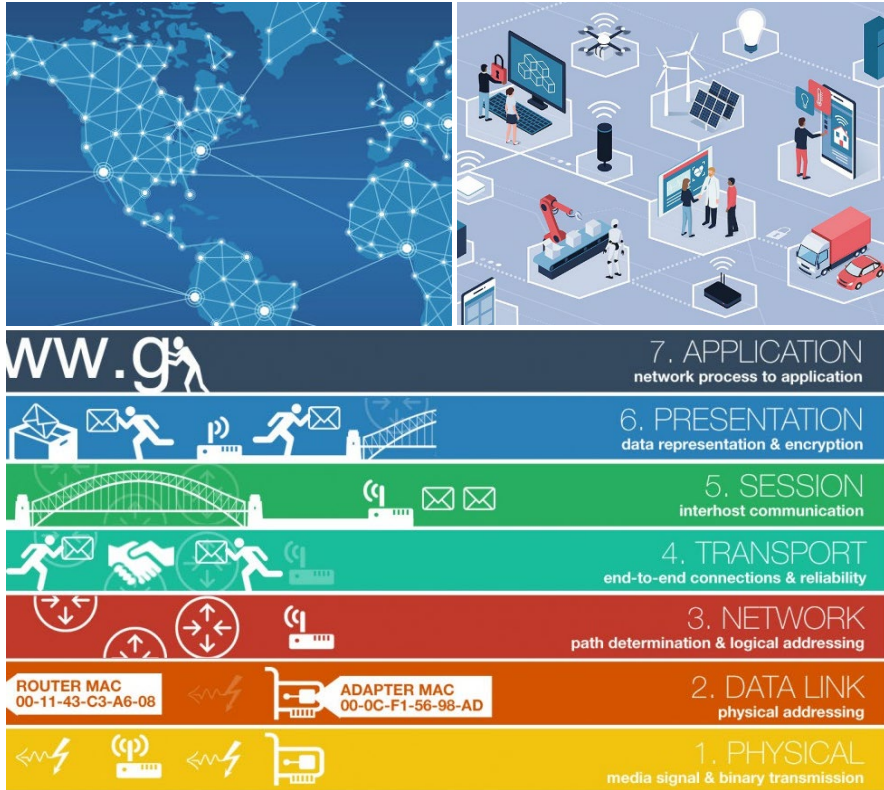# OPUS
College of Engineering
MARQUETTE UNIVERSITY

COEN 4690/EECE 5690 Spring 2022
Developments in Computer Software:
Computer Networks

COURSE CONTENT

📖 **Internet Architecture**

📖 **Protocols (e.g., TCP/IP)**

📖 **IP Addressing**

📖 **Routing Algorithms**

📖 **Reliable Data Transfer**

📖 **Medium Access Control**

📖 **Congestion/Flow Control**

📖 **Error Detection**

PROJECT INFORMATION

💡 **Optional Formats:**

- ⤷ **Research (Survey) on Emerging Techniques**
- ⤷ **Simulation**
- ⤷ **Implementation**
- ⤷ **Analysis**

💡 **Example Topics:**

- ⤷ **Software-Define Networking**
- ⤷ **Information-Centric Networking**
- ⤷ **Internet of Things (Smart City, Industrial IoT, Internet of Vehicles, etc.)**
- ⤷ **AI for Networking**

Or Propose Your Own Topic

⁂ From Wi-Fi networks to the Internet of Things, networks have been playing a significant role in the modern world and become indispensable in our daily lives.

⁂ In this course, we will learn the fundamentals of networks, including the architecture of the Internet, addressing, routing, error correction and detection, congestion control, etc. With such knowledge, we will understand how the Internet (and other networks) identifies each device and achieves reliable data delivery between any two devices.

⁂ In the course project, students will research, simulate, or implement networking techniques and learn about emerging networking techniques and applications (e.g., smart cities).

📋 **Prerequisites:**
Probability, Algorithms (Introductory Level for Both)

👤 **Instructor:**
Dr. Jie Gao, Electrical and Computer Engineering