Laptop advice – Fontys Hogeschool Engineering

For the programmes Automotive Engineering, Electrical & Electronic Engineering, Mechatronics, Mechanical Engineering and Applied Mathematics

Laptop computer specifications

Regardless of which Engineering programme you take, you will need a laptop.

If you already have one, we advise you to use it until it turns out that it is not suitable for certain software you need to use during your studies.
If you want to take this into account when buying a new laptop, please note the following.

Hardware

- Processor: minimum requirements

Automotive Engineering	Intel Core i5 (preferably generation 10 or later, with 4 cores or more) or AMD Ryzen 5 or 7
Electrical & Electronic Engineering	Intel Core i7 (preferably 4 cores or more) or Intel Core i5 (preferably generation 10 or later, with 4 cores or more) or AMD Ryzen 5 or 7
Mechatronics	Intel Core i7 (preferably 4 cores or more) or Intel Core i5 (preferably generation 10 or later, with 4 cores or more) or AMD Ryzen 5 or 7
Applied Mathematics	Intel Core i7 (preferably 4 cores or more) or Intel Core i5 (preferably generation 10 or later, with 4 cores or more) or AMD Ryzen 5 or 7
Mechanical Engineering	Intel Core i5 or comparable

- Display: high resolution display (at least 1920 x 1080 pixels);
- Video graphics: see explanation below;
- Storage: at least SSD 500 GB (preferably 1Tb or more);
- System memory (RAM): sufficient memory to run the operating system and required applications (at least 16 GB, preferably 32GB or more);
- Wi-Fi: wireless internet 802.11g (preferably 802.11n dual-band 2.4 GHz/5 GHz) en WPA-2 compatible;
- USB-B port;
- Anders: webcam en headset.

Operating system and software

- Microsoft Windows 10 or 11 (64 Bit);
- Microsoft Office 2016 or later. Educational licences available through surfspot.nl.

Video graphics

Programmes *Automotive Engineering* and *Mechanical Engineering* use the Siemens NX CAD program. Siemens NX uses an external video graphics card with specific requirements.

Programme of Mechatronics uses the Siemens TIA Portal. Siemens publishes a list of certified graphics card. See references below.

Siemens officially certified graphics cards all belong to the professional segment and are therefore relatively expensive. It is possible to use a cheaper gaming graphics card. Decent results have been reported using NVidia GTX 3060 or MX series cards and newer. If you are contemplating purchasing another graphics card, please contact the programme for advice.

A normal video graphics card will suffice for the programmes Electrical & Electronic Engineering and Applied Mathematics.

Remarks

Applied Mathematics

For all written exams, Applied Mathematics requires students to start their laptop with a bootable USB flash drive containing a restricted version of Windows. This operating system will only work on Windows-certified hardware. It is **impossible** to take an exam with Apple or Linux machines.

All programmes

Software and licenses supplied by Fontys are exclusively available for the Microsoft Windows platform. **Apple and Linux computers are not supported.**

References

Solidworks: https://www.solidworks.com/support/hardware-certification

Siemens TIA portal:

- https://www.intel.com/content/dam/www/public/us/en/documents/guides/siemens-workstation-configuration-guide.pdf
- https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.plm.automation.siemens.com%2Fmedia%2Fglobal%2Fde%2FGraphics-Certification-Table-2020-11-25_tcm53-90260.xlsx&wdOrigin=BROWSELINK