

2014 CS Program Assessment

Assessment2014FrVsSr - Microsoft Excel

	B	C	D	E	F	G	H	I	J
	Freshman	Freshman	Freshman	Senior	Senior	Senior	Difference	Difference	Difference
	12/16/2013	10/27/2014	Average	5/6/2013	11/11/2014	Average	B -> E	C -> F	Average
N	31	31	62	15	16	31			
Average Score	15.12%	15.47%	15.29%	60.90%	59.81%	60.34%	45.78%	44.34%	45.04%
High Score	58.00%	34.00%	58.00%	86.50%	78.50%	86.50%	28.50%	44.50%	28.50%
Low Score	0.00%	1.00%	0.00%	32.00%	39.00%	32.00%	32.00%	38.00%	32.00%
1. Matching: Object-Oriented Programming	42.15%	39.99%	41.07%	85.33%	75.63%	80.32%	43.18%	35.64%	39.25%
class	70.97%	74.19%	72.58%	93.33%	100.00%	96.77%	22.36%	25.81%	24.19%
interface	9.68%	9.68%	9.68%	93.33%	37.50%	64.51%	83.65%	27.82%	54.84%
assignment operator	58.06%	41.94%	50.00%	73.33%	100.00%	87.10%	15.27%	58.06%	37.10%
object	38.71%	51.61%	45.16%	66.67%	75.00%	70.97%	27.96%	23.39%	25.81%
constructor	22.58%	22.58%	22.58%	86.67%	37.50%	61.29%	64.09%	14.92%	38.71%
formal parameter	19.35%	22.58%	20.97%	66.67%	50.00%	58.07%	47.32%	27.42%	37.10%
method	41.94%	35.48%	38.71%	86.67%	81.25%	83.87%	44.73%	45.77%	45.16%
java keyword	48.39%	35.48%	41.94%	93.33%	81.25%	87.10%	44.94%	45.77%	45.16%
equivalence operator	54.84%	61.29%	58.06%	93.33%	93.75%	93.55%	38.49%	32.46%	35.48%
java keyword	38.71%	45.16%	41.94%	100.00%	100.00%	100.00%	61.29%	54.84%	58.06%
2. Matching: Programming Languages	8.01%	9.98%	9.00%	63.33%	68.13%	65.80%	55.32%	58.14%	56.81%
ambiguity	9.68%	9.68%	9.68%	80.00%	87.50%	83.87%	70.32%	77.82%	74.19%
grammar	19.35%	22.58%	20.97%	66.67%	75.00%	70.97%	47.32%	52.42%	50.00%
lexeme	9.68%	12.90%	11.29%	93.33%	81.25%	87.10%	83.65%	68.35%	75.80%
operator precedence	12.90%	22.58%	17.74%	73.33%	81.25%	77.42%	60.43%	58.67%	59.68%
lexical analyzer	0.00%	3.23%	1.61%	53.33%	87.50%	70.97%	53.33%	84.27%	69.35%
EBNF	0.00%	3.23%	1.61%	40.00%	43.75%	41.94%	40.00%	40.52%	40.32%
functional programming language	6.45%	0.00%	3.23%	40.00%	56.25%	48.39%	33.55%	56.25%	45.16%

Ready | 100% | 10:02 AM 12/9/2014

CS Program Internal Review 2014

- First USI CS Program Review in 2011
- USI Recommendations given in 2012
- ACM Computer Science Curricula 2013
 - Over 500 pages
 - Includes exemplars
- USI CS Program Review in 2015

Computer Science Curricula 2013

Curriculum Guidelines for
Undergraduate Degree Programs
in Computer Science

December 20, 2013

The Joint Task Force on Computing Curricula
Association for Computing Machinery (ACM)
IEEE Computer Society

A Cooperative Project of



Association for
Computing Machinery

Advancing Computing as a Science & Profession



ACM CS2013 Recommendations

- 18 Knowledge Areas (KAs)
- 160 Knowledge Units (KUs)
- 165 Tier-1 Lecture Hours (100% ideal)
- 143 Tier-2 Lecture Hours (over 70% ideal)
- Optional Lecture Hours (program specific)

Plotting Lecture Hours

Program Review										
Computer Science										
February, 2014										
USI CORE CS COURSES										
ACM CS2001										
USI Course										
CS2013										
Description										
USI Course										
CS111o										
CS258										
Total										
Recommended										
Deficiencies										
Tier 1										
Tier 2										
Elective										
Tier 1										
Tier2										
Elective										
Tier 1										
Tier 2										
Tier 1										
Tier 2										
DS/DiscreteProbability				2	0	0	6	2	4	2
GV/FundamentalConcepts				0	0	0	2	1	2	1
HCI/Foundations				2	0	4	4		2	
PD/ParallelismFundamentals				1	0	0	2		1	
PD/ParallelDecomposition				0	0	0	1	3	1	3
PD/CommunicationAndCoordination				0	0	0	1	3	1	3
PD/ParallelAlgorithmsAnalysisAndProgramming				0	0	0		3		3
SF/CrossLayerCommunications				0	0	0	3		3	
SF/StateAndStateMachines				3	0	0	6		3	
SF/Parallelism				0	0	0	3		3	
SF/Evaluation				2	0	0	3		1	
SF/VirtualizationAndIsolation				0	1	0		2		1
SF/ReliabilityThroughRedundancy				0	0	0		2		2
Totals	24	9	2	144	128	323	165	143	21	15

USI CS Program Findings

- 18 Knowledge Areas (KAs)
- 160 Knowledge Units (KUs)
- 165 Tier-1 Lecture Hours (144 covered **87.2%**)
- 143 Tier-2 Lecture Hours (128 covered 89.5%)
- Optional Lecture Hours (323 hours)

Proposed Content Changes

- Add 4 hours of Discrete Probability to CS215
- Reevaluate ECE241 hours
- Add Graphics/Visualization project to CS358
- Add Human-Computer Interfacing to CS358
- Add Parallelism hours to CS365
- Add Parallel Programming to CS379
- Add Speed Evaluation to CS321
- Require CS458

Proposed USI CS Curriculum

- 18 Knowledge Areas (KAs)
- 160 Knowledge Units (KUs)
- 165 Tier-1 Lecture Hours (165 covered 100%)
- 143 Tier-2 Lecture Hours (127 covered 88.8%)
- Optional Lecture Hours (305 hours)