Course Title:	**Enterprise Networks**
Course Code:	**COMP729**
Descriptor Start Date:	**31/01/2025**
POINTS:	**15.00**
LEVEL:	**7**
PREREQUISITE/S:	**COMP504 or ENEL504**
COREQUISITE/S:	**None**
RESTRICTION/S:	**None**

LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

Total learning hours: 150

PRESCRIPTOR

Addresses the concepts and technologies required for designing and implementing secure, large scale and fault tolerant computer networks; implement Quality of Service (QoS); and connect users and networks to the Wide Area Network (WAN). The technologies to implement virtual network infrastructures including cloud computing and software defined networks. Students acquire the capabilities to implement switching, routing and WAN protocols using hardware devices as well as using suitable simulators. Techniques for maintaining, monitoring and troubleshooting networks are also covered.

LEARNING OUTCOMES

1. Design, implement and critically analyse fault tolerant scalable switched networks
2. Evaluate, select and implement appropriate technologies for connection of an enterprise network to the public wide area network infrastructure
3. Critically evaluate solutions for enabling users to access the corporate network remotely using the Internet
4. Apply appropriate techniques and methods for maintaining, troubleshooting, and managing networks
5. Discuss and explain network security, virtualisation infrastructures and services

CONTENT

- Network architectures for scalability and redundancy
- Switching concepts, hardware, link redundancy, link aggregation
- Routing protocols including OSPF for enterprises
- Connection to the WAN, serial protocols, and broadband technologies
- Cryptographic tools and processes
- ACL construction and implementations
- Introduction to VPN technologies
- Cloud computing, virtual network infrastructure, software defined networking
- QoS concepts
- Monitoring, troubleshooting, and maintaining networks

LEARNING & TEACHING STRATEGIES

The theory and concepts will be presented and discussed in lectures with the help of demonstrations using remote connections to routers, switches, as well as simulators. These will be followed up by students applying them into practice using networking hardware devices in the networking lab. Students will be given formative lab assessments to encourage development of practical skills.

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Mid-semester test and quizzes	25.00	1 - 4
Practical assessment	25.00	1 - 4
Examination	50.00	5

Grade Map **MAP1**

A+ A A- Pass with Distinction
B+ B B- Pass with Merit
C+ C C- Pass
D Fail

Overall requirement/s to pass the course:

To pass this course, students must achieve a minimum overall grade of C-.

LEARNING RESOURCES

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For further information, contact: Te Ara Auaha - Faculty of Design & Creative Technologies

Principal Programme: **AK3697, Bachelor of Computer and Information Sciences**

Related Programme/s: