



# Practical approach in Electronics Education - An Integration of Electria factory with Engineering Education

AmiEs - 2024

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Head of Electronics Team, Head  
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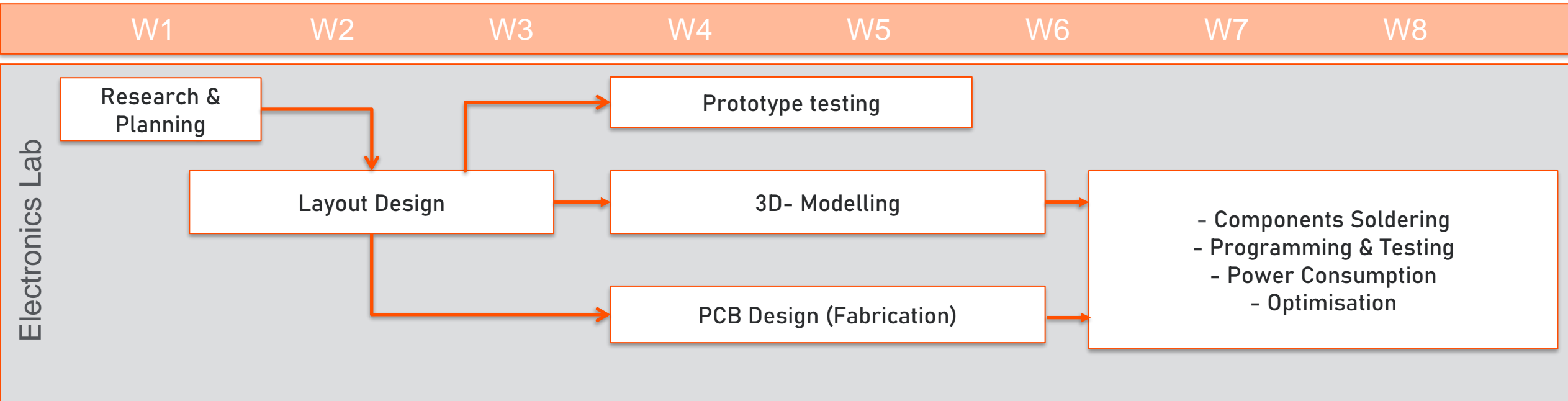
## **Riya Sindhwani**

Senior Lecturer  
Degree Programme in Electronics

# Embedded System Design and Testing, 15ECTs

- Fundamentals of electronics
- Design and programming of embedded systems
- Prototyping and Testing
- Printed circuit board design
- 3D-design in product development
- Fundamentals of power consumption and its optimization

# Embedded System Design and Testing in last year

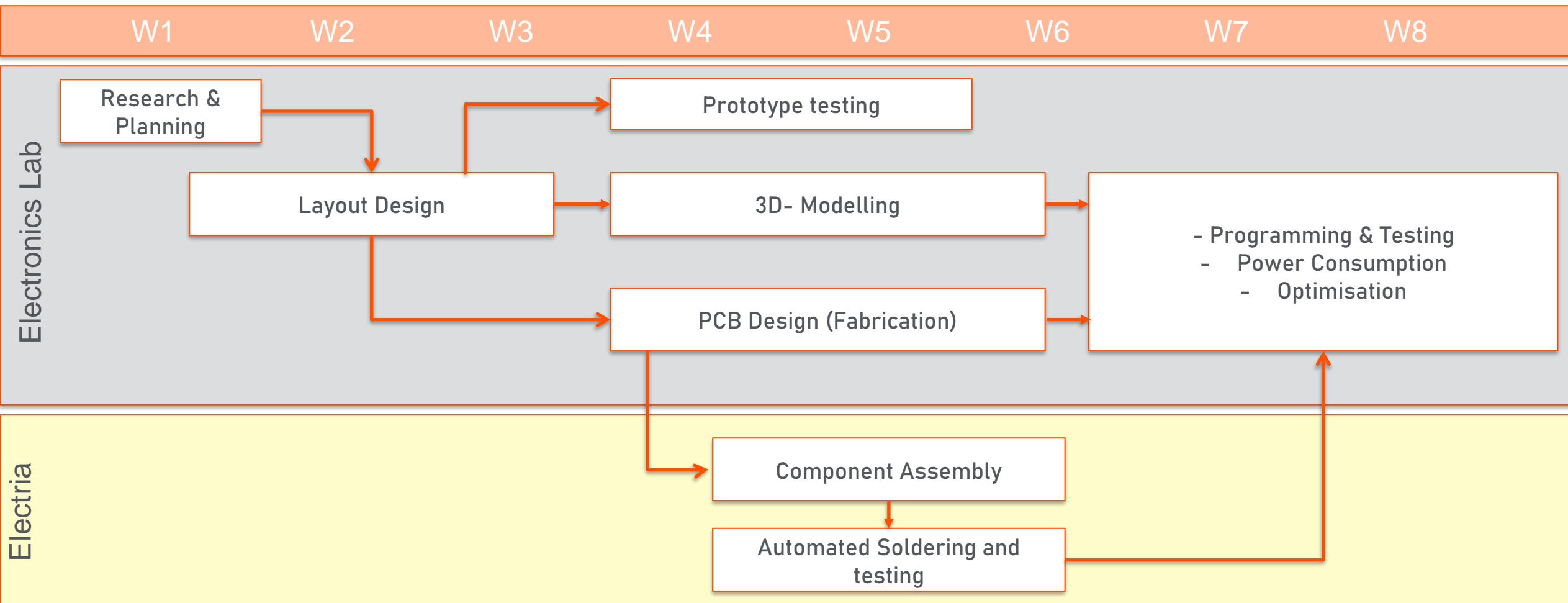


# Integration with Electria Factory

To provide learners with a comprehensive, hands-on experience in each phase of PCB design and manufacturing.

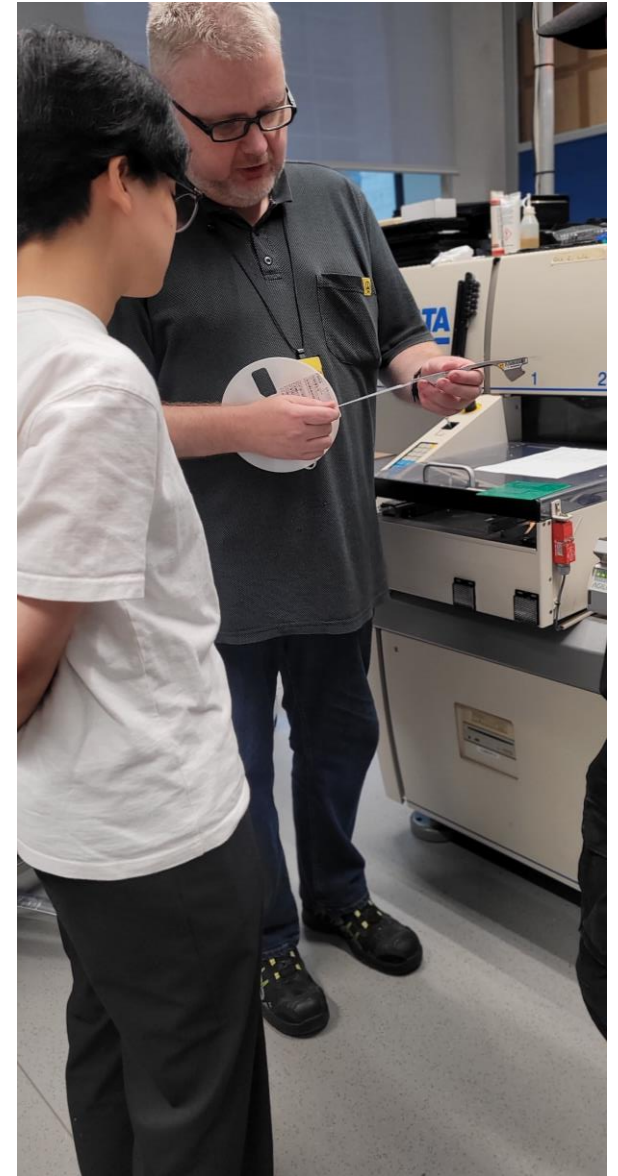
<https://www.metropolia.fi/en/services/electria-factory-electronics-manufacturing-rd-solutions>

# Embedded System Design and Testing this year



## Targets of this integration

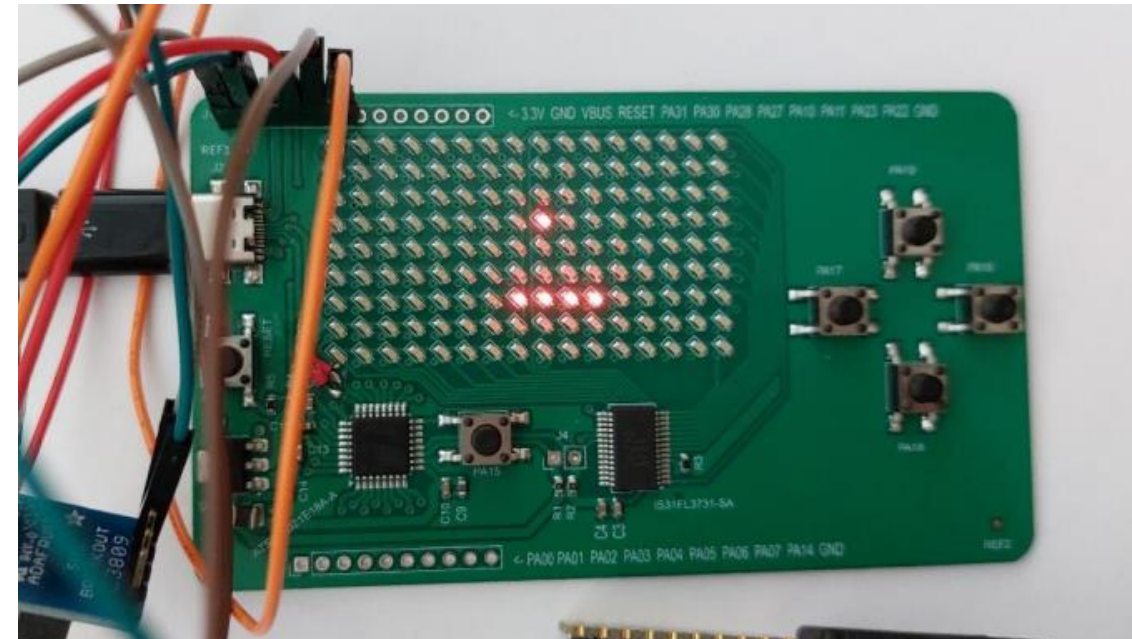
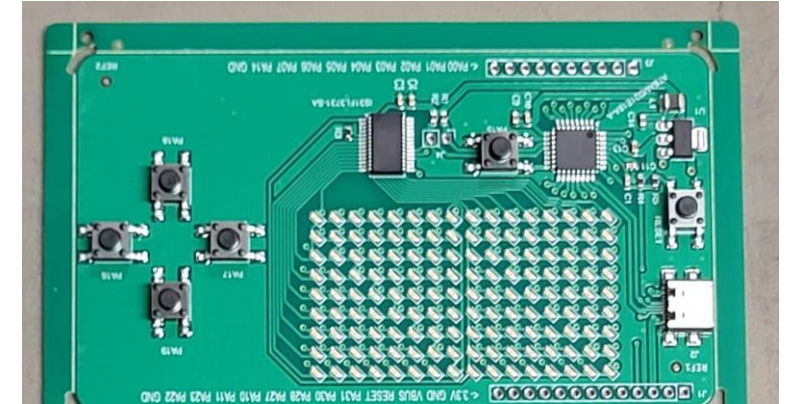
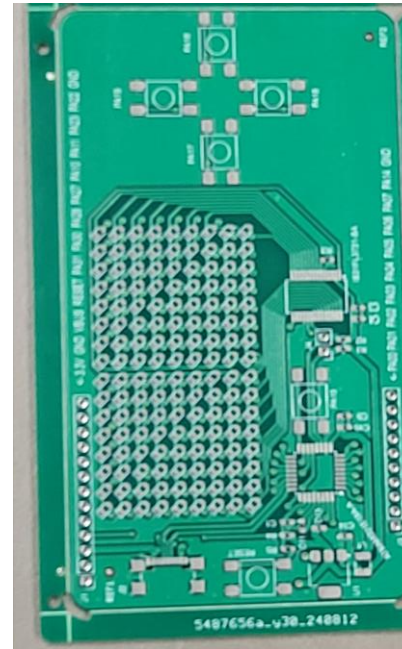
- Hands-on training
- Mistake prevention
- Enhanced learning
- Insight into PCB design





# Electria Factory

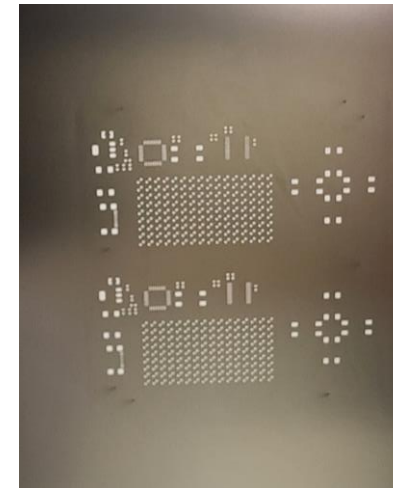
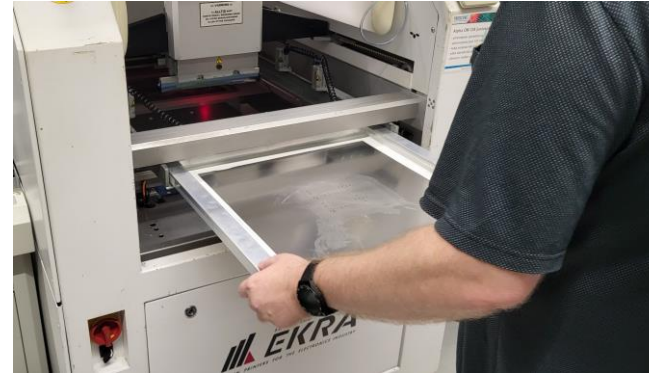
Assembling components and automated soldering





# Application of Solder paste

- Using Ekra Paste printing machine



# Placing components

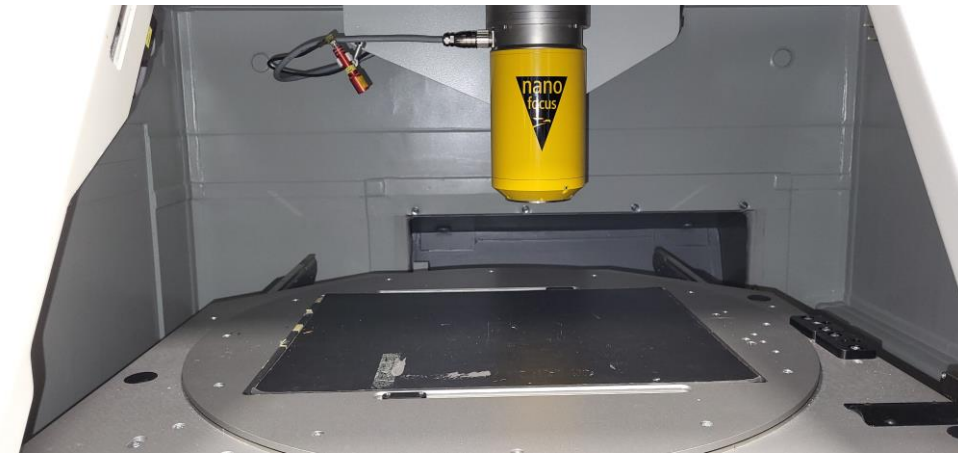
- Using Mydata MY9



# Automated soldering

- Ersa Hotflow 2/14 Reflow oven
- Offers a steady and reliable thermal profile





# Testing

- Phoenix Nanomex X-Ray
- CTS Climatic test chamber





## Learning outcome

- Enhanced conceptual understanding
- Development of technical and practical skills
- Greater retention and recall
- Reflection and iterative learning

Work in progress!



**Thankyou!**