



2022

## Laptop requirement for first-year chemical engineering students

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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 listed overleaf.

- 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.

The laptops acquired for 1<sup>st</sup> year chemical engineering are to be used throughout the four years of the degree. The specifications have been chosen so that they will be able to handle all the computing requirements in the senior years.

The undergraduate curriculum in chemical engineering at UCT has been extensively revised. In designing the new programme the Department drew on the latest educational and pedagogical innovations. A key part of this involves appropriate use of technology; working towards developing the kinds of graduates that are needed for 21<sup>st</sup> century engineering.

Students will use their laptops in the following ways:

- Simulations of chemical engineering problems and solving design projects using Microsoft Excel (in first year), Scilab and COCO simulator.
- Online quizzes and tests in class.
- Development of good writing skills with frequent written tasks requiring polishing and editing.
- Frequent download of materials from the course website and participation in online Q&A on this website.
- Regular use of email for receiving announcements and communicating with lecturers.
- Learning efficient typing (all first-year students will be required to build a basic level of touch typing proficiency, to allow for efficient production of written documents thereafter). During the holidays you can start practising at any free online typing tutor you can find – we have found Rapid Typing fairly good for learning and practising.
- In the final year (4<sup>th</sup> year), simulations using Chemical Engineering software such as Aspen Plus and Superpro Designer.

## Minimum specifications of required laptop

Intel Core ~~i3 (i5 if you can afford it)~~5 (or AMD Ryzen 5 or 7), 8 GB RAM (4 GB RAM is possible but may require an upgrade to 8 GB after 3<sup>rd</sup> year for use in your final year to run ASPEN simulation package.); ~~more RAM & i3 is better than less RAM & i5~~

Go for the longest battery life that you can afford. Machines with solid state drives have much longer battery life than machines with mechanical parts (e.g. disk drives and DVD drives) and also weigh much less. For SSD drives, minimum of 240 GB, 480 GB recommended.

FHD (Full High Definition) screen is recommended but not essential.

Note: an entry level machine (Intel Core i3, 4/8 GB RAM will get to 3<sup>rd</sup> year easily but that for applications in final year we recommend a higher spec (Intel Core ~~i3~~5, 8 GB RAM minimum). You may want to plan to upgrade or replace your machine for final year rather than to buy an advanced machine now.

IEEE 802.11 wireless

Microsoft Windows 10 (Windows 11 ready)

We discourage Apple Mac. Users running MacOS will have partition their hard drive and get virtual desktop software:

- VirtualBox: <https://www.virtualbox.org/>  
This is the recommended installation for MacOS users to run some of the Windows-specific software. You need to install Windows in the virtual box, Windows ~~10~~7 is recommended.

For further queries please email:

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