BS BUSINESS ANALYTICS AP + MS COMPUTER SCIENCE

Program Overview

AP Coordinator	Kaitlin Hoffmann, 845-257-3533, hoffmank4@newpaltz.edu
Program ID	BS Business Analytics AP (531C) MS Computer Science (270)
Credits	BS Business Analytics (70 credits inclusive of 6 GR Computer Science coursework) MS Computer Science (30 credits)
Program Length	The Accelerated Pathway program in Computer Science may be completed in 10 semesters, but students must complete the graduate degree within 7 years.
Modality	In-person
Full-time/Part-time	Full-time or Part-time
Transfer Credits	6 graduate credits will be applied to both the BS and MS degree programs.
Graduate Capstone	Comprehensive Exam or Thesis

Program Description

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

The master's degree in computer science is designed to help students from all backgrounds advance to new careers in technology fields. Our mission is to prepare the next generation of application developers, start-up entrepreneurs, and business analysts to thrive in a rapidly changing world. The program focuses on building a strong foundation in the theoretical concepts of computer science, while introducing applicable skills in areas like machine learning, web and database development, cybersecurity, and data science.#Courses are taught by dedicated faculty who are experts in their fields with active research programs. Our network and security lab provides advanced computing facilities. The curriculum is constantly evolving in step with current trends in technology, emphasizing the skills that employers – especially in the Hudson Valley's growing tech industries – need right now.

How does it work?

Get started by declaring the Business Analytics AP major (531C) as an undergraduate:

- **Meet**with AP advisor,Kaitlin Hoffmann, to declare the Business Analytics AP major.
- **Work**with your AP advisor to enroll in two graduate computer science courses during your senior year.
- **Apply**for the MS Computer Science program in your senior year.
- **Transfer**#6 credits of graduate electives taken as an undergraduate into your graduate program.

Graduate Admission Requirements

Graduate admission requires submission of:

- Graduate application - select major 270.
- 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 graduate computer science courses taken as a senior.

Admission Deadlines

Fall Admission	**July 31**
Spring Admission	**January 1**

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 wo are admitted later in the admission cycle may find that classes that they wish to enroll in are already full.

Curriculum Requirements

BS Business Analytics AP (major 531C)

Code	Title	Credits
Business Core Curriculum (0 Credits)		**40**
Required Business Analytics Courses (15 Credits)		
BUS216	Data Wrangling with R	3
BUS347	Introduction to Business Analytics	3
BUS348	Decision Modeling and Analysis	3
BUS349	Data Management and Big Data	3
BUS381 & BUS461	Advanced Business Analytics and Business Analytics Capstone [1]	6
Electives (9 Credits)		
Select 3 of the following upper division electives:		9
BUS385	Supply Chain Analytics	
BUS386	Marketing Analytics	
BUS387	Analytics in Health Care	
BUS389	Times Series Analysis for Business	
BUS390	Business Intelligence and Analytics	
BUS391	Data Visualization	
BUS419	Seminar in Analytics	
BUS425	Marketing Research	
BUS452	Digital Marketing Analytics	
BUS459	Intro to Risk Management and Derivatives	

Graduate Electives (6 Credits)		
CPS551	Programming and Data Structures	3
Select a graduate computer science elective with advisement		3
Total Credits		**70**

[1] BUS461 Business Analytics Capstone fulfills the Applied Learning requirement within the Business Core Curriculum.

MS Computer Science (major 270)

Graduate study in Computer Science enables students to individualize their program of study by pursuing ten computer science courses (30 credits) and passing a comprehensive exam or completing eight courses (24 credits) and delving into a 6-credit thesis project. This flexibility allows students to explore conceptually based classes, enhance technical skills through applied learning courses, stay abreast of current trends in the field through a wide range of special topics courses, and engage in research by pursuing an optional six-credit thesis.

Sample comprehensive exam option

Code	Title	Credits
Transfer Credits (6 Credits)		
Graduate courses taken as an undergraduate.		6
Individualized Comprehensive Exam Track: (24 Credits)		
Select 8 courses by advisement		24
CPS502	Discrete Structures	
CPS526	Advanced Data Structures	
CPS530	Computer Networks	
CPS534	Foundations of Computer Science	
CPS536	Machine Learning	
CPS540	Artificial Intelligence	
CPS551	Programming and Data Structures	
CPS553	Web and Database Programming	
CPS554	User Interface Programming	
CPS580	Functional Programming	
CPS593	Computer Science Selected topic *	
CPS594	Fieldwork Comp Science	
Comprehensive Exam		
Total Credits		**30**

New recently offered special topics courses include Cybersecurity and Database Management.

Sample thesis option

Code	Title	Credits
Transfer Credit (6 Credits)		
Graduate courses taken as an undergraduate.		6
Individualized Thesis Track (24 Credits)		
Students select six graduate courses by advisement and complete a 6-credit thesis.		18
CPS502	Discrete Structures	
CPS526	Advanced Data Structures	
CPS530	Computer Networks	
CPS534	Foundations of Computer Science	
CPS536	Machine Learning	
CPS540	Artificial Intelligence	
CPS551	Programming and Data Structures	
CPS553	Web and Database Programming	
CPS554	User Interface Programming	
CPS580	Functional Programming	
CPS593	Computer Science Selected topic *	
CPS594	Fieldwork Comp Science	
CPS590	Thesis in Computer Science	6
Total Credits		**30**

* Recently offered special topics courses include Cybersecurity and Database Management.

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 via my.newpaltz.edu#under "Graduation" tab 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 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 Business Analytics Program Learning Outcomes

Candidates who successfully complete all required components of the BS in Business Analytics at SUNY New Paltz will:

ASSURANCE OF LEARNING

The School of Business has maintained a tradition of an active and rigorous Assurance of Learning (AoL) process since our initial AACSB accreditation in 2013.

At the undergraduate level, the five undergraduate program goals—critical thinking, oral communication, written communication, teamwork, and ethics—subsume the skill set that we believe undergraduates should possess after completing their studies. Undergraduate learning goals and corresponding learning objectives are:

Goal 1: Critical Thinking
1.1 Identify issues or relevant data.
1.2 Apply appropriate principles or formulas.
1.3 Interpret evidence or analyze data.
1.4 Formulate well-supported conclusions or solutions.
1.5 Draw implications from the resulting conclusions or solutions.

Goal 2: Oral Communication
2.1 Organization: Present information in a logical sequence.
2.2 Content: Fulfill assignment using appropriate sources and analysis.
2.3 Subject Knowledge: Demonstrate knowledge of subject matter being presented.
2.4 Ability to answer questions: Address questions with relevant, correct information.
2.5 Quality of slides: Present slides that are legible and professional in appearance.
2.6 Voice quality and pace: Delivery is clear with appropriate volume.
2.7 Pace of delivery: Pace is appropriate.
2.8 Mannerisms: Demonstrates no distracting mannerisms.
2.9 Eye contact: Maintains effective eye contact.
2.10 Attire: Demonstrates appropriate business attire.

Goal 3: Written Communication
3.1 Document organization: Present materials in a logical manner; make the purpose of the writing clear to the reader.
3.2 Paragraph coherence: Develop focused paragraphs; provide transitions between paragraphs.
3.3 Sentence structure and vocabulary: Structure sentences correctly with no vocabulary errors present.
3.4 Mechanics & usage: Adhere to standard rules of grammar and usage; cite outside materials as needed.
3.5 Critical thinking: Develop well-reasoned arguments; support arguments with facts and evidence drawn from appropriate sources; analyze effectively.
3.6 Content: Present content to meet the requirements of the assignment; demonstrate accurate subject knowledge; reflect understanding of the material.
3.7 Tone & format: Use tone and perspective consistent with the requirements of the assignment; choose words appropriate for the audience; format the assignment to meet the specified guidelines.

Goal 4: Teamwork
4.1 Contribute ideas/suggestions.
4.2 Contribute research and/or data.
4.3 Develop key parts of deliverables.
4.4 Follow through on tasks.
4.5 Reliable in doing work.
4.6 Attend group meetings.
4.7 Plan activities.
4.8 Assume leadership role.
4.9 Participate in group discussions.
4.10 Contribute time.
4.11 Offer constructive criticism/suggestions.
4.12 Willing to consider alternative viewpoints.
4.13 Work to resolve differences among group.
4.14 Work to establish consensus among group.
4.15 Show respect for others.

Goal 5: Ethics
5.1 Identify ethical issues or dilemmas.
5.1 Identify stakeholders and their conflicting values in the decision.
5.1 Analyze alternatives and consequences.
5.1 Select a course of action.

Goal 6: Information Management
6.1 Perform the basic operations of personal computer use.
6.1 Determine and access the information needed.
6.1 Access and use information ethically and/or legally.
6.1 Evaluate information and its sources critically.
6.1 Use information effectively to accomplish a specific purpose.

MS Computer Science Program Learning Outcomes

Candidates who successfully complete all required components of the MS in Computer Science program at SUNY New Paltz will:

- Developskill#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 continuous and discrete mathematical structures relevant to computing.