EDUNATION
A KEYSTONE COMPANY
VUORIKATU 3
33100 TAMPERE
FINLAND
CONTACT@EDUNATION.CO
+358 50 354 8603

SUMMARY OF COURSE DESCRIPTIONS

ENGINEERING & TECHNOLOGY TRACK

A. Orientation to Academic Studies

Credits: 2 ECTS
Grading Scale: Pass or Fail

Description: This course is your starting point for the Pathway to Europe program and higher education studies. It covers essential study skills like time management, independent study, goal setting, and teamwork. You'll learn to navigate Claned, the digital learning platform, and other tools used in European higher education. Plus, you'll create your own study plan and set goals for the semester ahead.

Learning Outcomes:
Upon completion, students will:

- Understand how to improve your study skills
- Feel confident managing your studies independently and staying motivated
- Be proficient in using online learning platforms and other tools
- Set personal learning goals and use different learning strategies effectively.

B. Preparatory Mathematics

Credits: 5 ECTS
Grading Scale: Pass or Fail

Description: This course provides a recap, revision, and review of key secondary and high school mathematics concepts essential for university studies in engineering and technology. Topics covered include mathematical operations, fractions, decimals, percentages, algebra, statistics, probability, and mathematical models.

Learning Outcomes:
Upon completion, students will:

- Gain an intermediate understanding of mathematical operations, fractions, decimals, percentages, algebra, basic statistics, probability, and mathematical models.
- Acquire mathematical skills equivalent to those of high school/upper secondary graduates in the destination country.

VUORIKATU 3
33100 TAMPERE
FINLAND
CONTACT@EDUNATION.CO
+358 50 354 8603

C. Academic Communication: Speaking and Listening
Credits: 5 ECTS
Grading Scale: 0-5

Description: This course is designed to enhance English speaking and listening skills essential for academic study in higher education. Students will refine communication skills through various activities such as group discussions, debates, and presentations. They will also practice listening comprehension exercises and learn different listening strategies. Self-assessment tools are incorporated to help students monitor their progress, identify personal challenges, and reflect on their learning through a learning diary.

Learning Outcomes:
Upon completion, students will:

- Demonstrate proficiency in planning and delivering presentations on academic topics.
- Communicate effectively and confidently in English across formal and informal situations.
- Comprehend the main content and key details of academic lectures.
- Apply different listening strategies effectively.
- Interpret dialogue in various academic contexts.
- Engage in discussions on diverse topics.
- Express thoughts and opinions articulately.

D. Academic Communication: Reading and Writing
Credits: 5 ECTS
Grading Scale: 0-5

Description: This course targets intermediate ESL students and aims to enhance their ability to read and write academic texts in English. It employs authentic readings and a multi-drafting process to develop writing skills, preparing students for academic English work. Reading exercises emphasize comprehension, vocabulary expansion, and study skills, while writing exercises focus on paragraph organization, essay construction, and formal English grammar usage. Students will learn to summarize and critically evaluate various academic texts, understand academic writing fundamentals, and produce structured texts with academic referencing. Interactive online classes and peer feedback sessions enhance the learning experience.

VUORIKATU 3
33100 TAMPERE
FINLAND
CONTACT@EDUNATION.CO
+358 50 354 8603

Learning Outcomes:
Upon completion, students will:

- Understand the essential features of academic writing.
- Produce well-structured academic texts.
- Grasp the concept of process writing.
- Apply diverse reading strategies effectively.
- Summarize texts and extract main points accurately.
- Identify different types of academic texts.
- Evaluate information critically.
- Master the basics of academic referencing.

E. Physics for Engineering
Credits: 4 ECTS
Grading Scale: 0-5

Description: This introductory course in engineering physics offers students a foundational understanding of core physics concepts essential for further studies in various engineering disciplines. Topics covered include Mechanics, Electricity and Magnetism, Thermal Physics, and Waves and Optics. Emphasis is placed on developing problem-solving skills and applying physics knowledge to real-world scenarios. The course promotes peer learning through group work and aims to cultivate essential working skills, such as utilizing the internet for research, formulating questions, and meeting assignment deadlines.

Learning Outcomes:
Upon completion, students will:

- Understand the laws and principles governing wave motion.
- Possess basic knowledge of kinematics, Newton's laws of motion, work, energy, and power.
- Grasp the fundamentals of thermal physics, thermodynamics, and statistical mechanics.
- Comprehend the basic laws and phenomena of electricity and magnetism.
- Demonstrate the ability to solve physics problems related to the aforementioned topics.

VUORIKATU 3
33100 TAMPERE
FINLAND
CONTACT@EDUNATION.CO
+358 50 354 8603

F. Introduction to Computer Science
Credits: 3 ECTS
Grading Scale: 0-5

Description: This entry-level course provides an introduction to computer science, focusing on computational thinking and problem-solving approaches. Students will explore fundamental concepts such as computers and applications, data structures, algorithms, programming, cloud computing, robotics, and artificial intelligence. A hands-on Python project is included to reinforce learning. The course emphasizes peer learning through group work and aims to develop essential skills like internet research, formulating questions, and meeting assignment deadlines.

Content:

- Introduction and Python language
- Version control
- Project (Python)
- Review and final exam

Learning Outcomes:
Upon completion, students will:

- Gain a broad understanding of computer science and programming.
- Develop a higher-level comprehension of computers' nature, control mechanisms, and functionalities.
- Acquire basic knowledge of different programming languages and their applications.
- Cultivate algorithmic thinking skills.
- Understand the workings of structured data.
- Describe current and future trends in computing.
- Demonstrate knowledge of professional practices and ethics in computer science.

G. Mathematics for Engineering
Credits: 6 ECTS
Grading Scale: 0-5

Description: This course delves into essential mathematical topics common to all engineering disciplines. Students will explore functions, complex numbers, vectors, matrices, linear transformations, systems of linear equations, differential calculus, and integral calculus. Emphasizing problem-solving skills, the course encourages the application of mathematical knowledge to real-world scenarios. Peer learning is facilitated through group work, fostering collaboration and skill development. Additionally, students will hone internet research skills and adhere to assignment

VUORIKATU 3
33100 TAMPERE
FINLAND
CONTACT@EDUNATION.CO
+358 50 354 8603

deadlines.

Learning Outcomes:
Upon completion, students will:

- Solve problems pertaining to functions, complex numbers, linear algebra, and calculus.
- Improve proficiency in reading and writing mathematical text.
- Justify answers using definitions and theorems effectively.