Ling 3801: Codes and Code Breaking. Spring 2016, Tu/Th 2:20-3:35, Smith 1048.
Italics indicate additional details available on Carmen.

Course materials are:

1) Simon Singh, The Code Book: The Science of Secrecy from Ancient Egypt to Quantum Cryptography ("TCB"). 1999 edition: ISBN-13 9780385495318 or ISBN-10 0385495323. 2000 edition: ISBN-13 9780385495325. Either edition is fine. *First chapter scanned.*

2) A Nerf or similar dart gun, any size, any kind.

3) Army Field Manual 34-40-2 ("AFM"). Freely available online. *Link.*

Tiny directory:

Instructor:XXX

My boss: Dr. Hope Dawson. dawson.165@osu.edu. 109c Stadium East. *Directions.*

Student Advocacy: A hub for help when difficulties or crises disrupt your life as a student. 614-292-1111. advocacy@osu.edu. 1120 Lincoln Tower.

Counseling: Confidential, expert help with mental/emotional distress. Self-help on ccs.osu.edu. 614-292-5766. sl-ccs@osu.edu on business days. 4th floor, Younkin Success Center.

Disabilities: Please contact me before the end of week 3 about any accommodations. We will work with the Office of Disability Services. 614-292-3307. VRS 614-429-1334. slds@osu.edu. 150 Pomerene Hall.

Honesty: Don't cheat. Don't even seem to cheat, because I am required to report that. Ugh, the paperwork. Know and follow the Code of Student Conduct: studentaffairs.osu.edu/csc

Quizzes check that you're keeping up with reading in The Code Book. They are 10% of your grade. To allow for ordinary emergencies, I drop your lowest quiz score and we don't mess around with do-overs.

Homework is 30% of your grade. The most important part of any code-breaking assignment is to write up your methods. Actually uncovering the plaintext is nice, but showing me you know a reasonable approach to the problem is essential. You may work with classmates, but write it up yourself and say who you worked with. Submit homework via Carmen dropbox fifteen minutes before class.

The **midterm** is worth 25% of your grade. The best way of preparing for it is to do your homework and to actively engage with lecture material by asking questions and looking for implications.

The **final project**'s topic is above your current clearance, but it is scheduled as shown below. Plan to work intensely and to write up each week's outcomes. It is worth 25% of your grade.

If you expect a **schedule conflict** with the exam or the project, please contact me before the end of week 3.

You will need to give a few minutes' **presentation**, with one or two partners, on a recent security breach or problem. It is worth 5% of your grade.

Participation and citizenship in our class discussion are the last 5%. **Letter grades** use the standard scale.

This course is full of **secrets.** Enjoy yourself as you look for them.

The following **schedule** is our baseline. I may adjust it if circumstances require.

Week	Date	Due Before Class	Lecture	Start Reading
1	Tu 1/12		Intro to course, intro to ciphers	TCB 1
	Th 1/14		Monoalphabetic	AFM 1, 2
2	Tu 1/19	Quiz 1: TCB 1 (Mary's)	Monoalphabetic cont'd	AFM 3, 4
	Th 1/21	HW 1: Shift	Steganography	TCB 2
3	Tu 1/26	HW 2: Monoalphabetic	Polyalphabetic: Vigenere	
	Th 1/28	Quiz 2: TCB 2 (Chiffre)	Polyalphabetic cont'd	TCB **5, not 3!**
4	Tu 2/2	HW 3: Vigenere	Writing systems: ꬃꓝ𝍦ꔶ𑀆ꢝ𝼂ꗏꉩꝿꓸꞎ	
	Th 2/4	Quiz 3: TCB **5 (Lang)**	Decoding ancient languages	AFM 5
5	Tu 2/9	HW 4a: Strange writing	Ancient languages cont'd	
	Th 2/11		Polygraphic: Playfair	**AFM 6, 7 on Playfair**
6	Tu 2/16	HW 4b: Strange reading	Polygraphic cont'd	
	Th 2/18		Transposition	TCB 3
7	Tu 2/23	HW 5: Playfair	Transposition cont'd	AFM 11, 12, 13
	Th 2/25	Quiz 4: TCB 3 (Mech)	Review for exam	
8	Tu 3/1	HW 6: Transposition	Cipher shootout	
	Th 3/3		**F.A.K.E. Security Clearance Exam**	
9	Tu 3/8	Bring your Nerf gun	Spy school: Field skills	TCB 4
	Th 3/10		Final project briefing	Briefing materials
10	Tu 3/15		**Spring break! Have fun!**	
	Th 3/17		**Go somewhere warm maybe!**	
11	Tu 3/22		Brand X cipher	
	Th 3/29	Quiz 5: TCB 4 (Enigma)	Computer security	TCB 6 pp 243-67
12	Tu 4/5	Status report	Computer security cont'd	
	Th 4/7	Quiz 6: TCB 6 pp 243-67	Modern crypto fundamentals	TCB 6 pp 268-92
13	Tu 4/12	Status report	Modern crypto applications	
	Th 4/14	Quiz 7: TCB 6 pp 268-92	Presentation prep	
14	Tu 4/19	Status report	Security breach presentations	
	Th 4/21		Security breach presentations cont'd	