



Faculty of Engineering & the Built Environment

2024 Recommended laptop requirements for students

Mechanical Engineering

Mechanical Engineering first year students should purchase a laptop that they can use throughout the degree. Students will begin using CAD (SolidWorks) in their first year and in later years will build more complex designs and computing tasks that will require more computing and graphics capability.

- At least Intel i5 CPU or AMD Ryzen 5
- At least 8GB of RAM (more is better if the memory is shared with the graphics card)
- 15-inch or larger screen
- Good battery life
- WiFi capable
- The usual USB ports
- Ideally, an independent GPU (graphics card) such as Nvidia Geforce or AMD Radeon is recommended. However, integrated Intel Graphics will suffice if the machine has more RAM that it can share.
- Primary Hard drive: recommended at least 250 GB Solid State Drive (SSD) for OS and software. Older HDDs with higher capacity will work, but will be slower and likely to fail sooner than SSDs.
- MS Windows **64 bit operating system**. 32 bit operating system is not recommended as it is not compatible with SolidWorks which is used for Drawing & Design.

Note for MacBooks

SolidWorks does not run natively in MacOS and virtual environments such as Parallels or VirtualBox are difficult to set up and keep stable. If you have a MacBook, it will need to be Dual-Boot with a Windows OS installed, so that SolidWorks can access the GPU directly. This would be an additional cost as you would need to purchase a Windows OS license.

Microsoft Office 365 is available for download free for UCT students who already have a laptop meeting the required specifications.

Tablets / Chromebooks/ Netbooks

Tablets running Android OS or MacOS will not be able to run the CAD software at all. Chromebooks (or notebooks with cheaper Celeron processors) will not have sufficient computing power to run the CAD software. Please do NOT buy a tablet, Chromebook or Netbook as your primary computing device.

Chemical Engineering

Each student entering chemical engineering studies at UCT will be required to have a laptop for use during class sessions as well as after hours. The details of the minimum specifications are:

- Intel Core i5 (or AMD Ryzen 5 or 7)
- 8 GB RAM
- 1-2+ hour battery life
- IEEE 802.11 wireless
- Microsoft Windows 10 (Windows 11 ready)

Students will be able to purchase a laptop with these specifications at a significantly reduced price from the national Student Technology Programme (<http://www.stp.ac.za>). Microsoft Office 365 and McAfee antivirus are available for download for free for UCT students who already have a laptop meeting the required specifications.

Students who are bursary holders should inform their sponsors of this requirement.

First year students receiving NSFAS financial aid will be provided with a laptop.

In addition to the above, students are required during the initial weeks in their first year of their study to purchase the following:

1. A scientific calculator
2. Laboratory glasses
3. Laboratory goggles

Construction, Economics and Management

First year Construction Studies Students (EB015) require a laptop with the following minimum specifications:

- At least Intel i5 CPU or AMD Ryzen 5
- At least 8GB of RAM (more is better if the memory is shared with the graphics card)
- 15-inch screen

First year Property Studies Students (EB017) require a laptop with the following minimum specifications:

- At least Intel i5 CPU or AMD Ryzen 5
- At least 8GB of RAM (more is better if the memory is shared with the graphics card)
- 15-inch screen

Electrical Engineering

Electrical Engineering first year students should purchase a laptop that they can use throughout the degree. Students will begin using CAD (SolidWorks) in their first year and in later years will build more complex designs and computing tasks that will require more computing and graphics capability.

- At least Intel i5 CPU or AMD Ryzen 5
- At least 8GB of RAM (more is better if the memory is shared with the graphics card)
- 15-inch or larger screen
- 2+ hour battery life
- WiFi capable
- The usual USB ports
- Ideally, an independent GPU (graphics card) such as Nvidia Geforce or AMD

Radeon is recommended. However, integrated Intel Graphics will suffice if the machine has more RAM that it can share.

- Primary Hard drive: recommended at least 250 GB Solid State Drive (SSD) for OS and software. Older HDDs with higher capacity will work, but will be slower and likely to fail sooner than SSDs.
- MS Windows **64 bit operating system**. 32 bit operating system is not recommended as it is not compatible with SolidWorks which is used for Drawing & Design.

Note for MacBooks

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Tablets / Chromebooks/ Netbooks

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Civil Engineering

First year Civil Engineering students require a laptop with the following minimum specifications:

- 8GB RAM
- 256GB Solid State Drive (SSD)