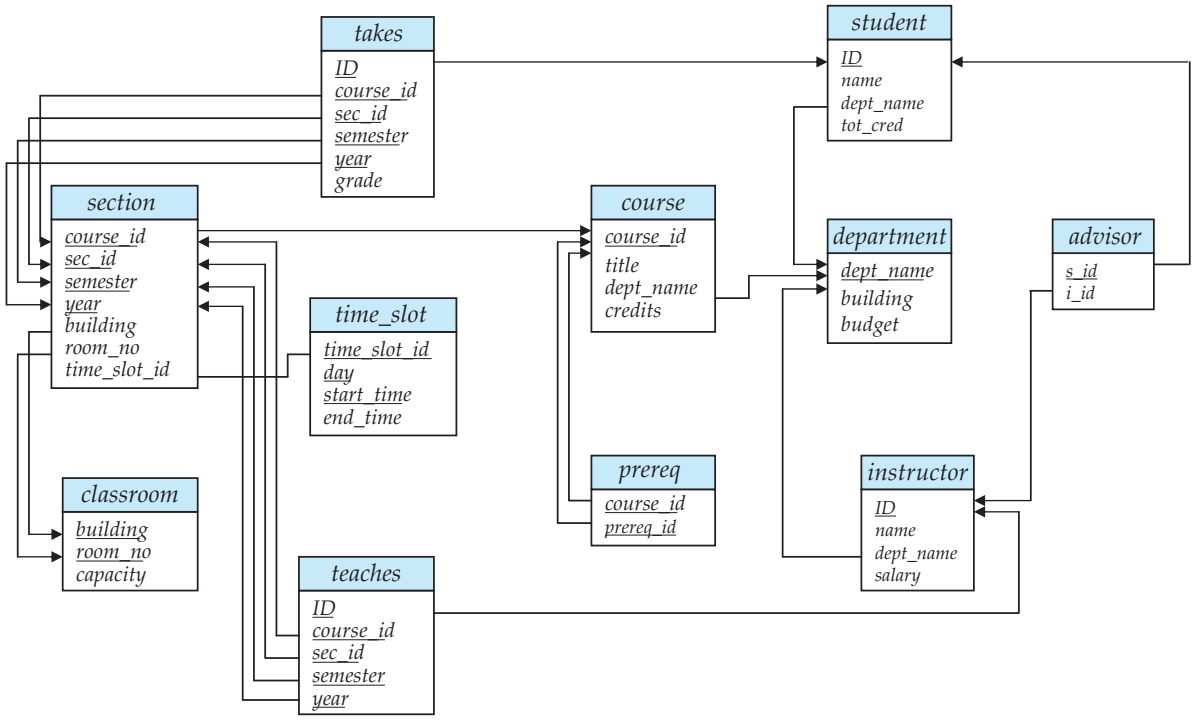

Figure 2.8 Schema diagram for the university database.

Referential integrity constraints other than foreign key constraints are not shown explicitly in schema diagrams. We will study a different diagrammatic representation called the entity-relationship diagram later, in Chapter 7. Entity-relationship diagrams let us represent several kinds of constraints, including general referential integrity constraints.

Many database systems provide design tools with a graphical user interface for creating schema diagrams. We shall discuss diagrammatic representation of schemas at length in Chapter 7.

The enterprise that we use in the examples in later chapters is a university. Figure 2.9 gives the relational schema that we use in our examples, with primary-key attributes underlined. As we shall see in Chapter 3, this corresponds to the approach to defining relations in the SQL data-definition language.

2.5 Relational Query Languages

A **query language** is a language in which a user requests information from the database. These languages are usually on a level higher than that of a standard programming language. Query languages can be categorized as either procedural or nonprocedural. In a **procedural language**, the user instructs the system to perform a sequence of operations on the database to compute the desired result. In a **nonprocedural language**, the user describes the desired information without giving a specific procedure for obtaining that information.