



Aalto-yliopisto
Sähkötekniikan
korkeakoulu

Protopaja / Protocamp

Salu Ylirisku, Kimmo Silvonen,
Shahram Barai, Patrick Linnanen and Carl Pellja

1.6.2022

Protopaja = Protocamp, ELEC-D0301, 10 cr

- ▶ Possibility to learn and study electronics, 3D-printing, laser cutting, PCB manufacturing, etc.
- ▶ Learn about project plans and project work
- ▶ Meeting with real companies
- ▶ Documentation on the Web to allow referencing in your CV
- ▶ Doing additional exercises and personal projects is possible and encouraged
- ▶ Let this be your best summer ever!

Assistants, Meetings and Wiki

Shahram Barai, Patrick Linnanen and Carl Pellja

A group meeting with an assistant every week. Remote meeting is allowed.

Please contact the company (one person in a group) and have a meeting with the person involved.

<https://wiki.aalto.fi/display/protopaja2021/Protopaja+2021>

(last year). Please, open Wiki today. This will enable us to update your access rights.

Preliminary Schedule

See MyCourses or Wiki, possibly remote lectures via Zoom

- ▶ Wed 1.6. 10.15 – 12.30 Starting Lecture, **Groups**
- ▶ Thu 2.6. 10.15 – 12 AS6 Contract signing / Sopimusten allekirjoitus + Project planning / Projektisuunnitelma (Salu)
- ▶ Fri 3.6. 10.15 – 12 Workshop practices, safety and tour / Sähköpajan käytänteet, turvallisuus ja pajakierros (kaikki assarit) 10:15 - 12:00
- ▶ Mon 6.6. 10.15 – 12 AS6 Lecture, see <https://mycourses.aalto.fi/course/view.php?id=34754§ion=1>
- ▶ ...
- ▶ Tue 15.6. 10.15 – 12 Lecture, possibly the last one

AS6 (1st floor) is situated along the corridor between the Workshop and the main lobby.

Important Dates

- ▶ Thu 2.6. 10.15 – 12 **Contract signing**
- ▶ Fri 3.6. 10.15 – 12 Visiting the workshop, **safety issues**
- ▶ Mon 6.6. – Tue 15.6. **Lectures**
- ▶ Fri 17.6. **Project plan** deadline
- ▶ Fri 22.7. Mid-term report, with **preliminary documentation**
- ▶ Fri 19.8. 10.00 – 14 **The final gala** at AS2 (2nd floor)
- ▶ Wed 31.8. **The final report**, with full documentation and **web pages**. See protopaja.aalto.fi

These are pretty much all of the important the dates, but please remember to be in contact with the company and assistants.

TUAS Main Lobby

- ▶ The Workshop is on the 1st floor to the right from the elevator.
- ▶ Meeting rooms are available in the Learning Hub.



Workshop, TUAS 1558



Resources

- ▶ Electronics' components
- ▶ Soldering and PCB manufacturing
- ▶ 3D Printing and Laser cutting
- ▶ Mechanical tools, drilling and carving
- ▶ Win 10 and Linux Computers
- ▶ A small "kitchenette" can be used
- ▶ The workshop will be open at least during the office hours if an assistant is present.
- ▶ Open doors are preferred
- ▶ You may stay in the Workshop after business hours (with ability to safely leave the building).
- ▶ Assistants are available in the Workshop at least from 9 to 15. They can give you more exact info about their schedule.

Space21

- ▶ We have an own room in Space21.
- ▶ Vuorimiehentie 2A, first floor.
- ▶ You need to log in:
- ▶ <https://www.aalto.fi/en/services/space-21-how-to-get-access-rights>
- ▶ and apply for access 24/7.
- ▶ with an RFID key card (available free of charge from the janitors?)
- ▶ Ultimaker S3, assistants need to buy PLA.
- ▶ Some tools, components and measuring equipment; more can be brought.
- ▶ A small "kitchenette" can be used.

New Equipment

- ▶ **Lisa Pro** 3D Printer, Selective Laser Sintering (SLS)
- ▶ We encourage you to test the printer and learn how to use it
- ▶ User Experience is important to us - no matter, what you are printing
- ▶ **3devo**
- ▶ Make your own PLA filament, based on rejected and broken old 3D prints
- ▶ The systems are available for any testing purposes free of charge.

Ordering

- ▶ Negotiate with the assistants about what components you'll need
- ▶ Some of the preferred sources: Farnell, Mouser, TME, DigiKey, Expotech, Claes Ohlson, Amazon.de, and many others
- ▶ Ebay, Aliexpress, Banggood, etc. may need weeks to deliver
- ▶ Consider ordering a few spare parts, like cheap semiconductor devices, at once
- ▶ Mail your order including the links to patrick.linnanen@aalto.fi
- ▶ He will make the order through our system
- ▶ Do not buy anything for yourself!
- ▶ Estimate the total cost with VAT
- ▶ The assistants will tell you more details

Groups

Each group has 1000 euros to use for components. If more is needed it can be negotiated. The components in the workshop are mostly available free of charge. Let's assign you into the groups.

1. Helvar 1 - "We want feedback"
2. Helvar 2 - "I want to control"
3. Helvar 3 - "We want to inform"
4. Saab Finland - "Handheld microwave transmitter"
5. Savox 1 - "Robot hand"
6. Savox 2 - "Intelligent audio listener"
7. Solita - "Electricity Usage & Quality Measure Device"