

CNS 3520 HW #2

Draw an E-R diagram for each of the following situations (if you believe that you need to make additional assumptions, clearly state them for each situation):

1. A laboratory has several chemists who work on one or more projects. Chemists also may use certain kinds of equipment on each project. Attributes of CHEMIST include Employee_ID (identifier), Name, and Phone- No. Attributes of PROJECT include ProjecUD (identifier) and Start_Date. Attributes of EQUIPMENT include Serial_No and Cost. The organization wishes to record Assign_Date-that is, the date when a given equipment item was assigned to a particular chemist working on a specified project. A chemist must be assigned to at least one project and one equipment item. A given equipment item need not be assigned, and a given project need not be assigned either a chemist or an equipment item.

2. A college course may have one or more scheduled sections, or may not have a scheduled section. Attributes of COURSE include Course_ID, Course_Name, and Units. Attributes of SECTION include Section_Number and Semester_ID. Semester_ID is composed of two parts: Semester, and Year. Section_Number is an integer (such as "1" or "2") that distinguishes one section from another for the same course but does not uniquely identify a section.

3. A hospital has a large number of registered physicians. Attributes of PHYSICIAN include Physician_ID (the identifier) and Specialty. Patients are admitted to the hospital by physicians. Attributes of PATIENT include Patient_ID (the identifier) and Patient_Name. Any patient who is admitted must have exactly one admitting physician. A physician may optionally admit any number of patients. Once admitted, a given patient must be treated by at least one physician. A particular physician may treat any number of patients, or may not treat any patients. Whenever a patient is treated by a physician, the hospital wishes to record the details of the treatment (Treatment_Detail). Components of treatment_Detail include Date, Time, and Result.