Soft Constraints

	Constraint	Formal Expression	Penalty/ Violation
0	Each TA should be funded (that is, they should teach at least one course)	∀ta:TA • instructs(ta,?,?)	50
1	TAs should get their first choice course	∀ta:TA, c:Course • prefers1(ta,c) → instructs(ta,c,?)	5
2	TAs should get their first or second choice course		10
3	TAs should get their first or second or third choice course		10
4	TAs should have all their labs in the same course	∀ta:TA, c:Course | instructs(ta,c,?) • ~∃c2:Course | c2≠c • instructs(ta,c2,?)	20
5	TAs should have all their labs in no more than 2 courses	∀ta:TA, c,c2:Course | c2≠c /\ instructs(ta,c,?) /\ instructs(ta,c2,?) • ~∃c3:Course | c3≠c /\ c3≠c2 • instructs(ta,c3,?)	35
6	TAs should not teach a lab for a course for which they don't know the subject matter	∀ta:TA, c:Course • instructs(ta,c,?) → knows(ta,c)	30
7	TAs should not teach two labs of distinct courses at the senior level		10
8	TAs should not teach more than one more lab than the TA that teaches the least number of labs.		25
9	TAs should all teach the same number of labs.		5
10	If the instructor requested particular TAs for his/her course, each of the lecture the instructor is teaching for that course should be taught by one of the requested TAs	∀i:Instructor, c:Course • (∃ ta:TA • prefers(i,c,ta)) → ∀ lec:Lecture, lab:Lab | instructs(i,c,lec) /\ has-lab(c,lec,lab) • instructs(ta,c,lab)	10