Software as a Service (5) – AD 420 Prereqs: AD 320, AD 325 & AD 350	Data Science Development (5) – AD 450 Prereq: AD 325	Internship – or – Capstone (5) – AD 490 Faculty permission
Mobile Application Practicum (5) – AD 430 Prereqs: AD 340, AD 320 & AD 400	Cloud Computing Practicum (5) – AD 440 Prereqs: AD 420, AD 320 & AD 400	Data Science Practicum (5) – AD 470 Prereq: AD 450
Gen Ed (5)	Gen Ed (5)	Gen Ed (5)

Potential Sequence for the Part-Time Student:

Fall, year 1	Winter, Year 1	Spring, Year 1
Component Software (5) – AD 300 Or Programming II (5) – CSC 143 Prereq: Program entry	Web Application Development (5) – AD 320 Prereq: Program entry, IT 102 or IT 111	Web Applications Practicum (5) – AD 410 Prereqs: AD 320 & AD 400
Project Management in Software Development (5) – AD 400 Prereq: Program entry	Data Structures and Algorithms (5) – AD 325 Prereq: AD 300 or CSC 143	Gen Ed (5)

Fall, Year 2	Winter, Year 2	Spring, Year 2
Cloud Computing – Software as a Service (5) – AD 420 Prereqs: AD 320, AD 325 & AD 350	Cloud Computing Practicum (5) – AD 440 Prereqs: AD 420, AD 320 & AD 400	Mobile Application Development (5) – AD 340 Prereqs : AD 320 & AD 325
Gen Ed (5)	Relational Database Technology (5) – AD 350 Prereq: Program entry	Discrete Mathematics (5) – AD 315 Prereq: Program entry

Fall, year 3	Winter, Year 3	Spring, Year 3
Mobile Application Practicum (5) – AD 430 Prereqs: AD 340, AD 320 & AD 400	Data Science Development (5) – AD 450 Prereq: AD 325	Internship – or – Capstone (5) – AD 490 Faculty permission
Gen Ed (5)	Gen Ed (5)	Data Science Practicum (5) – AD 470 Prereq: AD 450

Areas of Knowledge Distribution Requirements for BAS degree

VISUAL, LITERARY, AND PERFORMING ARTS (Humanities and Arts) 10 CREDITS
You are required to complete 10 credits.

Art: ART &100, 101*, 102*, 103*, 104, 105, 110*, 111*, 112*, 113*, 114*, 115,* 121*, 122*, 123*, 163, 166*, 170, 201*, 202*, 203*, 205*, 206*, 207*, 210*, 211*, 212*, 213*, 214*, 215*, 216*,217*, 221*, 222*, 223*, 251, 252, 253, 254, 255, 281*, 282*, 283*, 284*, 285*, 290, 291

American Sign Language: ASL &121, &122, &123, 210, &221, &222, &223

Chinese: CHIN &121, &122, &123, &221, &222, &223

Communication: CMST &101, &102, 115, 145, 155, 175, 185, 195, 205, &210, 215, &220, &230, 235, 245, 255, 265, 275, 285, 295

Drama: DRMA &101, 103, 105, 108*, 109*, 110*, 112, 114*, 116*, 120*, 121*, 122*, 123*, 131, 182*, 204*, 205*, 206*, 221*, 222*, 223*, 284, 285, 286

English: ENGL 104, 109, &111, &112, &113, &114, 117, 151, 152, 153, 201, 204, 205, 214, 218, 219, &224, &225, &226, &227, &228, 231, 232, 233, &235, 240, 241, &244, &245, &246, 251, 252, 253, &254, &256, 257, 258, 259, 260, 263, 265, 266, 267, 270, 291, 292, 293

French: FRCH &121, &122, &123, 204, 205, 206, 212, &221, &222, &223, 231, 232, 233

German: GERM &121, &122, &123

Humanities: HUM 104, 105, 110, 115, &116, &117, &118, 120, 125, 130, 135, 140, 150, 160, 200, 210, 234, 261, 270

Italian: ITAL 121, 122, 123

Japanese: JAPN &121, &122, &123, &221, &222, &223

Journalism: JRN 101, 102, 103

Linguistics: LAN 101, 110

Literature: LIT 236, 238

Music: MUSC 100, &105, 106, 109, 110, 113, 116, 117, 119*, 120*, 125, 126*, 127*, 128*, 130*, 134 - 140*, &141, &142, &143, 144*, 145*, 146*, 147*, 148*, 150*, 151*, 156*, 157*, 158*, 160, 161, 163, 164*, 165*, 166*, 171*, 172*, 173*, 182*, 185, 204, 205, 213, 221*, 222*, 223*, &231, &232, &233

Russian: RUSS &121, &122, &123

Spanish: SPA &121, &122, &123, &221, &222, &223, 236, 238

Vietnamese: VIET &121, &122, &123

INDIVIDUALS, CULTURES, AND SOCIETIES (Social Sciences) 10 CREDITS
You are required to complete 10 credits.

American Ethnic Studies: AME 150, 151, 160, 201

Anthropology: ANTH &100, &106, 113, &125, 130, 135, 201, &206, &210, 211, 212, 213, &216, &227, &228, 275

American Sign Language: ASL 120, 125

Biology: BIOL 150

Economics: ECON 100, 102, &201, &202, 240

Environmental Science: ENV 150, 160, 170, 200, 202, 206, 208, 214, 294

Environmental Science: ENVS &101

Geography: GE0G 100&, 155, 200&, 205, 207, 230, 260

History: HIST 105, 106, 108, 120, &126, &127, &128, 131, &136, &137, 138, 140, 145, &146, &147, &148, 150, 191, 200, 208, 210, 211, 212, &214, &219, 221, 230, 241, 242, 251, 268, 269, 273

International Studies: ISP 101, 105, 110, 120, 160, 170, 201, 205, 210, 220, 234, 251, 255, 260, 261, 270

Philosophy: PHIL &101, 102, 110, 111, 118, 160, 215, 220, 240, 245, 250, 255, 267

Political Science: POLS &101, 111, 112, 170, &200, &202, &203, 205, 206, 213, 220, 255

Psychology: PSYC &100, 120, &200, 205, 207, 209, 210, 217, &220, 230, 235, 245, 250, 255, 257, 294

Religion: REL 150, 151

Sociology: SOC &101, 102, 105, 106, 107, 120, 130, 150, 170, &201, 220, 230, 245, 250, 253, 265, 275, 280

Social Science: SSC 101, 103, 187

Social Welfare: SWF 200

STEM: STEM 118

Women's Studies: WMN 140, 200, 205, 213, 257

THE NATURAL WORLD (Natural and Physical Sciences) 10 CREDITS
You are required to complete 10 credits. At least five credits must be in a lab science (*asterisked below).

Anatomy & Physiology: BIOL 128*, &241*, &242* Astronomy: ASTR &100, 102, 104, &110*, 201

Anthropology: ANTH &204, &205, 275

Biology: BIOL &100*, 102*, 106*, 107*, 109, 120*, 125*, 130*, 150, &160*, 161*, 195, 196, &211*, &212*, &213*, 228*, 229*, 239*, &260*, 282*, 285*, 286*, 287*, 290, SPS 201* Botany: BOT 110*, 112*, 113*

Chemistry: CHEM 106*, &110*, &121*, &122*, &123*, &131*, &139, &161*, &162*, &163*, 191*, 192*, 211*, &241, &242, &243, &251*, &252*, 255, 256

Computer Science: CSC 110, 111, 142, 143

Environmental Science: ENV 150, 160, 170, 201, 202*, 203, 204*, 205, 206*, 208, 216*, 221, ENVS &101*

Engineering: ENGR 110, &111, 140, 142, &214, &215, &224, &225, 240, 271

Geography: GEOG 205

Geology: GEOL &101*, &103*, 104, 105*, 106, 108*, &110*, 111*, &115*, 118*, 202*, 207*, &208*

Health: HEA 125, 150, 160 , 225, 228

Math: All MATH college courses number 102 and above.

Meteorology: MEY 100

Material Science: MSC 101

Nanotechnology: NANO 101* Nutrition: NTR 105*, 150, 155

Oceanography: OCEA 100, &101*

Philosophy: PHIL &106, &120

Psychology: PSYC 222

Physics: PHYS &100, 107*, &114*, &115*, &116*, &221*, &222*, &223*

Science: SCI 100, 101*, 104, 107*110*, 111*, 112*, 113*, 114*, 115*, 116*, 117*, 118*, 119*, 121*, 129*, 131*

Sustainability: SUST 101

04/16/2021