

ENR145 Computational Methods: “Hamming Sheets” recap and “Hamming Python” 101

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Hamming Sheets

- Hope everyone learned something new with either Hamming or spreadsheet.
- I will strive to make my instruction more clear. **Reading comprehension is NOT the learning objectives in this class.**
- I learned something new from you guys as well.

Examples of hamming sheets done by the students:

0						
1						
1						
1						
0						
0						
1						
0						
1						
0						
0						
0						

Table1						
Column 1	P0	P1	P2	Column 2		
	0	0	1	0		
P3	0	1	1	1		
P4	0	0	0	0	1	
	0	1	0	0		

Hamming Code									
Data Here		Hamming Code Matrix				Calculate Parity Bits			
0						P1	P2	P3	P4
1						TRUE	TRUE	FALSE	FALSE
1									
0									
0									
1									
1									
1									
0									
0									

Convert True/False to Binary				
1	1	0	0	0

Revisit Error Checking in Hamming Sheets

Hamming Code Matrix			
0	1	1	0
0	1	1	0
0	0	1	1
1	1	0	0

Hamming Code Matrix Recieved			
0	1	1	0
0	1	1	0
0	0	1	1
1	1	0	0

Error Code				
0	0	0	0	0

No bit flipped

Hamming Code Matrix Recieved			
0	1	1	0
0	1	1	0
0	0	1	1
1	0	0	0

Error Code				
1	1	0	1	1

1 bit flipped

Hamming Code Matrix Recieved			
0	1	1	0
0	1	1	0
0	0	1	1
1	0	1	0

Error Code				
0	0	1	1	0

2 bits flipped



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Before we move into the land of “Hamming Python”, here’s the deal:

When in class:

[]

Start coding **NOT** and generate with AI.

NOT

Toggle Gemini



in



colab.research.google.com/

When off class:

Coach me how to do Hamming (16,11) in Python, step by step



Guided Learning




Fast



Gemini can make mistakes, so double-check it

COLLEGE

Let's go, hamming python 101

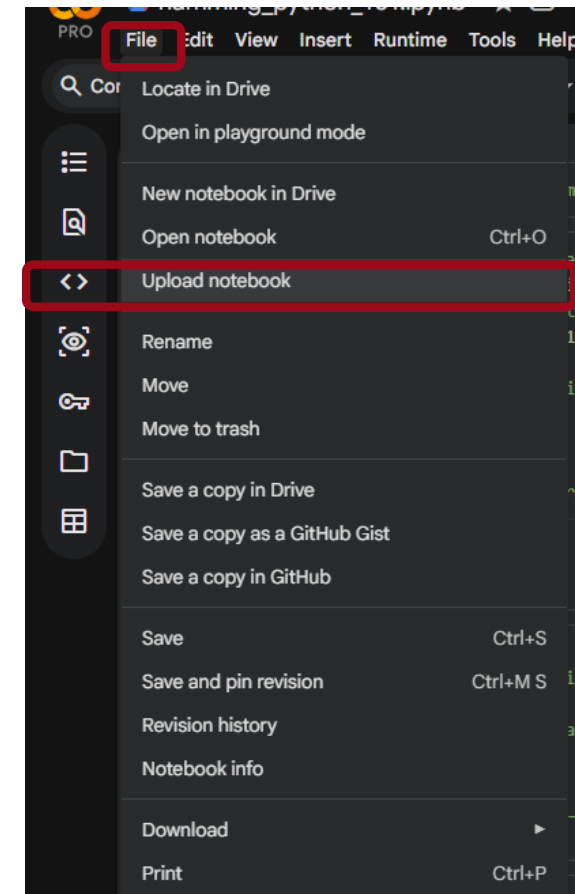
**ENR 145: Computational Methods for Physicists and Engineers**
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[Download Syllabus](#) [Upload to Moodle](#)

▼ **Module 1: Codes, Visuals, and Algos (4 weeks)**

Week 2: [Google Sheets helper file](#)

[Hamming python 101\(right click and "save link as" to download\)](#)



What if I already KNEW how to do this?

- You are free to go.
- To get extra class token:
 1. Work out the codes in a Python IDE (VS Code, PyCharm, etc... up to 1 token)
 2. Work out the codes in a new language (C, C++, Rust, html, etc... no token cap)
- Starting Python session in 3, 2, 1...