# Lakehead University Corporate Identity, 955 Oliver Raod, Thunder Bay, ON, P7B 5E1, lakeheadu.ca

**Department of Computer Science**

**COMP4476\_2024 WOA Course Portfolio**

**Instructor: Ruizhong Wei**

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**Course Description:**

This year the course will cover basic knowledge, technology and theory of cryptography and network security. Topics of cryptography include conventional encryption, public-key cryptology, message authentications and digital signatures. Then some important topic of network security will be investigated including key distributions, email security, IP

security, web security, etc. Several useful network security protocols and algorithms will also be discussed.

**Learning Outcomes:**

1. Describe main encryption decryption algorithms.
2. Analysis signature and message authentication techniques.
3. Describe some of the threat models of network security.
4. Describe specific network-based countermeasures.
5. Analyze various aspects of network security from a case study.

**Course Contents:**

1. Conventional cryptography
2. Modern block ciphers
3. Public key encryption
4. Information authentication
5. Remote access control
6. E-mail security
7. Web security
8. IP Secure
9. Firewall
10. Block chains

**Text Book (s):**

1. R.Wei, Introduction to network security, Lecture notes.
2. W. Stallings, Network and internetwork security, Prentice Hall.
3. D.R. Stinson, Cryptography: Theory and practice, CRC Press.

**Marking Scheme:**

To determine the final grade of the course, the following weights will be

applied:

* Assignments: 35 \%
* Quizzes: 30 \%
* Final exam: 35 \%

**Relevant ACM/IEEE Body Knowledge:**

Security (SEC)

Networking and Communication(NC)

**Similar Courses in Ontario (O), Canada (CA) and USA (US):**

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| Course Number and Title | University ( O,CA, US) | Link |
| CS 458 Computer security and privacy | University of Waterloo | <https://cs.uwaterloo.ca/current/courses/>  course\_descriptions/ |
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**Student Feedback on Teaching COMPXXXX Term\_Year**

From your annual report based on the institutional student satisfaction survey:

https://www.lakeheadu.ca/sites/default/files/uploads/66/SFT%202015-16%20Results%20Update.pdf

Or from Open Testimonies or both.