课程大纲
COURSE SYLLABUS

1.	**课程代码/名称** **Course Code/Title**	**CSE5005/Advanced Computer Networks**
2.	**课程性质** **Compulsory/Elective**	Compulsory
3.	**课程学分/学时** **Course Credit/Hours**	3/64
4.	**授课语言** **Teaching Language**	English
5.	**授课教师** **Instructor(s)**	危学涛
6.	**是否面向本科生开放** **Open to undergraduates or not**	No
7.	**先修要求** **Pre-requisites**	（如面向本科生开放，请注明区分内容。 If the course is open to undergraduates, please indicate the difference.）

8. **教学目标**
Course Objectives

This course will introduce current and emerging topics of computer networks. Topics include, but not limited to, protocols, routing, performance, P2P networks, software-defined networking, data center networking, multipath TCP, blockchain and QUIC.

Upon the completion of this course, students should be able to:

1. Present essential principles of various advanced topics in computer networks;
2. Gain a deeper understanding of challenging problems in computer networks;
3. Developing programs to demonstrate the working of computer network protocols and algorithms.

9. **教学方法**
Teaching Methods

This course consists of lectures and labs.

10. **教学内容**
Course Contents

Section 1	Introduction of Computer Networks
Section 2	Internet Fundamentals
Section 3	Advanced Routing
Section 4	Advanced Transport Protocols
Section 5	Performance Issues
Section 6	Packet Processing
Section 7	Software Defined Networking
Section 8	P2P Networks
Section 9	Data Center Networking
Section 10，11	Blockchain

	Section 12，13	Multipath TCP
	Section 14，15	QUIC
	Section 16	Summary and Review

11. 课程考核
Course Assessment

（①考核形式 Form of examination；②.分数构成 grading policy；③如面向本科生开放，请注明区分内容。If the course is open to undergraduates, please indicate the difference.）

Examination (45%) + Assignments (35%) + Attendance (20%)

12. 教材及其它参考资料
Textbook and Supplementary Readings

1. J. Kurose, K. Ross, Computer Networking (计算机网络)：A Top-Down Approach (自顶向下方法), Pearson Addison Wesley 机械工业出版社
2. 谢希仁，计算机网络，中信工业出版社