University of Stavanger

Learning Questions – Lecture 1

- What is a computer network?
- Which are the type of network?
- How is the communication in a network working?
- Which are the challenges that need to be addressed in a network?
- How are these challenges addressed?
- Which are the additional challenges of a **wireless** network?
- Which are the characteristics of different **wireless** networks (taxonomy and paradigms)?

University of Stavanger

Learning Questions – Lecture 2

- What is a signal?
- What is an antenna and how can it be characterized?
- Which are the basic propagation mechanisms?
- Which are the main interference types?
- What are encoding and modulation? Which are the encoding and modulation techniques?
- Which are the definitions of multiplexing and duplexing?
- Which are the main channel correction mechanisms?

University of Stavanger

Learning Questions – Lecture 3

- Which are the issues of accessing a shared medium?
- How are the multiple access schemes categorized?
- What is CSMA? Why do we have multiple versions of CSMA?
- What are the hidden and exposed terminal problems? How can they be solved?
- What is CDMA?
- What are OFDM, OFDMA, and SC-OFDMA?
- Which are pros and cons of CDMA and OFDMA?

Learning Questions – Lecture 4

- Is it important to detect and correct errors in wireless communications? Why?
- Which are the different approaches for error control?
- Which are the different methods for error detection? How do they work?
- How are the different versions of ARQ working?
- Which are the different methods for error detection? How do they work?
- Which are the various pros and cons of ARQ and FEC? How can the cons be overcome?

University of Stavanger

Learning Questions – Lecture 5

- What is IP? Which challenges is it addressing?
- Which are the difference between IPv4 and IPv6 (packet and address)? Why do we need IPv6?
- What is a routing table?
- Which are possible routing algorithms? And routing protocols?
- Why is mobile IP needed and how does it work?
- What is QoS? How can it be provided?
- Which is the target of a transport protocol?
- Which is the difference between TCP and UDP?
- Is TCP suitable for wireless networks?
- Which are the possible transport-layer solutions for wireless networks?

University of Stavanger

Learning Questions – Lecture 6 (1/2)

- Which are the principles of cellular network?
- Which are the operations of cellular networks?
- Which is the evolution of cellular networks?
- Which is the architecture of 4G and the related new feature?
- Which is the current vision of 6G?
- Which are the different LPWAN technologies? Which are the differences?
- What is private 5G?

University of Stavanger

Learning Questions – Lecture 6 (2/2)

- Which is the architecture of 5G and the related new features?
- Which are the principle and characteristics of the 5G Core Network and Radio Access Network?
- Which are the technologies used in the 5G NR Air Interface?
- Which are the enabling technologies of 5G?
- How can be 5G deployed?
- Which are the new challenges in 5G?

Learning Questions – Lecture 7

- What are WiFi and 802.11?
- Which are the physical and data link layer technology that are making the various versions of 802.11 possible?
- How is the 802.11 architecture working?
- Which are the different PAN technologies? Which are the differences? How are their architecture working?
- Which are the different LPWAN technologies? Which are the differences?