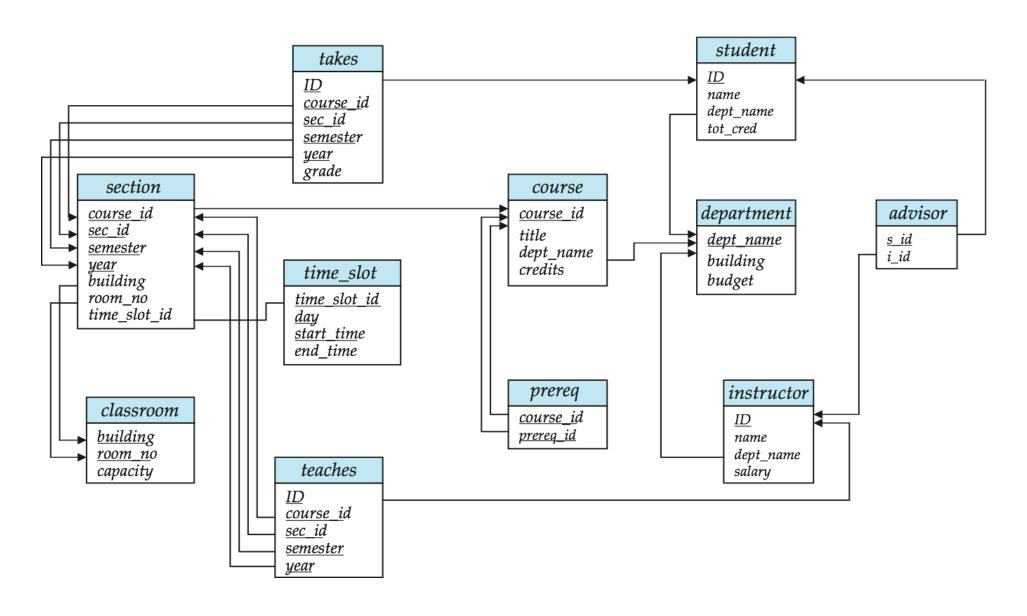
Schema Diagram for University Database



Instructor Relation

| ID | name | dept_name | salary |
|-------|------------|------------|---------------|
| 22222 | Einstein | Physics | 95000 |
| 12121 | Wu | Finance | 90000 |
| 32343 | El Said | History | 60000 |
| 45565 | Katz | Comp. Sci. | <i>7</i> 5000 |
| 98345 | Kim | Elec. Eng. | 80000 |
| 76766 | Crick | Biology | 72000 |
| 10101 | Srinivasan | Comp. Sci. | 65000 |
| 58583 | Califieri | History | 62000 |
| 83821 | Brandt | Comp. Sci. | 92000 |
| 15151 | Mozart | Music | 40000 |
| 33456 | Gold | Physics | 87000 |
| 76543 | Singh | Finance | 80000 |

| ID | name | dept_name | tot_cred |
|-------|----------|------------|----------|
| 00128 | Zhang | Comp. Sci. | 102 |
| 12345 | Shankar | Comp. Sci. | 32 |
| 19991 | Brandt | History | 80 |
| 23121 | Chavez | Finance | 110 |
| 44553 | Peltier | Physics | 56 |
| 45678 | Levy | Physics | 46 |
| 54321 | Williams | Comp. Sci. | 54 |
| 55739 | Sanchez | Music | 38 |
| 70557 | Snow | Physics | 0 |
| 76543 | Brown | Comp. Sci. | 58 |
| 76653 | Aoi | Elec. Eng. | 60 |
| 98765 | Bourikas | Elec. Eng. | 98 |
| 98988 | Tanaka | Biology | 120 |

Figure A.9 The student relation.

Course

| course_id | title | dept_name | credits |
|-----------|----------------------------|------------|---------|
| BIO-101 | Intro. to Biology | Biology | 4 |
| BIO-301 | Genetics | Biology | 4 |
| BIO-399 | Computational Biology | Biology | 3 |
| CS-101 | Intro. to Computer Science | Comp. Sci. | 4 |
| CS-190 | Game Design | Comp. Sci. | 4 |
| CS-315 | Robotics | Comp. Sci. | 3 |
| CS-319 | Image Processing | Comp. Sci. | 3 |
| CS-347 | Database System Concepts | Comp. Sci. | 3 |
| EE-181 | Intro. to Digital Systems | Elec. Eng. | 3 |
| FIN-201 | Investment Banking | Finance | 3 |
| HIS-351 | World History | History | 3 |
| MU-199 | Music Video Production | Music | 3 |
| PHY-101 | Physical Principles | Physics | 4 |

Figure 2.2 The *course* relation.

Department

| dept_name | building | budget |
|------------|----------|--------|
| Biology | Watson | 90000 |
| Comp. Sci. | Taylor | 100000 |
| Elec. Eng. | Taylor | 85000 |
| Finance | Painter | 120000 |
| History | Painter | 50000 |
| Music | Packard | 80000 |
| Physics | Watson | 70000 |

Figure 2.5 The department relation.

Section

| course_id | sec_id | semester | year | building | room_number | time_slot_id |
|-----------|--------|----------|------|----------|-------------|--------------|
| BIO-101 | 1 | Summer | 2009 | Painter | 514 | В |
| BIO-301 | 1 | Summer | 2010 | Painter | 514 | A |
| CS-101 | 1 | Fall | 2009 | Packard | 101 | Н |
| CS-101 | 1 | Spring | 2010 | Packard | 101 | F |
| CS-190 | 1 | Spring | 2009 | Taylor | 3128 | E |
| CS-190 | 2 | Spring | 2009 | Taylor | 3128 | A |
| CS-315 | 1 | Spring | 2010 | Watson | 120 | D |
| CS-319 | 1 | Spring | 2010 | Watson | 100 | В |
| CS-319 | 2 | Spring | 2010 | Taylor | 3128 | C |
| CS-347 | 1 | Fall | 2009 | Taylor | 3128 | A |
| EE-181 | 1 | Spring | 2009 | Taylor | 3128 | C |
| FIN-201 | 1 | Spring | 2010 | Packard | 101 | В |
| HIS-351 | 1 | Spring | 2010 | Painter | 514 | C |
| MU-199 | 1 | Spring | 2010 | Packard | 101 | D |
| PHY-101 | 1 | Fall | 2009 | Watson | 100 | A |

Teaches

| ID | course_id | sec_id | semester | year |
|-------|-----------|--------|----------|------|
| 10101 | CS-101 | 1 | Fall | 2009 |
| 10101 | CS-315 | 1 | Spring | 2010 |
| 10101 | CS-347 | 1 | Fall | 2009 |
| 12121 | FIN-201 | 1 | Spring | 2010 |
| 15151 | MU-199 | 1 | Spring | 2010 |
| 22222 | PHY-101 | 1 | Fall | 2009 |
| 32343 | HIS-351 | 1 | Spring | 2010 |
| 45565 | CS-101 | 1 | Spring | 2010 |
| 45565 | CS-319 | 1 | Spring | 2010 |
| 76766 | BIO-101 | 1 | Summer | 2009 |
| 76766 | BIO-301 | 1 | Summer | 2010 |
| 83821 | CS-190 | 1 | Spring | 2009 |
| 83821 | CS-190 | 2 | Spring | 2009 |
| 83821 | CS-319 | 2 | Spring | 2010 |
| 98345 | EE-181 | 1 | Spring | 2009 |

| time_slot_id | day | start_time | end_time |
|--------------|--------------|------------|----------|
| A | M | 8:00 | 8:50 |
| A | W | 8:00 | 8:50 |
| A | F | 8:00 | 8:50 |
| В | M | 9:00 | 9:50 |
| В | W | 9:00 | 9:50 |
| В | F | 9:00 | 9:50 |
| C | M | 11:00 | 11:50 |
| C | W | 11:00 | 11:50 |
| C | F | 11:00 | 11:50 |
| D | M | 13:00 | 13:50 |
| D | W | 13:00 | 13:50 |
| D | \mathbf{F} | 13:00 | 13:50 |
| E | T | 10:30 | 11:45 |
| E | R | 10:30 | 11:45 |
| F | T | 14:30 | 15:45 |
| F | R | 14:30 | 15:45 |
| G | M | 16:00 | 16:50 |
| G | W | 16:00 | 16:50 |
| G | F | 16:00 | 16:50 |
| H | W | 10:00 | 12:30 |

Figure A.12 The time_slot relation.

| ID | course_id | sec_id | semester | year | grade |
|-------|-----------|--------|----------|------|--------------|
| 00128 | CS-101 | 1 | Fall | 2009 | A |
| 00128 | CS-347 | 1 | Fall | 2009 | A- |
| 12345 | CS-101 | 1 | Fall | 2009 | C |
| 12345 | CS-190 | 2 | Spring | 2009 | A |
| 12345 | CS-315 | 1 | Spring | 2010 | A |
| 12345 | CS-347 | 1 | Fall | 2009 | A |
| 19991 | HIS-351 | 1 | Spring | 2010 | В |
| 23121 | FIN-201 | 1 | Spring | 2010 | C+ |
| 44553 | PHY-101 | 1 | Fall | 2009 | B- |
| 45678 | CS-101 | 1 | Fall | 2009 | F |
| 45678 | CS-101 | 1 | Spring | 2010 | B+ |
| 45678 | CS-319 | 1 | Spring | 2010 | В |
| 54321 | CS-101 | 1 | Fall | 2009 | A - |
| 54321 | CS-190 | 2 | Spring | 2009 | B+ |
| 55739 | MU-199 | 1 | Spring | 2010 | A- |
| 76543 | CS-101 | 1 | Fall | 2009 | \mathbf{A} |
| 76543 | CS-319 | 2 | Spring | 2010 | A |
| 76653 | EE-181 | 1 | Spring | 2009 | C |
| 98765 | CS-101 | 1 | Fall | 2009 | C- |
| 98765 | CS-315 | 1 | Spring | 2010 | В |
| 98988 | BIO-101 | 1 | Summer | 2009 | \mathbf{A} |
| 98988 | BIO-301 | 1 | Summer | 2010 | null |

Figure A.10 The takes relation.