

# Cost Per Student Use for a MicroLab Workstation



Cost per student use is a useful tool to justify laboratory equipment expenditures. MicroLab's high resolution, multiple measurement capability make it a highly cost-effective alternative to traditional single-function instruments.

Most colleges and universities have student computer fees which can provide laboratory computers. Since data acquisition and graphing do not require the latest computer, many MicroLab users obtain their lab computers at no cost as they are cycled out of the library or campus computer labs. MicroLab's software site license permits free download of software to student and laboratory computers and campus networks.



The table below shows calculation of cost per-student, per-experiment for a MicroLab workstation. The MicroLab FS-522-C general chemistry package with sensors is used as an example. This package will make almost every instrumental measurement needed in general chemistry. The FS-522 carries a five year warranty, with the expectation that its lifetime will be at least seven years. This table also compares cost per-student use for a Spec-20 and a pH meter, each used two lab periods per term.

**MicroLab FS-522 "Comprehensive" Package**

---

MicroLab FS-522, Power Pack, USB cable, and Software  
Sensors for...

- Temperature • Pressure • Voltage • pH • Drop Counter & Drop Dispenser • **FASTspec™** Scanning Spectrophotometer 360 - 940 nm • Absorbance • Transmission • Fluorescence • Turbidity •

The calculations in this table presume 24 students per lab; two students per work station; and about 2/3 of the experiments per semester involving computer data acquisition. Calculations are presented for a small college enrolling 96 students in the lab course with one laboratory used four lab periods per week, and for a university enrolling 1200 students in the lab course and with five laboratories, each used ten lab periods per week.

Assuming a typical laboratory material fee of \$19/semester, the per-student cost for the MicroLab Workstation is about half of the expendable chemical/glassware fee at the small college, and about 1/5 of this cost at the university. MicroLab is far more cost-effective than traditional single function instruments.

	Small College			University		
Course enrollment/semester	96			1200		
Students/lab section	24			24		
Number of lab sections	4			50		
Number of lab rooms	1			5		
Lab sections/room	4			10		
Students served per lab station per semester - Two students/station.	8			20		
Product useful lifetime (7 years)	14 semesters			14 semesters		
Student-semesters of use per lab station over a seven year equipment lifetime.	112			280		
	<b>MicroLab</b>	Spec-20	pH Meter	<b>MicroLab</b>	Spec-20	pH Meter
Equipment & software cost/station	<b>\$ 1149</b>	\$ 1700	\$ 300	<b>\$ 1149</b>	\$ 1700	\$ 300
Cost/student per semester	<b>\$10.26</b>	\$15.18	\$2.68	<b>\$ 4.10</b>	\$ 6.07	\$ 1.07
Weeks use/14 week semester	<b>9</b>	2	2	<b>9</b>	2	2
<b>Cost per lab period per student</b>	<b>\$ 1.14</b>	\$ 7.59	\$ 1.34	<b>\$ 0.46</b>	\$ 3.04	\$ 0.54