

STUDY GUIDE

INTERNET OF THINGS – APPLICATION AREAS

**Organised by
Karlstad University**

1. IDENTIFYING DATA.									
· Course Name.	Internet of things – Application Areas 26-27 S2								
· Coordinating University.	Karlstad University								
· Partner Universities Involved.	N/A								
· Course Field(s).	Computer Science								
· Related Study Programme.	Master of Science in Industrial Engineering and Management								
· ISCED Code.	0610: Information and Communication Technologies								
· SDG.	<ul style="list-style-type: none"> • SDG2 • SDG3 • SDG6 • SDG7 • SDG9 • SDG11 • SDG13 • SDG15 								
· Study Level.	M								
· EUNICE Key Competencies	<p>[Indicate the Key Competencies required for the course.]</p> <ul style="list-style-type: none"> • Green – strongly • Orange- moderately • Red – partially • Blank cell - not at all <table border="1"> <tbody> <tr> <td>Problem solving</td> <td style="background-color: #FFC000;"></td> </tr> <tr> <td>Teamworking</td> <td></td> </tr> <tr> <td>Communication</td> <td style="background-color: #90EE90;"></td> </tr> <tr> <td>Self-management</td> <td style="background-color: #90EE90;"></td> </tr> </tbody> </table>	Problem solving		Teamworking		Communication		Self-management	
Problem solving									
Teamworking									
Communication									
Self-management									

	Cognitive flexibility	
	Digital competence	
	Technical competence	
	Global intercultural competence	

· Number of ECTS credits allocated.	1,5 ECTS
· Mode of Delivery.	Online live (with self-study activities)
· Language of Instruction.	English
· Course Dates.	25/01/2027 – 11/06/2027
· Precise Schedule of the Lectures.	
· Key Words.	Computer Science, Internet of things, IoT
· Catchy Phrase.	The course covers the Internet of Things, where communication occurs between connected free-standing devices, rather than between humans and machines.

· Prerequisites and co-requisites.	English level B2 and 30 ECTS credits in Computer Science (including Computer Networking, 7.5 ECTS credits) or three years of professional experience in the information technology sector, or equivalent
· Number of EUNICE students that can attend the Course.	27
· Number of EUNICE students that can attend the course per institution	3 per partner university
· Course inscription procedure(s).	

2. CONTACT DETAILS.

· Department.	Computer Science
· Name of Lecturer.	Mohammad Rajiullah

· E-mail.	mohammad.rajiullah@kau.se
· Other Lecturers.	N/A

3. COURSE CONTENT.

The course treats the Internet of Things (IoT), where communication takes place between free-standing connected units, rather than between humans and machines. The course is focused on small, resource-efficient units such as sensors for the measuring and steering of controls and their communication. An introduction to the field is provided, as well as an overview of current areas of application such as smart health, smart homes, smart cities, and Industry 4.0

4. LEARNING OUTCOMES.

Upon completion of the course, students should be able to explain and discuss the Internet of Things as a concept and in terms of typical areas of application.

5. OBJECTIVES.

6. COURSE ORGANISATION.

UNITS

- | | |
|----|---|
| 1. | Areas of application: Health, smart homes, smart cities, industry 4.0 |
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LEARNING RESOURCES AND TOOLS.

The course requires that the student be involved with a practical IoT project.

However, students must initiate and fund the project themselves; the university will not cover any associated costs

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS.

7. ASSESSMENT METHODS, CRITERIA AND PERIOD.

Assessment is based on an individual hand-in assignment and an oral exam.

One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course. For Engineering students, one of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), or U (Fail) is awarded in the examination of the course

OBSERVATIONS.

8. BIBLIOGRAPHY AND TEACHING MATERIALS.

The course literature consists of scientific articles and literature made accessible online.