By the grace of G-D

CPS104-01- VISUAL PROGRAMMING – FALL 2025

Course Details

Credit Hours: 3

Class Days, Time, Location:
Monday 5:00pm-7:45pm
Location: HUM 318

Course Modality:
Fully Seated. We will meet a total of 13 times in class for 2 ¾ hours each time. In addition, students are expected to spend an additional 6 hours a week on assigned readings, research, papers, and/or field trips and in-person experiences.

Student Absence Policy:
Participation is a required part of this course. Students are allowed two unexcused absences before it starts to affect their grade. Students absent from class for any reason are expected to complete all assigned work in the course and should consult the professor about make-up policy. Some examples of excused absences can be found at **Religious Beliefs & Class Attendance &** **Black Solidarity Day**

Maintaining Public Health on Campus and in the Classroom (Spring 2024)
For students testing positive for COVID:
Per current guidance from the CDC and the New York State Department of Health (DOH), those who have COVID must isolate for five days after becoming symptomatic or testing positive and must wear a well-fitted mask on days 6-10. Students must report positive cases to the Student Health Center (845-257-3400 or **healthservice@newpaltz.edu**) as soon as possible. Notices of positive cases reported to the Student Health Center will continue to be sent to the student's in-person faculty to validate excused absences.

For students exposed to COVID:
Current CDC and New York State DOH guidelines require that those who are not "up to date" with vaccinations (including having a booster when eligible) and who are exposed to COVID through a close contact must quarantine for five days after exposure. If documentation is required, see **Affirmation of Quarantine**.

Basic Needs
To learn effectively you must have basic security: a roof over your head, a safe place to sleep, enough food to eat. The **Division of Student Affairs** has compiled a broad range of resources, including a **list of campus services, local agencies, and support networks**, that can assist students with managing their basic needs. Please consult these resources or **contact the Division of Student Affairs** should you need additional information. **Or feel free to ask me for help.**

Instructor Details

Name and Title: Rabbi Moshe Plotkin

Campus Email: plotkinm@newpaltz.edu

Office Phone: (845) 257-3992

Office Location: Science Hall (grey building corner of campus) #239

Office Hours: Mondays 3:20-4:30

Course Description

Introduces students to the world of no-code and low-code programming through the visual automation & AI platform n8n. Designed for non-programmers, it explores the logic, structure, and creativity behind building automated workflows and Artificial Intelligence Agents without writing traditional code. Students will learn to connect apps, manipulate data, and build practical tools for personal, academic, and professional use.

Student Learning Outcomes

Upon completion of this course, students will be able to:

- Understand core programming concepts such as variables, loops, conditionals, and APIs through visual interfaces
- Build and deploy automated workflows using n8n
- Integrate popular services (e.g., Google Sheets, Telegram, Email, Webhooks) into functional systems
- Connect workflows to AI services (e.g., OpenAI, Ollama) for intelligent automation
- Design and implement autonomous AI agents using visual tools, capable of making decisions and performing tasks without human intervention
- Critically evaluate the ethical, social, and economic implications of autonomous systems and their growing role in daily life
- Debug and optimize workflows for reliability and scalability
- Reflect on the broader implications of automation and low-code tools in modern work and life

Reading Materials

Instead of printed books, this class will rely on online source materials.
https://docs.n8n.io/ should be treated as you would a text book for a classical course. You should make time every week to read sections of the site and practice implementing what you read. You will find yourself referring back to the official documentation often as you work hard to create new automations and agents.

Grading information

Participation & Attendance	*15%*
Weekly Workflow Challenges	*25%*
Midterm Project	*20%*
Final Project	*30%*
In-Class Final Challenge	*10%*

Grade Scale (by percentage)

A	100.00 – 93.00	A-	92.9 – 90.00
B+	89.9 – 87.10	B	87.00 – 83.00
B-	82.9 – 80.00	C+	79.9 – 77.10
C	77.00 – 73.00	C-	72.9 – 70.00
D+	69.9 – 67.10	D	67.00 – 60.00
F	Below 60		

Last Day to Withdraw without Grade Penalty

Friday November 14.

Campus Policies

Please be aware of the most **current Campus Policies** applicable to issues such as Academic Integrity, Computer/Network Use, Identity Verification, Accommodation of Individuals with Disabilities, Title IX, and Veteran & Military Services.

Student Evaluation of Instruction (SEI)

You are responsible for completing the Student Evaluation of Instruction (SEI) for this course and for all your courses with an enrollment of five (5) or more students. I value your feedback and use it to improve my teaching and planning. Please complete the online form during the appropriate period.

Examples of Topics Covered and Course Schedule

N8n and the world of computer automation and Artificial Intelligence Agents are progressing and growing so rapidly that the topics covered in this class are very likely to change a number of times before the semester is over. Here is a list of topics that are helpful when creating Automations and AI Agents together with a possible timeline of when we may cover these topics. However, in the end, it will all depend on what technology is invented this year and which concepts you cohort finds most difficult to comprehend and use. This list will remain fluid.

Week	Theme	Topics & Tools	Assignment
1	Introduction	What is Visual Programming? Overview of n8n	Create n8n account & intro workflow
2	Nodes & Triggers	Webhooks, Cron, Manual triggers	Build a daily quote sender
3	Data Flow	JSON, variables, Set & Merge nodes	Create a form-to-email pipeline
4	External Services	Google Sheets, Telegram, Email	Build a weather alert bot
5	Logic & Control	IF, Switch, Looping	Create a conditional reminder system
6	APIs & HTTP	HTTP Request, Authentication	Pull data from a public API
7	Error Handling	Try/Catch, Notifications	Build a resilient workflow
8	Midterm Week	Project Presentations	Midterm Project Due
9	User Interfaces	Forms, Webhooks, UI nodes	Build a feedback collector
10	Data Storage	Google Sheets, Notion, Databases	Create a habit tracker
11	Collaboration	GitHub, Sharing Workflows	Share and critique peer workflows
12	AI Integrations	OpenAI, Hugging Face, AI nodes	Build a sentiment analyzer or summarizer
13	Optimization	Performance, Scaling	Refactor and improve workflows
14	Final Project	Workshopping & Debugging	Final Project Due
15	Final Challenge	In-Class Workflow Build	Surprise Task