| Metropolia UAS Information Tech COMMON STUDIE | | extent of credits | Mathematics and natural sciences skills | Hardware skills | Network engineering skills | Software skills | ICT business skills | ICT application skills | Communication skills | Learning to Learn | Ethics | Operating in a workplace | Internationality and multiculturalism | Sustainable Development | Proactive Development |
|---|---|-------------------|---|-----------------|----------------------------|-----------------|---------------------|------------------------|----------------------|-------------------|--------|--------------------------|---------------------------------------|-------------------------|-----------------------|
| 1st year of study | Software 1 | 15 | | _ | | X | _ | X | Х | × | | Х | × | 0, | |
| | Software 2 | 15 | Х | | | Х | | Х | Х | Х | | Х | Х | | |
| | Hardware 1 | 15 | Х | Х | Х | | | | Х | Х | | Х | Х | | |
| | Hardware 2 | 15 | Х | Х | Х | | | | Х | Х | | Х | Х | | |
| | Finnish 1 | 5 | | | | | | | Х | Х | Х | | Х | | |
| | Finnish 2 | 5 | | | | | | | Х | Х | Х | | Х | | |
| 3rd year of study | Engineering Swedish | 5 | | | | | | | Х | | | Х | Х | | |
| | Engineering Finnish and Communication Skills | 5 | | | | | | | Χ | | | Х | Х | | |
| | Finnish as a Second Language: Finnish at Work | 5 | | | | | | | Х | | | Х | Х | | |
| | Economics | 5 | | | | | Х | | | | Х | | | | |
| 4th year of study | Multidisciplinary Innovation Project | 10 | Х | Х | Х | Х | X | Х | Χ | Х | Х | Х | Х | Х | X |
| | Academic and Research Communication | 5 | | | | | | Х | Х | | Х | Х | | | |
| | Work Placement 1 | 15 | Х | Х | Х | Х | Х | Х | Х | Х | Х | Х | Х | Х | Х |
| | Work Placement 2 | 15 | | Х | Х | Х | Х | Х | Х | Х | Х | Х | Х | Х | Х |
| | Bachelor's Thesis | 15 | Х | Х | Х | Χ | Χ | Χ | Χ | Χ | Χ | Χ | Χ | Χ | Χ |

| Metropolia UAS Information Tech MAJOR: SOFTWA | nology ARE ENGINEERING | extent of credits | Mathematics and natural sciences skill | Hardware skills | Network engineering skills | Software skills | ICT business skills | ICT application skills | Communication skills | Learning to Learn | Ethics | Operating in a workplace | Internationality and multiculturalism | Sustainable Development | Proactive Development |
|---|---|-------------------|--|-----------------|----------------------------|-----------------|---------------------|------------------------|----------------------|-------------------|--------|--------------------------|---------------------------------------|-------------------------|-----------------------|
| 2nd year of study | Object-oriented Programming | 10 | _ | _ | _ | Х | _ | _ | | x | | | | Х | |
| | Programming Project | 5 | | | | Х | | Х | Х | Х | | Х | | Х | Х |
| | Web Development | 10 | | | Х | Х | | | | Х | | | | Х | |
| | Web Project | 5 | | | Х | Х | | Х | Х | Х | Х | Х | | Х | |
| | Description and Modelling Techniques | 5 | | | | Х | | | | Х | | Х | | | |
| | User-centered Design | 5 | | | | Х | | | | Х | Х | Х | Х | Х | Х |
| | Software Engineering Project 1 | 5 | | | Х | Х | | Х | Х | Х | | Х | | Х | Х |
| | Data Structures and Algorithms | 5 | Х | | | Х | | | | Х | | | | Х | |
| | Design Patterns | 5 | | | | Х | | | | Х | | | | Х | |
| | Software Engineering Project 2 | 5 | | | Х | Х | | Х | Х | Х | Х | Х | Х | Х | Х |
| 3rd year of study | Probability Calculus and Statistics | 5 | Х | | | Х | | | | Х | Х | | | Χ | |
| | Design Patterns in Mobile Application Development | 5 | | | | Х | | Х | | Х | | | | Χ | |
| | Sensors in Mobile Application Development | 5 | | Х | | Х | | Х | | Х | | | | Х | |
| | Advanced Mobile Application Development | 5 | | Х | | Х | | Х | | Х | | | | Х | |
| | Mobile Application Development Project | 5 | | Х | Х | Х | | Х | Х | Х | | Х | Х | Х | Χ |
| | Ethical Hacking | 5 | | | | Х | | Х | | Х | Х | | | Х | |
| | Special Professional Course | 5 | | | | Х | | Х | | Х | | | | Х | |

| Metropolia UAS Information Tech MAJOR: GAME D | | extent of credits | Mathematics and natural sciences skills | Hardware skills | Network engineering skills | Software skills | ICT business skills | ICT application skills | Communication skills | Learning to Learn | Ethics | Operating in a workplace | Internationality and multiculturalism | Sustainable Development | Proactive Development |
|---|--|-------------------|---|-----------------|----------------------------|-----------------|---------------------|------------------------|----------------------|-------------------|--------|--------------------------|---------------------------------------|-------------------------|-----------------------|
| 2nd year of study | Game Design | 5 | | Х | _ | Х | X | _ | Х | X | | Х | _ | U, | |
| | Game Engines | 5 | Х | | Х | Х | | | | Х | | | | | |
| | Game Mathematics | 5 | Х | | | Х | | | | Х | | | | | |
| | C++ Programming | 5 | Х | | | Х | | | | Х | | | | | |
| | Basics of Game Graphics | 5 | Х | | | Х | | | | Х | | | | | |
| | Portfolio Project 1 | 5 | | | | Х | Х | Х | Х | Х | | Х | | | |
| | Game Physics | 5 | Х | | | Х | | | | Х | | | | | |
| | Data Structures and Algorithms | 5 | Х | | | Х | | Х | | Х | | | | | |
| | Data Structures and Algorithms Project | 5 | Х | | | Х | | Х | | Х | | Х | | | |
| | Portfolio Project 2 | 15 | | | | Х | Х | Х | Х | Х | | Х | | | |
| 3rd year of study | Advanced C++ Programming | 5 | Х | | | Х | | Х | | Х | | | | | |
| | Game Server Programming | 5 | | Х | Х | Х | | Х | | Х | | | | | |
| | Graphics Programming | 5 | Х | | | Х | | | | Х | | | | | |
| | Multiplayer Game Project | 15 | | | | Х | Х | Х | Х | Х | | Х | | | |
| | Game Publishing and Analytics | 5 | | | | Х | Х | | Х | Х | X | Х | | | |

| Metropolia UAS Information Techr MAJOR: SMART I | | extent of credits | Mathematics and natural sciences skills | Hardware skills | Network engineering skills | Software skills | ICT business skills | ICT application skills | Communication skills | Learning to Learn | Ethics | Operating in a workplace | Internationality and multiculturalism | Sustainable Development | Proactive Development |
|---|--|-------------------|---|-----------------|----------------------------|-----------------|---------------------|------------------------|----------------------|-------------------|--------|--------------------------|---------------------------------------|-------------------------|---|
| 2nd year of study | C Programming in IoT Devices | 5 | | X | _ | Х | _ | _ | | Х | | | | | |
| | Switched Networks and Routing | 5 | | | Х | | | | | Х | | | | | |
| | Engineering Mathematics | 5 | Х | | | | | | | Х | | | | | |
| | Embedded Systems Programming | 5 | | Х | Х | Х | | Х | Х | Х | | | | | |
| | Linux Servers and Databases | 5 | | | Х | Х | | Х | | Х | | | | | |
| | Probability and Statistics | 5 | Х | | | Х | | | | Х | | | | | |
| | Object-Oriented Programming in IoT Devices | 5 | | Х | | Х | | | | Х | | | | | |
| | Modern Computer Architecture | 5 | | Х | | Х | | | | Х | | | | | |
| | Mathematics and Physics for IoT | 5 | Х | | | | | | | Х | | | | | |
| | IoT Connecting Things | 5 | | Х | | Х | | Х | Х | Х | | | | | |
| | IoT Devices and Wireless Communication | 5 | | Х | Х | Х | | Х | Х | Х | | | | Х | |
| | Sensor Physics | 5 | Х | | | | | | | X | | | | | |
| | Windows Servers | 5 | | Х | X | | | X | | X | | | | | |
| | Secure Enterprise Networks | 5 | | | X | | | X | | X | | | | | X |
| | IoT Security | 5 | | | X | V | | X | | X | Х | Х | | | X |
| | Cloud Computing Fundamentals and Machine Learning Enterprise Virtualization Configuration and Management | 5 5 | | | X | Х | | X | V | X | | | | | X |
| | Cybersecurity Operations | 5 | | | X X | | | X X | Х | X X | Х | X | | | X |
| 3rd year of study | IoT Security | 5 | | Х | X | | | X | | X | X | X | | | X |
| | Managing Linux Systems with Embedded Perspective | 5 | | X | X | Х | | X | | X | | | | | <u>, , , , , , , , , , , , , , , , , , , </u> |
| | ARM-Processors and Embedded Operating Systems | 5 | | X | | X | | | | X | | | | | |
| | Embedded Linux Basics (Yocto Project) | 5 | | Х | Х | Х | | Х | Х | X | | Х | | | |
| | Software Test Automation for Embedded Systems | 5 | | Х | | Х | | Х | | Х | | | | | |
| | Amazon Web Services | 5 | | | Х | Х | | Х | | Х | | Х | | | Х |
| | Microservices and Container Orchestration | 5 | | | Х | Х | | Х | | Х | | | | | Х |
| | Ethical Hacking | 5 | | | | | | Х | Х | Х | Х | Х | | | |
| | Introduction to Big Data Analytics | 5 | | | Х | Х | | Х | | Х | | | | | |
| | Practical Cybersecurity | 5 | | | Х | | | Х | | Х | | Х | | | Х |
| | IoT Project | 10 | Х | | Х | Х | | Х | Х | Х | | Х | | Χ | X |