

# **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:

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

Hamming Code					
Data Here					
0					
1					
1					
0					
0					
1					
0					
0					
1					
1					
0					
0					

Calculate Parity Bits				
P1	P2	P3	P4	P0
TRUE	TRUE	FALSE	FALSE	FALSE
Convert True/False to Binary				
1	1	0	0	0



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# 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 Received			
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 Received			
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 Received			
0	1	1	0
0	1	1	0
0	0	1	1
1	0	1	0

Error Code				
0	0	1	1	0

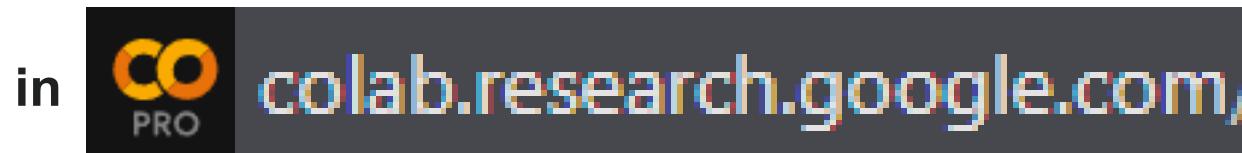
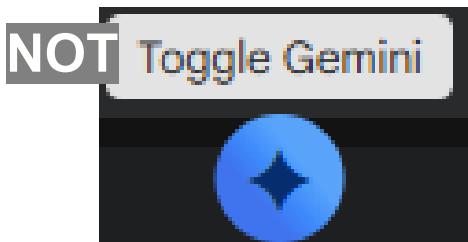
2 bits flipped



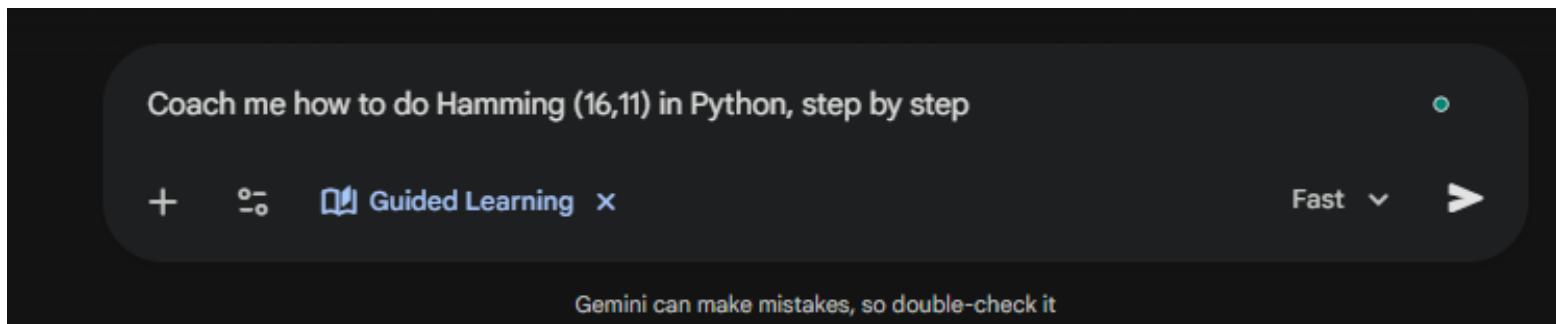
# Before we move into the land of “Hamming Python”, here’s the deal:

When in class:

[ ]  
Start coding **NOT** and generate with AI.  
  ^



When off class:



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# Let's go, hamming python 101

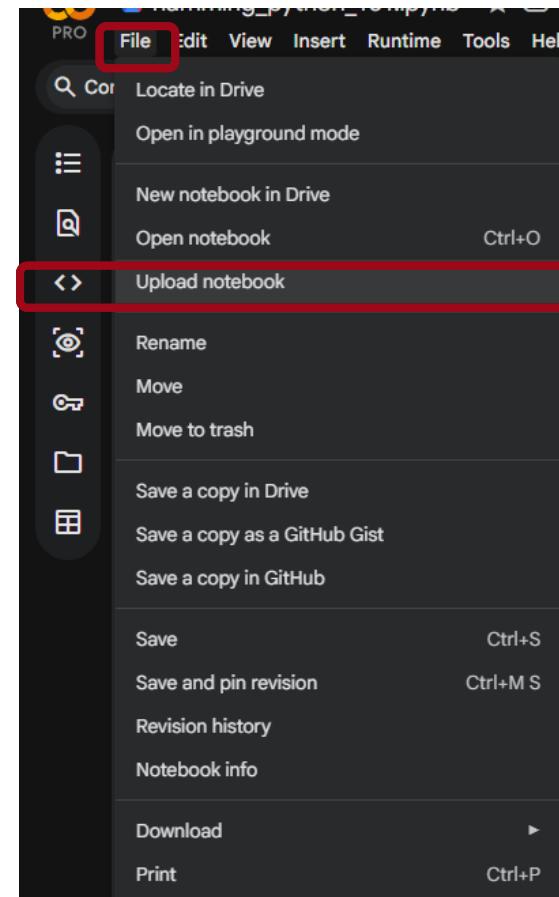
ENR 145: Computational Methods for Physicists and Engineers  
Department of Engineering Physics, Coe College | Cedar Rapids, Iowa

[Download Syllabus](#) [Upload to Moodle](#)

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

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

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



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# 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...



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