



Seinäjoki University of Applied Sciences

The teaching principles of the embedded systems.

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Student background

- There is now shortage of engineering students in Finland .
- The best students are logging in to Tampere or Helsinki Universities
- Weak motivated students are logging in to Seinäjoki as well.
- 30% of funds are based on the graduation rate.
- The motivation is one of the most important feature of studies. The wastage is quite significant problem.
- The intake in information technology is about 35 students.

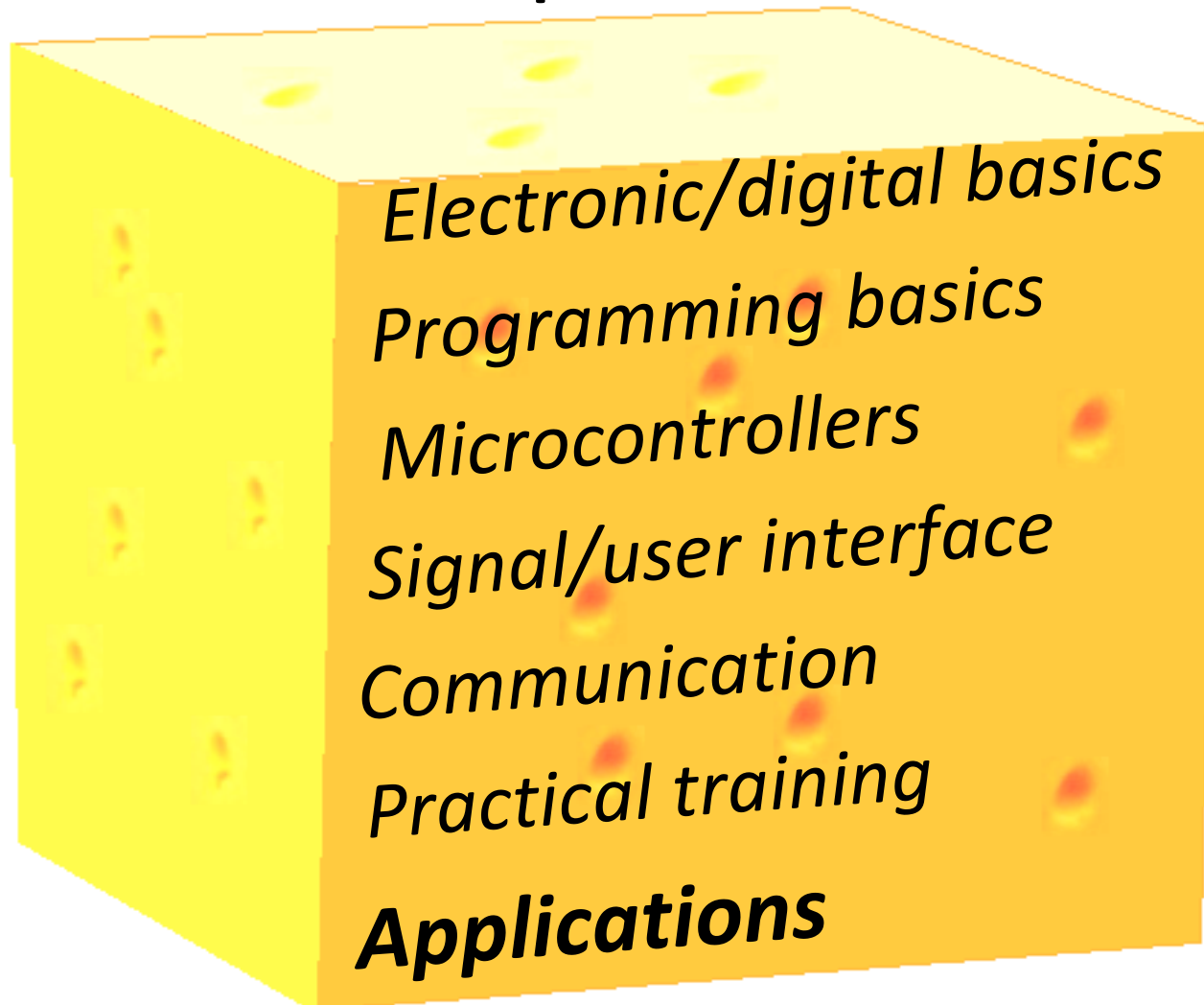


Regional background

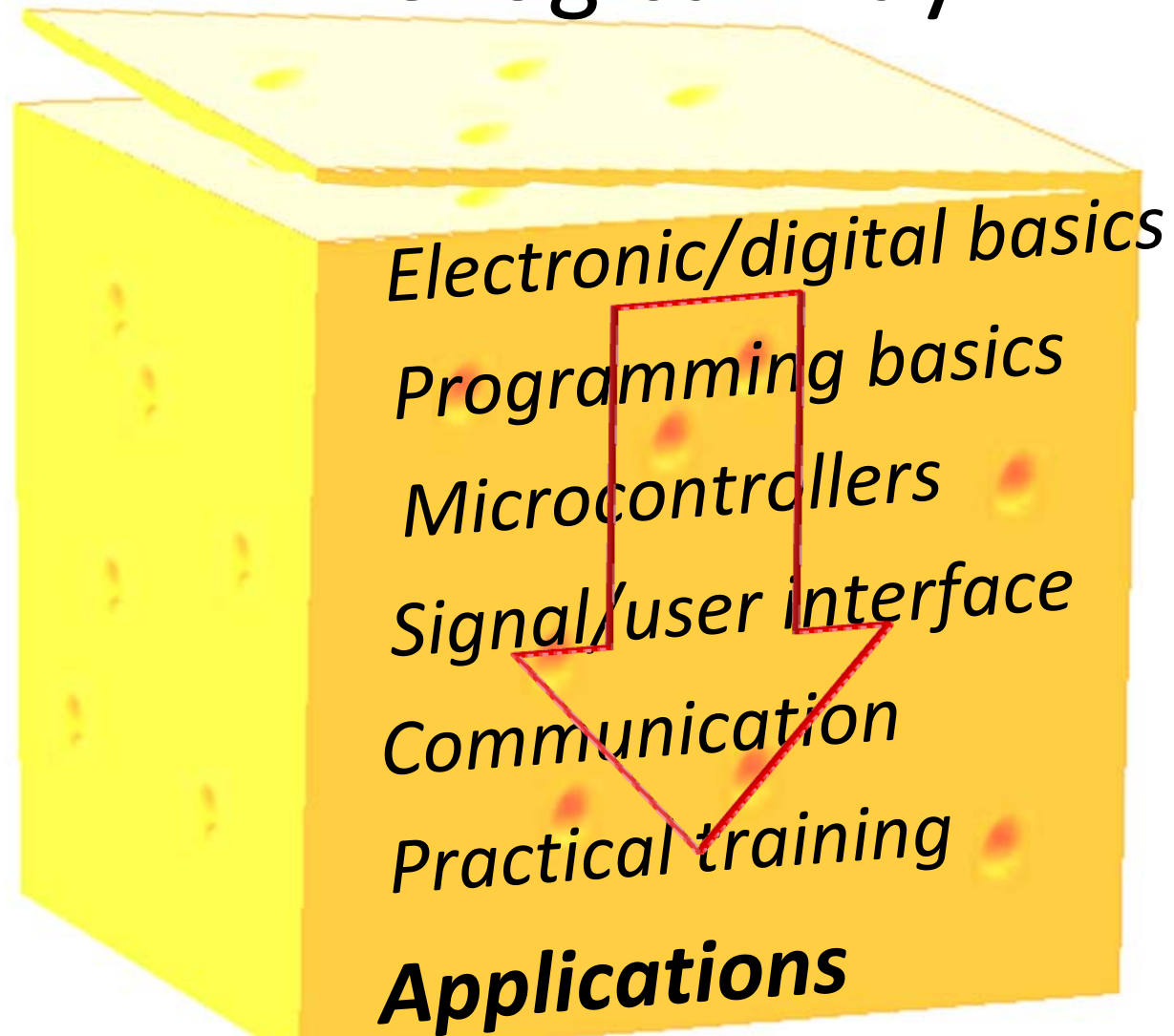
- Seinäjoki is a centre of a fast growing rural area with richly of small-scale industry.
- Companies are mostly directed to metal processing and bulk automation.
- Few companies are directed to embedded systems.
- There is a shortage of engineering experts; also, in embedded systems.



The cube of professional studies

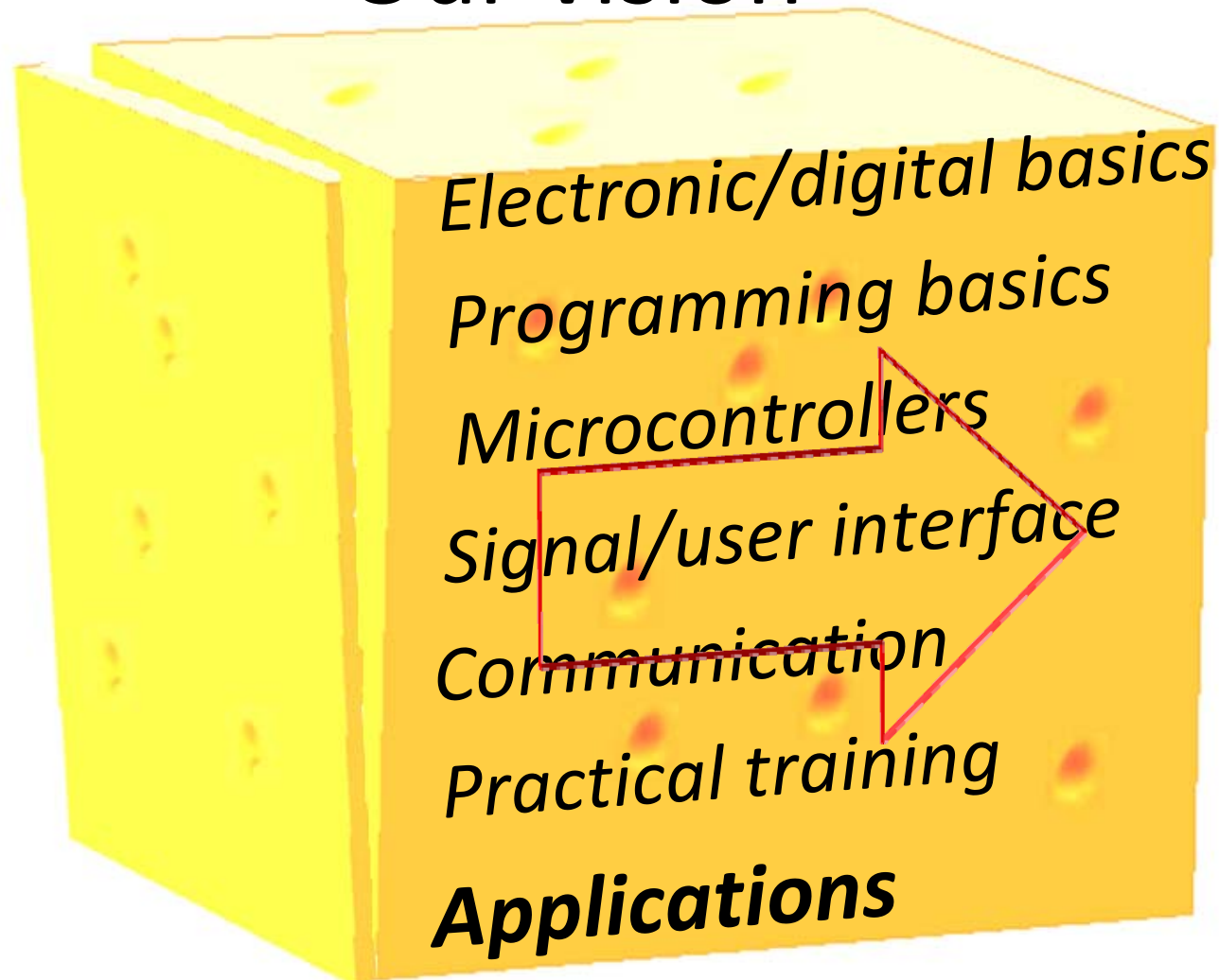


The logical way



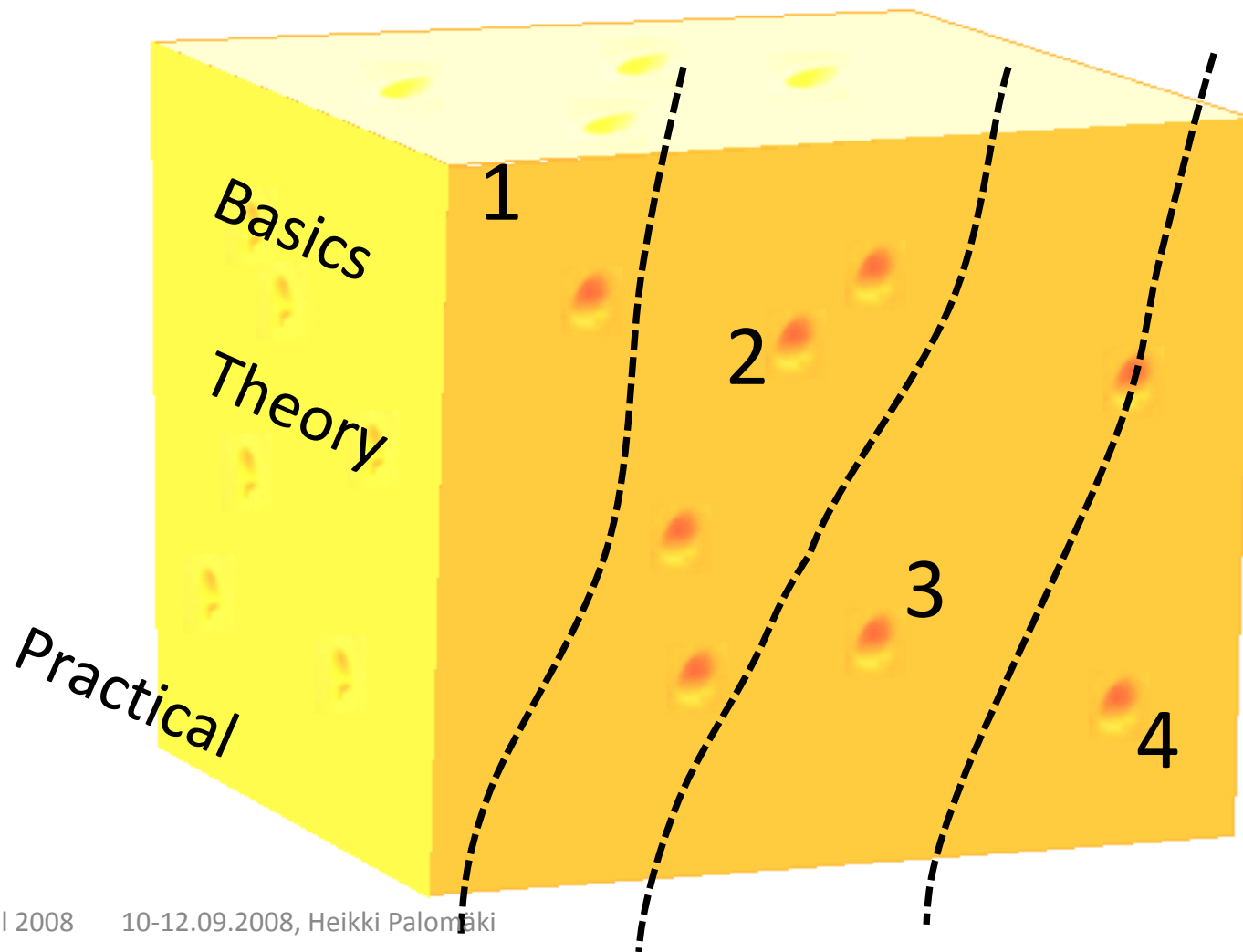


Our vision



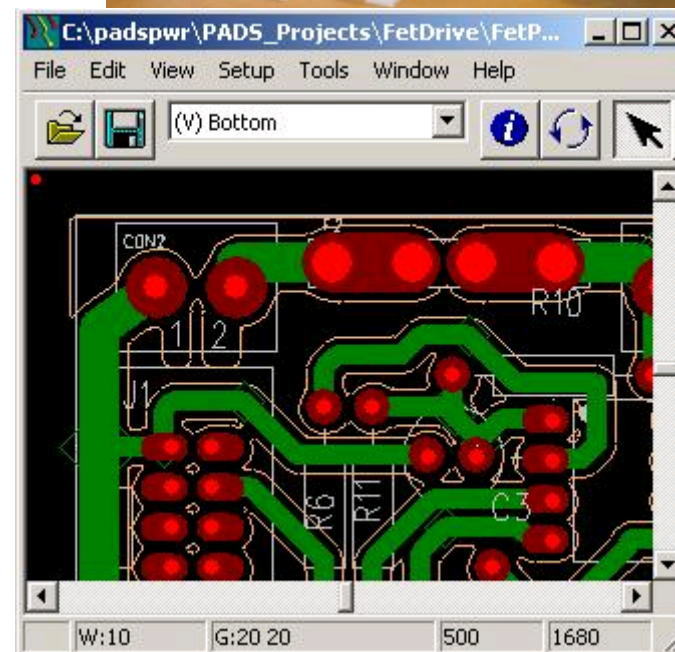
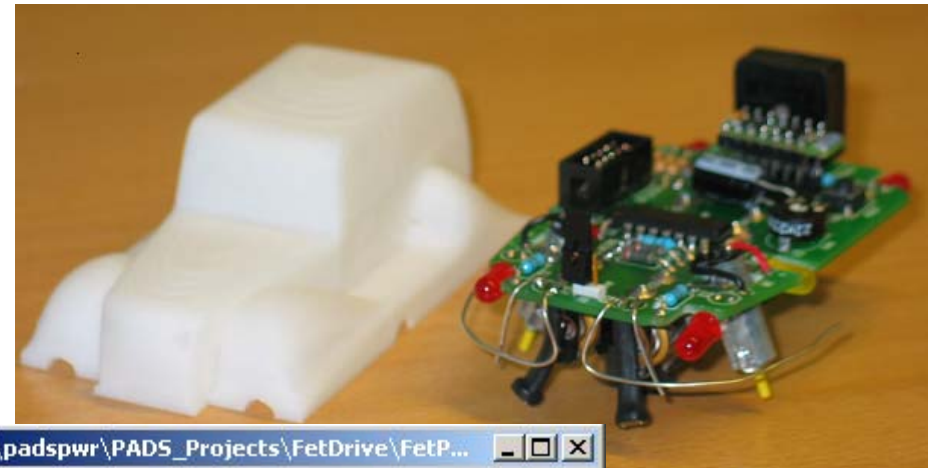


Realization of professional studies



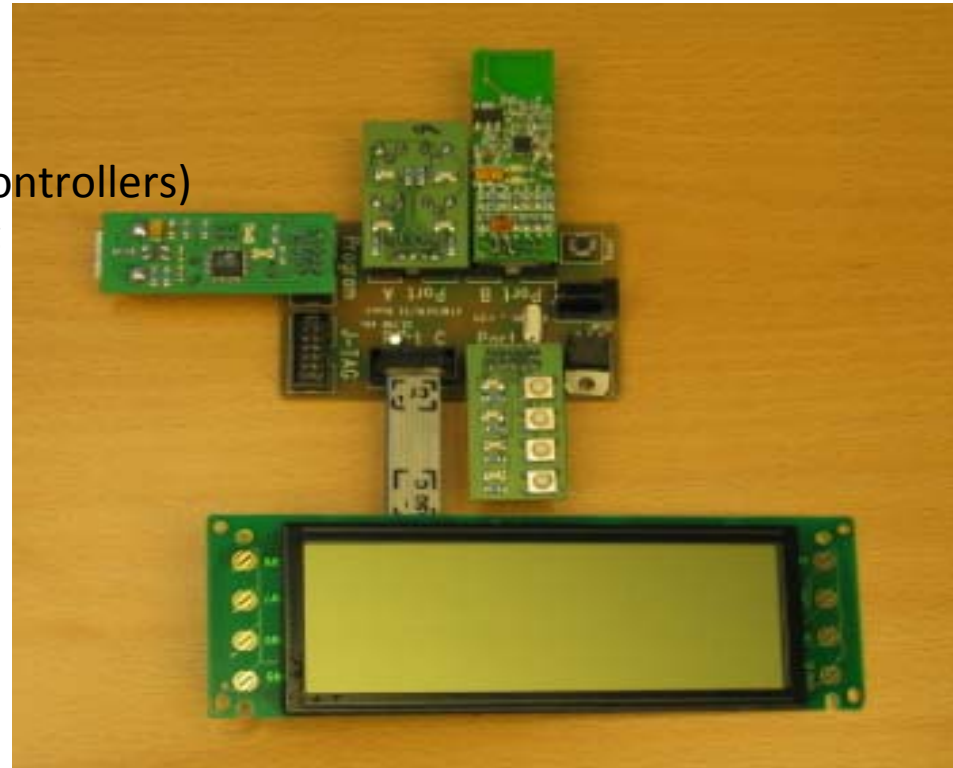
Professional studies in 1. year

- Digital basics
- Programming basics
- Electronic components
- Embedded practical work
 - Assembly of a robot kit
 - Testing
 - Program loading (programming)
- PCB layout design
 - Circuit design
 - Layout design
 - PCB manufacturing



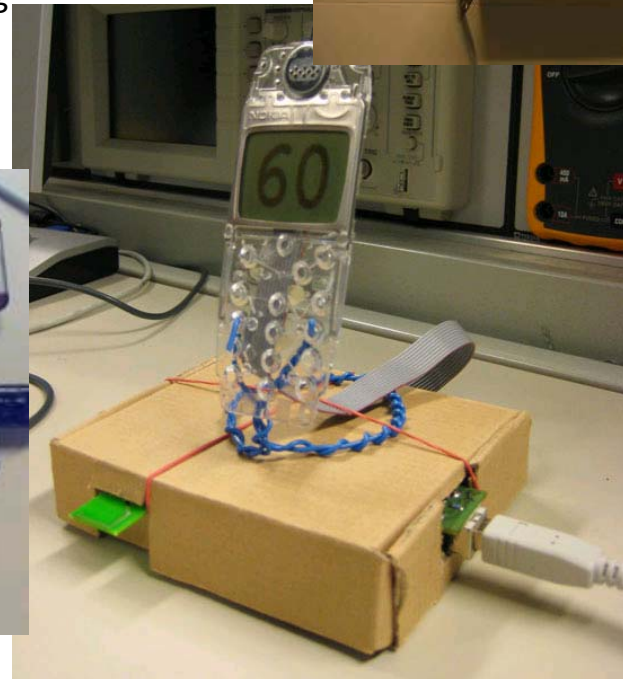
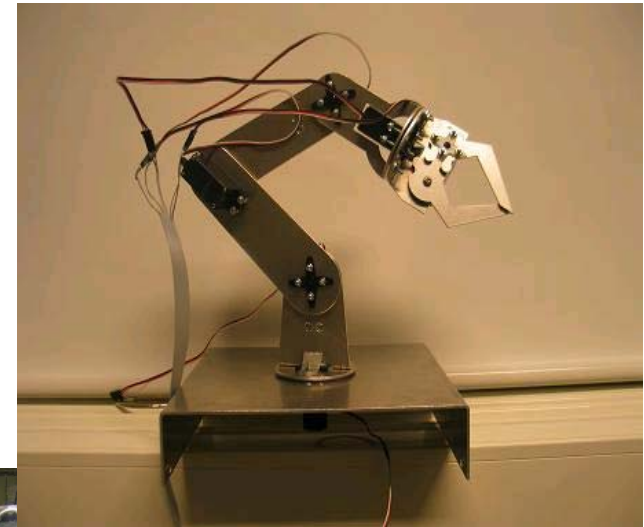
2. Year

- Digital technology
- Programming technology
- Electronic project
 - Projects from companies
 - Circuit and layout design
- Embedded system basics (AVR –controllers)
 - Hardware-oriented programming
 - Microcontrollers
 - Interfaces
 - Measuring & control



3. Year

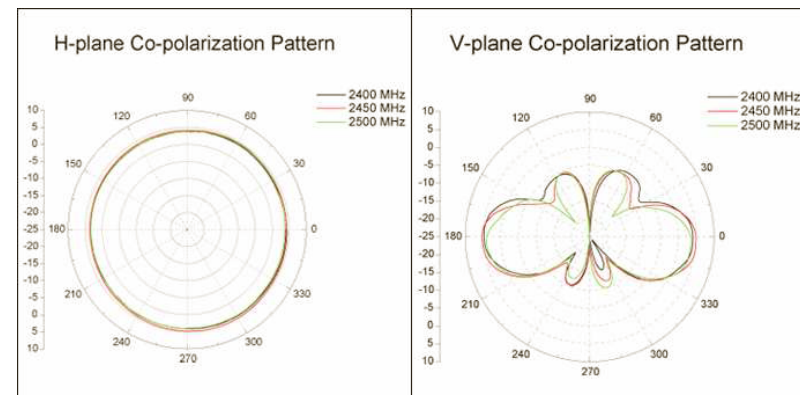
- FPGA design
- Embedded networking
- Embedded programming (ARM)
 - Embedded software projects
- Embedded projects
 - Projects from companies
 - Research & developing
 - Seminars
 - Teamworking





4. Year

- Practical training
- Thesis





Information technology studies

240 ECTS

Final thesis 15 ECTS		
Practical training 30 ECTS		
Free choice studies min. 10 ECTS		
CISCO Network Academy	Linux	Other free choice studies
Professional studies (embedded & programming)		
Software engineering 40 ECTS	Embedded systems 40 ECTS	Computer network technology 40 ECTS
Software production	Electronic production	Data networks
Mobile and network programming	Digital technique	Data servers
Common professional studies 86 ECTS		
Data communication	Electrical engineering and electronics	Automation engineering
Software engineering	Embedded systems basics	Economy and management
Basic studies 60 ECTS		
Supporting studies	Languages and communication	Information technology
	Mathematics and physics	



More data ?

http://www.seamk.fi/in_english.iw3

__ Main pages

<http://tekniikka.seamk.fi/sula/systems>

__ Teaching in embedded

<http://lompsa.seamk.fi/sulautetut/>

__ R&D in embedded systems

<http://ops.seamk.fi/en/2007-2008/degreeprogrammes/?dprog=TITE>

Degree programme

Thank you for interest !

