

TABLE 1. Planning Improvement Actions – Bachelor of Science in Computer Science
Fall 2009/Spring 2010

Planning Improvement actions																																																						
OUTCOME	METHODS/ANALYSIS/ACTIONS																																																					
(a) An ability to apply knowledge of mathematics, science, and engineering.	<p>METHODS</p> <p>The program outcomes are demonstrated by looking at the student achievement in coursework and exam questions connected to the learning outcomes. This outcome is supported by various required courses and sample results are presented below in the RESULTS/EVIDENCE-DATA.</p> <p>In addition, the Teacher Course Evaluation (TCE) an anonymous questionnaire distributed to the students in every course at the end of each semester, provide responses to questions directly related to the Program Outcomes.</p>																																																					
	<p>RESULTS/EVIDENCE DATA</p> <p>The connection between course outcomes and program outcomes has been made in the faculty evaluation of each course, which is a component of the course portfolio. Outcome (a) is evaluated based on the TCE results from CS-315 (Algorithm Design and Analysis). The results (the statistical means) of the student responses to the supplemental questions (indirect assessment) relevant to Outcome (a) for Fall 2009 and Spring 2010 are listed in the leftmost table below. Results from the final exam (FE) and programming projects (PA) for Spring 2010 are presented in the middle table and the distribution of the final grade is in the rightmost table.</p> <table border="1"> <thead> <tr> <th>TCE</th> <th>F 2009</th> <th>Sp 2010</th> <th>method</th> <th>Sp 2010</th> <th>Final Grade</th> <th>F 2009</th> <th>Sp 2010</th> </tr> </thead> <tbody> <tr> <td>Q37</td> <td>4.3</td> <td>4.2</td> <td>Q37</td> <td>FE</td> <td>80%</td> <td>A</td> <td>48%</td> <td>43%</td> </tr> <tr> <td>Q38</td> <td>4.3</td> <td>4.2</td> <td>Q38</td> <td>FE</td> <td>85%</td> <td>B</td> <td>24%</td> <td>33%</td> </tr> <tr> <td>Q39</td> <td>4.4</td> <td>4.4</td> <td>Q39</td> <td>FE</td> <td>85%</td> <td>C</td> <td>16%</td> <td>13%</td> </tr> <tr> <td>Q40</td> <td>3.9</td> <td>3.9</td> <td>Q40</td> <td>PA</td> <td>55%</td> <td>D</td> <td>0%</td> <td>3%</td> </tr> <tr> <td>Q41</td> <td>4.3</td> <td>4.0</td> <td>Ave</td> <td></td> <td>76%</td> <td>E</td> <td>12%</td> <td>7%</td> </tr> </tbody> </table> <p>Q37. Understand the limiting factors of resources such as time and space in algorithmic solutions.</p> <p>Q38. Understand how to approach the algorithm design and analysis.</p> <p>Q39. Understand basic algorithms and data structures and how to compare their quality.</p> <p>Q40. Understand how to experimentally analyze the performance of programs.</p> <p>Q41. Acquire or improve my ability to apply knowledge of computing and mathematics appropriate to the discipline.</p> <p>Note that Q41 is a paraphrase of Outcome (a).</p>	TCE	F 2009	Sp 2010	method	Sp 2010	Final Grade	F 2009	Sp 2010	Q37	4.3	4.2	Q37	FE	80%	A	48%	43%	Q38	4.3	4.2	Q38	FE	85%	B	24%	33%	Q39	4.4	4.4	Q39	FE	85%	C	16%	13%	Q40	3.9	3.9	Q40	PA	55%	D	0%	3%	Q41	4.3	4.0	Ave		76%	E	12%	7%
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<p>ANALYSIS</p> <p>The above cumulative results from the direct assessment methods (course assignments, the final exam and the final grades) and (indirect) from the TCE questionnaire consistently demonstrate that the students and the instructor met the benchmark for the course outcomes and - connected to them - Outcome (a). However, although the average performance was satisfactory (e.g., more than 70% students above 'C'), the course outcome related to the experimental running time analysis of algorithms (Q40) was below expectations.</p>																																																						
<p>IMPROVEMENT ACTIONS</p> <p>Put more stress on experimental analysis of programs: design and assign more tasks to assess the course outcome Q40.</p>																																																						