

# BS COMPUTER SCIENCE AP + MS BUSINESS ANALYTICS

## Program Overview

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<b>Program ID</b>	BS Computer Science 513C, MS Business Analytics 263
<b>Credits</b>	BS Computer Science AP 69 credits (inclusive of 6 graduate credits), MS Business Analytics 30-36
<b>Program Length</b>	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.
<b>Modality</b>	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.
<b>Full-time/Part-time</b>	Full-time (15credits/term)
<b>Transfer Credits</b>	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

Fall Admission	<b>July 31</b>
Spring Admission	<b>January 1</b>

Applications are reviewed on a rolling basis until the program's cohort is filled or until the deadline stated above. Applications submitted after the posted deadline will not be considered. Applying early ensures an easier registration process. Applicants who are admitted later in the admission cycle may find that classes that they wish to enroll in are already full.

## Curriculum Requirements

### BS Computer Science AP (major 513C)

Code	Title	Credits
<b>Required Computer Science Courses (69 Credits)</b>		
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
<b>Select a capstone pairing:</b>		7
CPS440 Database Principles + CPS485 Projects		
CPS470 Computer Com Networks + CPS485 Projects		
CPS493 Computer Sci Selected Topic + CPS485 Projects		
<b>Required Mathematics Courses</b>		11
MAT251	Calculus I	
MAT252	Calculus II	
MAT320	Discrete Mathematics for Computing	
<b>Required Science Courses - select a grouping below:</b>		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		
<b>Required Engineering Courses</b>		4
EGC220	Digital Logic Fundamentals	

EGC221	Digital Logic Lab	
<b>Graduate Business Electives</b>		<b>6</b>
Select two graduate business analytics electives with advisement		
<b>Total Credits</b>		<b>69</b>

## MS Business Analytics (263)

Any graduate course taken as part of the BS Computer Science AP program will transfer into the MS Business Analytics plan of study

Code	Title	Credits
<b>Foundation Courses (0-6 credits) (0 Credits)</b>		<b>0-6</b>
0-6 credits depending upon prior coursework		
BUS509	Statistics Analysis & Decision Theory	
BUS601	Python Programming for Analytics	
<b>Core Courses (0 Credits)</b>		<b>21</b>
BUS611	Advanced Statistics for Business Analytics	
BUS612	Data Wrangling and Visualization	
BUS615	Data Warehousing and Big Data	
BUS621	Text Analytics	
BUS631	Machine Learning	
BUS632	Data Mining	
BUS638	Deep Learning	
<b>Select a Concentration: (0 Credits)</b>		<b>9</b>
Course lists for each concentration area are below.		
Accounting		
Business Intelligence		
Healthcare		
<b>Total Credits</b>		<b>30-36</b>

## Accounting Concentration (263A)

Code	Title	Credits
<b>Accounting Concentration (9 Credits)</b>		
BUS581	Accounting Information Systems	3
BUS616	Forensic Accounting	3
BUS617	Accounting Data Analytics	3
<b>Total Credits</b>		<b>9</b>

## Business Intelligence Concentration (263B)

Code	Title	Credits
<b>Business Intelligence Concentration (9 Credits)</b>		
Choose three from:		<b>9</b>
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	
<b>Total Credits</b>		<b>9</b>

## Healthcare Concentration (263H)

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

## 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. Students with a cumulative GPA below 2.75 may not continue and will be de-matriculated from GR program.

## Graduation Checklist

- Apply for graduation [viamy.newpaltz.edu#under "Graduation" tab](http://viamy.newpaltz.edu#under%20%22Graduation%22%20tab) according to the schedule in the academic 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](http://my.newpaltz.edu) to ensure that you have completed all program requirements.
- Remember that only two grades below a B- may be applied to your plan of study
- Contact your advisor if you need to amend your plan#or processtransfer credit.
- Ensure that you are in good academic standing#with a#GPA (Grade Point Average)#of 3.0 or higher.
- Pass your capstone or culminating assessment.
- Complete your degree within the specified 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 and participating in successful analytics teams and projects.