Exercice 1 : ISI's academic management system

At l'Institut supérieur d'informatique, we want to track students who take courses and professors who are teaching courses. At ISI : a student can take one or more courses, and a class can be attended by one or more student. In addition, a course may be taught by one or more teachers, while a teacher may teach one or more courses.

A course is uniquely identified by a course number. For each course, ISI wants to know the course's title, and the number of hours required to complete the course (example : INF101, Programming 1, 90). A teacher is uniquely identified by his first and last name, number of years of experience, address, telephone and date of hiring (example : 000-111-222-4567, 97/03/12). A student is identified by their permanent code. We also want to know their first and last name, address, phone number, and date of birth. (example : GADM70031201, Gadbois, Mireille, 24 des tulipes Montréal Qc H1R 2G4, (514) 564-7867, 70/03/12).

a) Identify the entities and their attributes

b) Establish relationships

c) Identify the identifying keys

d) Identify the cardinalities