

**UNIVERSITY OF VIRGINIA**  
**ALL UNDERGRADUATE SCHOOLS EXCEPT ENGINEERING**

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**Definition of Technology Competency:**

The University of Virginia expects graduates of its College of Arts and Sciences and its undergraduate Schools of Architecture, Commerce, Education, and Nursing to know and be able to perform the following ten essential technology skills: setting up a personal computer; using basic operating system features; using a word processor to create a text document; using a graphics and/or artwork package to create illustrations, slides, or other image-based expressions of ideas; connecting a computer to a network; using the Internet to find information and resources; using a computer to communicate with others; using a spreadsheet to model simple processes or financial tables; using a database system to set up and access useful information; and using instructional materials to learn how to use new applications or features. (See the following web site for a full description of the competencies and the scoring guide used in the competency assessment process:

<http://www.web.virginia.edu/iaas2/public/reports/subject/competencies/computer.htm#standards>)

**Standards for Competency:**

A panel of independent evaluators assessed the technology skills of fourth-year undergraduates based on activities in each of the ten skill areas. Evaluators gave each student a score for each activity based on the four-point scale and a composite score was computed by averaging the individual scores. Overall competency is demonstrated by an overall score of 3 or 4. See the web site above for a full description of the 4-point scale.

**Description of Methodology Used to Gather Evidence of Technology Competency:**

Every three years, the Office of Institutional Assessment and Studies will choose a random sample of not fewer than 5% of the fourth-year class from the four undergraduate schools. A sufficient number of students will be asked to participate so that results may be reported by school if possible. Students report to computer labs at designated times to participate in assessment exercises covering the computer skills. Using the detailed assessment guide, evaluators (trained graduate students in computer science and related fields) monitor and record a score for each student's performance on assigned tasks. The table below provides a summary of the percent of answers for the ten essential skills.

<b>Results for spring 2002 assessment</b>	<b>All Schools Except Engineering</b> Percent of answers on the ten essential skills	<b>College of Arts &amp; Sciences Only</b> Percent of answers on the ten essential skills
Strong competence	90.5	90.0
Reasonable competence	3.86	3.90
Some competence	3.52	3.75
Little competence	2.12	2.35

See the following web site for a complete tabulation of the assessment results, including results for all ten essential skills and their various sub-parts:

<http://www.web.virginia.edu/iaas2/public/reports/subject/competencies/2002/computertech.pdf>

**Summary:**

These results show that a very large percentage of UVa fourth-year undergraduates in the four schools listed possess and can use the computer technology skills essential to success in their educational programs. This finding is particularly significant in that these students are not required to complete courses in the area of computer technology, although they may take such courses as electives. In most cases, students are mastering these essential skills because the skills are needed for success in other courses in their programs, or they are learning the skills on their own.

**Computer Technology Assessment  
Results for the College of Arts and Sciences**

	Level of competence								Mean
	(1) Little		(2) Some		(3) Reasonable		(4) Strong		
	%	Count	%	Count	%	Count	%	Count	
Start Microsoft Powerpoint	1.0	1	0.0	0	4.1	4	94.9	92	3.93
Determine amount of space on hard drive	15.2	15	11.3	11	5.1	5	68.5	66	3.27
Delete a folder	1.0	1	3.0	3	3.1	3	92.9	90	3.88
Create a formatted document (word processing)	0.0	0	0.0	0	0.0	0	100.0	97	4.00
Create a document with images, slides, or a diagram	0.0	0	5.0	5	6.1	6	89.0	86	3.84
Internet: find world news	0.0	0	0.0	0	0.0	0	100.0	97	4.00
Internet: find weather forecast	0.0	0	0.0	0	0.0	0	100.0	97	4.00
Internet: use search engine	0.0	0	0.0	0	4.0	4	96.0	93	3.96
Internet: use search engine	0.0	0	0.0	0	2.0	2	98.0	95	3.98
Prepare email message	0.0	0	0.0	0	0.0	0	100.0	97	4.00
Add an email attachment	0.0	0	0.0	0	0.0	0	100.0	97	4.00
Create a spreadsheet	5.0	5	24.2	24	11.4	11	59.3	58	3.25
Use help in Internet Explorer	4.0	4	6.2	6	10.4	10	79.5	77	3.65
Use help in an unfamiliar program	6.0	6	2.0	2	8.0	8	84.0	81	3.70
<b>Overall Score on Tasks</b>									<b>3.82</b>

	Incorrect		Correct	
	%	Count	%	Count
What would you do to change the time-zone setting for your computer?	5.0	5	95.0	92
What would you do to change the screen settings (e.g., resolution or color)?	10.9	11	89.1	86
When you set up a computer, you must connect the computer to its peripherals using different kinds of cables. Which connector pictured here is most likely to be used to connect: a printer using a parallel port?	23.9	23	76.1	74
... a scanner, Zip drive, printer, or anything else that uses a USB port?	43.5	42	56.5	55
... a computer monitor?	27.8	27	72.2	70
... a mouse?	14.0	14	86.0	83
... a keyboard?	23.1	22	76.9	75
Which port looks like it is most likely to be used to connect a desktop computer to a high-speed network?	20.1	19	79.9	78
Which connector looks like it is most likely to be used to connect a desktop computer to a modem?	8.0	8	92.0	89
What is an IP address?	38.6	37	61.4	60
What do you need to know to configure a new email account on an Internet Service Provider?	59.9	58	40.1	39
In a database system, what are groups of records called?	83.3	81	16.7	16
In a database, what is a query?	56.4	55	43.6	42
What can a database do, that a spreadsheet cannot?	84.4	82	15.6	15
What are the common usages of statistical software (SPSS, SAS)?	49.1	48	50.9	49

	Never		Once or a few times		More than a few times	
	%	Count	%	Count	%	Count
	How often have you used a database system?	63.6	62	23.9	23	12.5
How often have you used a PDA?	54.2	53	22.6	22	23.2	23

**Computer Technology Assessment  
Results for All Schools except Engineering**

	Level of competence								Mean
	(1) Little		(2) Some		(3) Reasonable		(4) Strong		
	%	Count	%	Count	%	Count	%	Count	
Start Microsoft Powerpoint	<b>0.8</b>	1	<b>0.0</b>	0	<b>3.4</b>	4	<b>95.7</b>	110	<b>3.94</b>
Determine amount of space on hard drive	<b>14.1</b>	16	<b>10.9</b>	12	<b>5.0</b>	6	<b>70.0</b>	80	<b>3.31</b>
Delete a folder	<b>0.8</b>	1	<b>2.5</b>	3	<b>3.3</b>	4	<b>93.3</b>	107	<b>3.89</b>
Create a formatted document (word processing)	<b>0.0</b>	0	<b>0.0</b>	0	<b>1.3</b>	1	<b>98.7</b>	114	<b>3.99</b>
Create a document with images, slides, or a diagram	<b>0.0</b>	0	<b>4.9</b>	6	<b>5.1</b>	6	<b>90.0</b>	103	<b>3.85</b>
Internet: find world news	<b>0.0</b>	0	<b>0.0</b>	0	<b>0.0</b>	0	<b>100.0</b>	115	<b>4.00</b>
Internet: find weather forecast	<b>0.0</b>	0	<b>0.0</b>	0	<b>0.0</b>	0	<b>100.0</b>	115	<b>4.00</b>
Internet: use search engine	<b>0.0</b>	0	<b>0.0</b>	0	<b>4.8</b>	5	<b>95.2</b>	110	<b>3.95</b>
Internet: use search engine	<b>0.0</b>	0	<b>0.0</b>	0	<b>1.7</b>	2	<b>98.3</b>	113	<b>3.98</b>
Prepare email message	<b>0.0</b>	0	<b>0.0</b>	0	<b>0.0</b>	0	<b>100.0</b>	115	<b>4.00</b>
Add an email attachment	<b>0.0</b>	0	<b>0.0</b>	0	<b>0.0</b>	0	<b>100.0</b>	115	<b>4.00</b>
Create a spreadsheet	<b>4.9</b>	6	<b>22.6</b>	26	<b>10.4</b>	12	<b>62.2</b>	71	<b>3.30</b>
Use help in Internet Explorer	<b>3.3</b>	4	<b>6.6</b>	8	<b>10.1</b>	12	<b>79.9</b>	92	<b>3.67</b>
Use help in an unfamiliar program	<b>5.7</b>	7	<b>1.7</b>	2	<b>8.8</b>	10	<b>83.8</b>	96	<b>3.71</b>
<b>Overall Score on Tasks</b>									<b>3.83</b>

	Incorrect		Correct	
	%	Count	%	Count
What would you do to change the time-zone setting for your computer?	<b>4.2</b>	5	<b>95.8</b>	110
What would you do to change the screen settings (e.g., resolution or color)?	<b>9.2</b>	11	<b>90.8</b>	104
When you set up a computer, you must connect the computer to its peripherals using different kinds of cables. Which connector pictured here is most likely to be used to connect: a printer using a parallel port?	<b>24.3</b>	28	<b>75.7</b>	87
... a scanner, Zip drive, printer, or anything else that uses a USB port?	<b>46.3</b>	53	<b>53.7</b>	62
... a computer monitor?	<b>31.6</b>	36	<b>68.4</b>	79
... a mouse?	<b>12.5</b>	14	<b>87.5</b>	101
... a keyboard?	<b>23.5</b>	27	<b>76.5</b>	88
Which port looks like it is most likely to be used to connect a desktop computer to a high-speed network?	<b>18.9</b>	22	<b>81.1</b>	93
Which connector looks like it is most likely to be used to connect a desktop computer to a modem?	<b>7.5</b>	9	<b>92.5</b>	106
What is an IP address?	<b>37.2</b>	43	<b>62.8</b>	72
What do you need to know to configure a new email account on an Internet Service Provider?	<b>64.2</b>	74	<b>35.8</b>	41
In a database system, what are groups of records called?	<b>78.4</b>	90	<b>21.6</b>	25
In a database, what is a query?	<b>49.6</b>	57	<b>50.4</b>	58
What can a database do, that a spreadsheet cannot?	<b>82.1</b>	94	<b>17.9</b>	21
What are the common usages of statistical software (SPSS, SAS)?	<b>47.7</b>	55	<b>52.3</b>	60

	Never		Once or a few times		More than a few times	
	%	Count	%	Count	%	Count
	How often have you used a database system?	<b>57.7</b>	66	<b>27.0</b>	31	<b>15.3</b>
How often have you used a PDA?	<b>52.4</b>	60	<b>22.6</b>	26	<b>25.0</b>	29