A university database contains information on professors (identified by ssn) and courses (identified by cid). Note that ssn is the key for professors entity set and cid is the key for courses entity set. Professors teach courses; each of the following situations concerns the **Teaches** relationship set. For each situation draw the ER diagram, assuming no further constrains other than the given ones.

1. Professors can teach the same course in several semesters, and each offering must be recorded.
2. Professors can teach the same course in several semesters, and only the most recent one needs to be recorded.
3. Every professor must teach some course.
4. Every professor teaches exactly one course (no more no less)
5. Every professor teaches exactly one course (no more no less) and also every course must be taught by some professor.