BS COMPUTER SCIENCE AP + MS BUSINESS ANALYTICS

Program Overview

AP Coordinator	Aaron Hines, (845) 257-2968, hinesa@newpaltz.edu
Program ID	BS Computer Science 513C, MS Business Analytics 263
Credits	BS Computer Science AP 69 credits (inclusive of 6 graduate credits), MS Business Analytics 30-36
Program Length	The Accelerated Pathway program in Business Analytics program may be completed full-time in nine months. Students needing foundation courses may complete the program within one year; however, the degree must be completed within 7 years.
Modality	BS: In -person, The MS may be completed In-person or Online -- all courses are taught in a Hyflex modality where instruction is simultaneously delivered to students in a seated class as well as online.
Full-time/Part-time	Full-time (15credits/term)
Transfer Credits	6 graduate credits will be applied to both the BS and MS degree programs.

Program Description

This accelerated plan of study provides a pathway to earning a master's degree in business analytics along with a bachelor's degree in computer science. Students enrolled in the BS/MS program complete 6 graduate-level credits in business electives during their senior year. These credits are offered at the reduced undergraduate tuition rate and fulfill both undergraduate and graduate program requirements.

Business Analytics is the science of turning data into meaningful information that a business could use to its competitive advantage. The M.S. in Business Analytics program will develop business professionals proficient at extracting business value from data. The program focuses on the development of core analytics skills and emphasizes the application of analytics in business areas from accounting to marketing and across industries from healthcare to sports.

How does it work?

Get started by declaring the Computer Science AP major (513C) as an undergraduate:

- **Meet** with AP advisor, Aaron Hines, to declare the Computer Science AP major for the MS in Business Analytics.
- **Work** with your AP advisor to select two MS courses to take during your senior year.
- **Apply** for the MS Business Analytics AP program in your senior year.
- **Transfer** 6 credits of MS electives taken as an undergraduate into your graduate program.

MS Admission Requirements

Graduate admission requires submission of:

- Graduate application - select major 263
- One set of official transcripts for all undergraduate and graduate course work, including a baccalaureate transcript from a regionally accredited institution, indicating at least a 3.0 cumulative grade point average.
- Grades of B- or higher in MS courses taken as a senior.
- One letter of recommendation

Admission Deadlines

July 31	Fall Admission
January 1	Spring Admission

Accepting on a rolling basis until the program is full. However, applications must at least be started by the deadline or they will not be considered.

Curriculum Requirements

BS Computer Science AP (major 513C)

Code	Title	Credits
Required Computer Science Courses (40 Credits)		
CPS210	Computer Science I: Foundations	4
CPS310	Computer Science II: Data Structures	4
CPS315	Computer Science III	4
CPS330	Assembly Language and Computer Architecture	4
CPS340	Operating Systems	4
CPS352	Object Oriented Programming	3
CPS353	Software Engineering	3
CPS415	Discrete and Continuous Computer Algorithms	3
CPS425	Language Processing	4
Select a capstone pairing:		7
CPS440 Database Principles + CPS485 Projects		
CPS470 Computer Com Networks + CPS485 Projects		
CPS493 Computer Sci Selected Topic + CPS485 Projects		
Required Mathematics Courses (11 Credits)		
MAT251	Calculus I	4
MAT252	Calculus II	4
MAT320	Discrete Mathematics for Computing	3
Required Science Courses (8 Credits)		
Select a grouping below:		8
CHE201 General Chemistry I & CHE211 General Chemistry I Lab **and** CHE202 General Chemistry II & CHE212 General Chemistry II Lab		
PHY201 General Physics I & PHY211 General Physics I lab **and** PHY202 General Physics II & PHY212 General Physics II Lab		
BIO201 General Biology I & BIO211 General Biology I Lab **and** BIO202 General Biology II & BIO212 General Biology II Lab		
GLG201 Physical Geology & GLG211 Physical Geology Lab **and** plus, one 4-credit Geology course with GLG201 prereq		
Required Engineering Courses (4 Credits)		

EGC220	Digital Logic Fundamentals	3
EGC221	Digital Logic Lab	1
Graduate Business Electives (6 Credits)		
Select two graduate business analytics electives with advisement		6
Total Credits		**69**

MS Business Analytics (major 263)

Code	Title	Credits
Foundation Courses (0 Credits)		**0-6**
BUS509	Statistics Analysis & Decision Theory	
BUS601	Python Programming for Analytics	
Core Courses (21 Credits)		
BUS611	Advanced Statistics for Business Analytics	3
BUS612	Data Wrangling and Visualization	3
BUS615	Data Warehousing and Big Data	3
BUS621	Text Analytics	3
BUS631	Machine Learning	3
BUS632	Data Mining	3
BUS638	Deep Learning	3
Select a Concentration (0 Credits)		**9**
Accounting		
Business Intelligence		
Healthcare		
Total Credits		**30-36**

Accounting Concentration

Code	Title	Credits
Accounting Concentration (9 Credits)		
BUS581	Accounting Information Systems	3
BUS616	Forensic Accounting	3
BUS617	Accounting Data Analytics	3
Total Credits		**9**

Business Intelligence Concentration

Code	Title	Credits
Business Intelligence Concentration (9 Credits)		
Choose three from:		9
BUS618	Spreadsheet for Business Analytics	
BUS622	Sport Analytics	
BUS626	Advanced Healthcare Analytics	
BUS641	Social Network and Web Analytics	
BUS642	Time Series and Forecasting	
BUS643	Customer Analytics	
BUS648	Natural Language Processing	
Total Credits		**9**

Healthcare Concentration

Code	Title	Credits
Healthcare Concentration (9 Credits)		
BUS626	Advanced Healthcare Analytics	3
Choose two from:		6
BUS544	Health Care Finance	
BUS561	Healthcare Policy	
BUS562	Healthcare Management and Leadership	
Total Credits		**9**

Academic Standing Requirements for Accelerated Pathway Students

A cumulative GPA of less than 3.0 in graduate-level courses taken in the undergraduate portion of an accelerated pathway program precludes the student's good standing. Students with a cumulative GPA between 2.75 to 2.99 are strongly advised to reconsider continuing into the graduate program.

Graduation Checklist

- Apply for graduation viamy.newpaltz.edu#under "Graduation" tab according to the schedule in theacademic calendar.
- Resolve any pending admission conditions (outlined in your acceptance letter) and/or missing documents if applicable.
- Review your progress report via my.newpaltz.edu to ensure that you have completed all program requirements.
- Remember that only two grades below a B- may be applied to yourplan of study
- Contact your advisor if you need to amend your plan#or processtransfer credit.
- Ensure that you are ingood academic standing#with a#GPA (Grade Point Average)#of 3.0 or higher.
- Pass your capstone or culminating assessment.
- Complete your degree within thespecified time limit#outlined in the Program Overview.

BS Computer Science Program Learning Outcomes

Graduates of the BS in Computer Science will be able to:

- Develop skill in programming in several high-level languages, assembly language, machine language, and microcode.
- Develop the ability to learn new programming languages without formal instruction.
- Design and analyze algorithms.
- Design a new programming language and write a compiler or interpreter for it.
- Apply object-oriented programming and software engineering principles.

- Design and implement digital circuits.
- Understand the structure and operation of a modern operating system.
- Understand theoretical computer science concepts, such as the Turing machines and automata and computability theory.
- Understand the fundamentals of at least one of these laboratory sciences: physics, chemistry, biology, or geology.
- Understand continuous and discrete mathematical structures relevant to computing.

MS Business Analytics Program Learning Outcomes

Graduates of the MS in Business Analytics will be able to:

- Understand the#different forms of analytics#and develop a sound understanding of the methods used in each.
- Develop#hands#on experience with analytical tools#and software that are widely used in practice#including emphasis on Python, SQL, no-SQL,#Tableau, and other current and trending technologies.
- Apply analytics in different business domains to enhance decision making.
- Understand the#dynamics of leading#andparticipating#in successful analytics teams and#projects.