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Dear Sponsor

### **THE ACQUISITION OF PERSONAL COMPUTERS AND POCKET CALCULATORS**

The Department of Chemical Engineering prescribes access to a personal computer as a requirement for all students from the 2<sup>nd</sup> semester of the first year.

It will be appreciated if you could consider helping your bursar(s) in the acquisition of their own computers. In order to make the useful life of the computer as long as possible, it is strongly advised to purchase equipment that can easily be upgraded. Also, with the current price structure of laptop computers, it is strongly advisable for students to rather purchase a laptop computer.

The minimum prescribed configuration for a **personal computer/laptop** is:

#### **Apparatus:**

- IBM compatible personal computer (Intel mother board or Intel Celeron mother board). In the case of a Laptop Computer, ensure that it is 802.11a/b/g-enabled for wireless communication and that it is also Bluetooth-enabled.
- At least 2 GB RAM Memory
- Hard Disk Drive (320 - 500 GB)
- SVGA-graphics card and monitor
- Sufficient USB ports (e.g. 4) for printer & mouse & flash disk (Alternative: 1 x serial- and 1 x parallel port (printer port) and 2 USB-ports)
- 16 x DVD Multi Writer (with read and write capability)
- Keyboard
- Mouse
- 2 - 4 GB USB Memory Stick
- Printer

#### **Software:**

- At least the Windows 7 operating system. Please note that the Windows 8 operating system is current.
- Word processing, Spreadsheet & Presentation combination (eg. MS Office or Office 365, but there is a strong drive to use open access software, e.g. the Open Office suite of software)

#### **Pocket calculator:**

For some modules of the first year, the only prescribed pocket calculator is a non-programmable calculator in the Sharp-DL-range for use in tests and exams where programmable devices are not allowed.

With the advent of smart phones and tablets, a recommendation regarding programmable pocket calculators is difficult. It is recommended that students follow market trends and only purchase programmable pocket calculators and the like, once they are sure they know what they need.

Your assistance is appreciated.

UNIVERSITY OF PRETORIA  
DEPARTMENT OF CHEMICAL ENGINEERING  
**PURCHASING OF PERSONAL COMPUTERS (2015)**

When purchasing a personal computer, the following should be considered:

**Minimum configuration:**

An IBM-compatible computer with an Intel or Intel Celeron mother board and Intel Core CPU. (2 GHz and higher clock speed) with a minimum of 2-4 GB RAM memory and:

- Hard Disk Drive (320 - 500 GB)
- SVGA-graphics card and monitor
- Sufficient (e.g. 4) USB ports for printer & mouse & flash disk (Alternative: 1 x serial- and 1 x parallel port (printer port) and 2 USB-ports)
- DVD Multi Write drive with read and write capability.
- Keyboard
- Mouse
- 2 - 4 GB USB Memory Stick
- Printer

In the case of a Laptop Computer, ensure that, in addition to the specification above, it is 802.11 a/b/g-enabled for wireless communication and that it is also Bluetooth-enabled. It is always best to purchase the latest equipment within your budget. Always ensure that the system is expandable and upgradeable, ie that additional memory can be added as the need arises and that sufficient space is available for addition of eg. a DVD-writer.

It is imperative that the basic operating system software (including manuals and/or DVD's) be purchased with the computer. The current operating system is MS Windows 8, but MS Windows 7 is fully acceptable. Please ensure that the quoted price for the PC includes a valid licence for the operating system and any other software uploaded on the system.

Expansion of the abovementioned basic configuration will depend on own requirements and availability of funds and may include the following:

- (i) Mother board with a faster clock speed (be careful for processors other than Intel)
- (ii) Larger hard disk drive (make sure that the read/write speed is high enough. (Minimum: 14 ms). LG, Samsung, Seagate, Western Digital, TEAC, CONNER are reliable brand names.
- (iii) Sound card and loudspeakers – usually part of the standard configuration
- (iv) Graphics card with 3D-capability.
- (v) Additional RAM-memory – probably the first additional requirement (upgrading from 2GB RAM)
- (vi) DVD-writer with accompanying software and ability to read/write CD's as well.
- (vii) An almost standard required accessory would be a USB-“Memory Stick”. (with 2GB and higher storage capacity)
- (viii) Depending on the quality of printing required, and the available budget, one of the following can be considered:
  - Ink jet printer – Typical Hewlett-Packard Thinkjetrange, also Epson and Canon. (Make sure of the cost of replacement of ink cartridges – running cost of the printer)
  - Laser printer – Typically Hewlett-Packard Laserjet-range

**SUPPLIERS:**

There are many suppliers in Pretoria. Competition is strong – always ensure that you purchase from a reputable dealer who will also be able to provide efficient after-sales support. Official suppliers to UP are presently: Createk Systems CC and Pinnacle.

**SOFTWARE:**

Most suppliers offer software to bona fide students at special rates. Make sure that you enquire about these possibilities.

The following software is used:

- A combination package like MS Office (latest version is MS Office 2013 for 1 user or MS Office 365 for several users) comprising of MS Word, MS Excel and MS Powerpoint. Please take note that Open Access software can also be downloaded at no cost, e.g. the Open Office suite of software.
- Programming language: The current Open Access Software suite, Python, is the medium of instruction for programming purposes, replacing Octave. Matlab (The Mathworks), a licenced software package can be obtained by the local agents at a special tariff for students, but is not a compulsory requirement.