

UTC Participant CAT Means 2011 and 2012

Q#	Skill Assessed by CAT Question	Freshmen Mean	Senior Mean	Mean Difference
Q1	Summarize the pattern of results in a graph without making inappropriate inferences	0.542	0.650	.108*
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.763	0.844	.081
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.506	0.982	.476**
Q4	Identify additional information needed to evaluate a hypothesis	0.633	1.163	.530**
Q5	Evaluate whether spurious information strongly supports a hypothesis	0.469	0.605	.136**
Q6	Provide alternative explanations for spurious associations	1.062	1.385	.323**
Q7	Identify additional information needed to evaluate a hypothesis	0.607	0.660	.053
Q8	Determine whether an invited inference is supported by specific information	0.382	0.610	.228**
Q9	Provide relevant alternative interpretations for a specific set of results	0.612	0.815	.203**
Q10	Separate relevant from irrelevant information when solving a real-world problem	2.886	3.065	.179
Q11	Used and apply relevant information to evaluate a problem	0.927	1.035	.108
Q12	Use basic mathematical skills to help solve a real-world problem	0.674	0.798	.124**
Q13	Identify suitable solutions for a real-world problem using relevant information	0.615	0.945	.330**
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.432	1.745	.313
Q15	Explain how changes in a real-world problem situation might affect the solution	0.538	0.802	.264**
	TOTAL	12.585	16.088	3.503**

UTC Participant CAT Means Compared to National CAT Means 2011 and 2012

Q#	Skill Assessed by CAT Question	UTCFR Mean	NATFR Mean	ES/ PD	UTCSR Mean	NATSR Mean	ES/ PD
Q1	Summarize the pattern of results in a graph without making inappropriate inferences	0.54	0.58		0.65	0.67	
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.76	0.69		0.84	1.21	-.34***
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.51	0.67	-.19*	0.98	1.35	-.35***
Q4	Identify additional information needed to evaluate a hypothesis	0.63	0.96	-.32***	1.16	1.41	-.20**
Q5	Evaluate whether spurious information strongly supports a hypothesis	0.47	0.52		0.61	0.73	-.27***
Q6	Provide alternative explanations for spurious associations	1.06	1.04		1.39	1.56	-.20**
Q7	Identify additional information needed to evaluate a hypothesis	0.61	0.57		0.66	0.82	-.25**
Q8	Determine whether an invited inference is supported by specific information	0.38	0.46	-.16*	0.61	0.68	-.16*
Q9	Provide relevant alternative interpretations for a specific set of results	0.61	0.70		0.82	0.93	-.16*
Q10	Separate relevant from irrelevant information when solving a real-world problem	2.89	3.01		3.07	3.14	
Q11	Used and apply relevant information to evaluate a problem	0.93	0.88		1.04	1.11	
Q12	Use basic mathematical skills to help solve a real-world problem	0.67	0.75	-.17*	0.80	0.82	
Q13	Identify suitable solutions for a real-world problem using relevant information	0.61	0.75	-.16*	0.95	1.18	-.25**
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.43	1.65		1.75	2.29	-.30***
Q15	Explain how changes in a real-world problem situation might affect the solution	0.54	0.52		0.80	1.15	-.34***
	CAT TOTAL SCORE	12.58	13.66	-.22**	16.09	19.04	-.51***

ES = effect size (mean difference divided by pooled group standard deviation). 0.1-0.3 = small effect, 0.3-0.5 = moderate effect, >0.5 = large effect
*PD = probability of a difference. *p<.05 **p<.01 ***P<.001 (2-tailed)*

Senior CAT Means by College Compared to UTC and National Mean 2012

Q#	Skill Assessed by CAT Question	A&S Mean	COB Mean	ECS Mean	CHEPS Mean	UTC Mean	National Mean
Q1	Summarize the pattern of results in a graph without making inappropriate inferences	0.62	0.69	0.66	0.66	0.65	0.67
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.73	1.02	1.20	0.49	0.84	1.21
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.98	0.83	1.20	0.85	0.98	1.35
Q4	Identify additional information needed to evaluate a hypothesis	1.15	1.17	1.40	0.91	1.16	1.41
Q5	Evaluate whether spurious information strongly supports a hypothesis	0.60	0.64	0.77	0.38	0.61	0.73
Q6	Provide alternative explanations for spurious associations	1.39	1.36	1.58	1.21	1.39	1.56
Q7	Identify additional information needed to evaluate a hypothesis	0.65	0.71	0.77	0.55	0.66	0.82
Q8	Determine whether an invited inference is supported by specific information	0.62	0.52	0.74	0.59	0.61	0.68
Q9	Provide relevant alternative interpretations for a specific set of results	0.81	0.81	0.97	0.66	0.82	0.93
Q10	Separate relevant from irrelevant information when solving a real-world problem	3.07	3.05	3.00	3.10	3.07	3.14
Q11	Used and apply relevant information to evaluate a problem	0.96	1.00	1.14	1.17	1.04	1.11
Q12	Use basic mathematical skills to help solve a real-world problem	0.80	0.81	0.89	0.69	0.80	0.82
Q13	Identify suitable solutions for a real-world problem using relevant information	1.04	0.83	1.06	0.66	0.95	1.18
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.69	1.98	1.77	1.59	1.75	2.29
Q15	Explain how changes in a real-world problem situation might affect the solution	0.82	0.86	1.02	0.45	0.80	1.15
	TOTAL	15.90	16.27	18.14	13.94	16.09	19.04

A&S=Arts and Sciences, COB=Business, ECS=Engineering and Computer Science, CHEPS=Health, Education, and Professional Studies

PPE Critical Thinking Assessments across UTC Colleges 2010-2011 and 2011-2012

PPE Critical Thinking Assessments	2010-2011	2011-2012	Difference
Percent UTC graduating seniors <i>proficient</i> at Reading-Critical Thinking Skill Level 3	9.49%	7.03%	-2.46%
College of Arts and Sciences	14.29	9.34	-4.95
College of Business	4.78	4.07	-0.71
College of Health, Education, and Professional Studies	5.29	5.86	0.57
College of Engineering and Computer Science	10.98	8.33	-2.65
Unknown College	6.93	6.32	-0.61
Percent UTC graduating seniors <i>NOT proficient</i> at Reading-Critical Thinking Skill Level 3	74.24%	78.83%	4.59%
College of Arts and Sciences	67.32	76.43	9.11
College of Business	79.68	81.71	2.03
College of Health, Education, and Professional Studies	80.77	81.69	0.92
College of Engineering and Computer Science	69.51	77.78	8.27
Unknown College	80.20	77.37	-2.83
UTC Critical Thinking Mean Score	112.93	111.84	-1.09
College of Arts and Sciences	113.76	112.12	-1.09
College of Business	112.11	111.21	-0.90
College of Health, Education, and Professional Studies	112.21	112.03	-0.18
College of Engineering and Computer Science	113.71	112.03	-1.68
Unknown College	112.25	111.79	-0.46
Critical Thinking Percent Institutions below UTC	39%	19%	-20%
College of Arts and Sciences	60	40	-20
College of Business	39	19	-20
College of Health, Education, and Professional Studies	39	40	1
College of Engineering and Computer Science	60	40	-20
Unknown College	39	19	-20
Number of UTC Graduating Senior PPE Participants	1254	1252	-2
College of Arts and Sciences	511	471	-40
College of Business	251	246	-5
College of Health, Education, and Professional Studies	208	273	65
College of Engineering and Computer Science	82	72	-10
Unknown College	202	190	-12

NSSE/FSSE Comparisons of UTC Faculty and Student Perceptions of Student Engagement 2011 and 2012

Extent coursework emphasizes the following mental activities:	Division/ Year	FSSE % 2011 (n=133)	NSSE % 2011 (n=779)	%DIFF Students	FSSE % 2012 (n=166)	NSSE % 2012 (n=814)	%DIFF Students
Memorizing facts, ideas, or methods from course and reading	LD/FY	28	74	46	33	77	44
	UD/SR	22	69	47	32	67	35
Synthesizing and organizing ideas, information, or experiences	LD/FY	83	72	-11	82	72	-10
	UD/SR	90	72	-18	85	72	-13
Applying theories or concepts to practical problems or in new situations	LD/FY	78	66	-12	79	69	-10
	UD/SR	96	79	-17	79	78	-1
Analyzing the basic elements of an idea, experience, or theory	LD/FY	91	77	-14	91	77	-14
	UD/SR	90	83	-7	85	85	0
Making judgments about the value of information, arguments, or methods	LD/FY	72	69	-3	71	68	-3
	UD/SR	84	76	-8	72	72	0
Extent course structure (faculty)/college experience (students) contributed to knowledge, skills, and personal development in the following areas:	Division/ Year	FSSE % 2011 (n=133)	NSSE % 2011 (n=779)	%DIFF Students	FSSE % 2012 (n=166)	NSSE % 2012 (n=814)	%DIFF Students
Thinking critically and analytically	LD/FY	89	82	-7	95	74	-21
	UD/SR	98	84	-14	94	85	-9
Solving complex real-world problems	LD/FY	52	53	1	47	46	-1
	UD/SR	70	56	-14	68	59	-9

FSSE % and NSSE %=percentages of respondents who indicated “very much” and “quite a bit”

Division: LD=lower division classes (mostly first-year and sophomore students), UD=upper division classes (mostly junior and senior students)

Year: FY=first-year students; SR=senior students

2011 response rates: faculty (133/434 invited to participate) = 31%, students (779/3882 invited to participate) = 20%

2012 response rates: faculty (166/473 invited to participate) = 35%, students (814/5970 invited to participate) = 14%

NSSE Student Perceptions of Engagement Compared to National Means 2011-2012

During the current school year, how much has your coursework emphasized the following mental activities?	Year	2011 UTC Mean	2011 NAT Mean	ES/PD**	2012 UTC Mean	2012 NAT Mean	ES/PD**
Memorizing facts, ideas, or methods from course and reading	FY	2.97	2.95	.02	3.08	2.96	.13*
	SR	2.89	2.80	.10*	2.89	2.80	.10*
Synthesizing and organizing ideas, information, or experiences	FY	2.97	2.95	.02	2.96	2.99	-.04
	SR	3.04	3.11	-.08	3.02	3.14	-.15**
Applying theories or concepts to practical problems or in new situations	FY	2.88	3.09	-.25***	2.90	3.11	-.24***
	SR	3.17	3.25	-.10*	3.20	3.28	-.11*
Analyzing the basic elements of an idea, experience, or theory	FY	3.03	3.17	-.18**	3.09	3.20	-.14*
	SR	3.24	3.31	-.09	3.28	3.33	-.06
Making judgments about the value of information, arguments, or methods	FY	2.89	2.95	-.07	2.93	2.97	-.05
	SR	3.03	3.05	-.02	3.05	3.09	-.04
To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?	Year	2011 UTC Mean	2011 NAT Mean	ES/PD**	2012 UTC Mean	2012 NAT Mean	ES/PD**
Thinking critically and analytically	FY	3.18	3.25	-.08	3.03	3.27	-.31***
	SR	3.26	3.37	-.15**	3.34	3.40	-.08
Solving complex real-world problems	FY	2.57	2.73	-.17*	2.46	2.74	-.30***
	SR	2.63	2.84	-.22***	2.69	2.87	-.19***

1=Very Little, 2=Some, 3=Quite a Bit, 4=Very Much

Year: FY=first-year students, SR=senior students

*** ES = effect size (mean difference divided by pooled group standard deviation). 0.1-0.3 = small effect, 0.3-0.5 = moderate effect, >0.5 = large effect*

*PD = probability of a difference. * p<.05 **p<.01 ***P<.001 (2-tailed)*