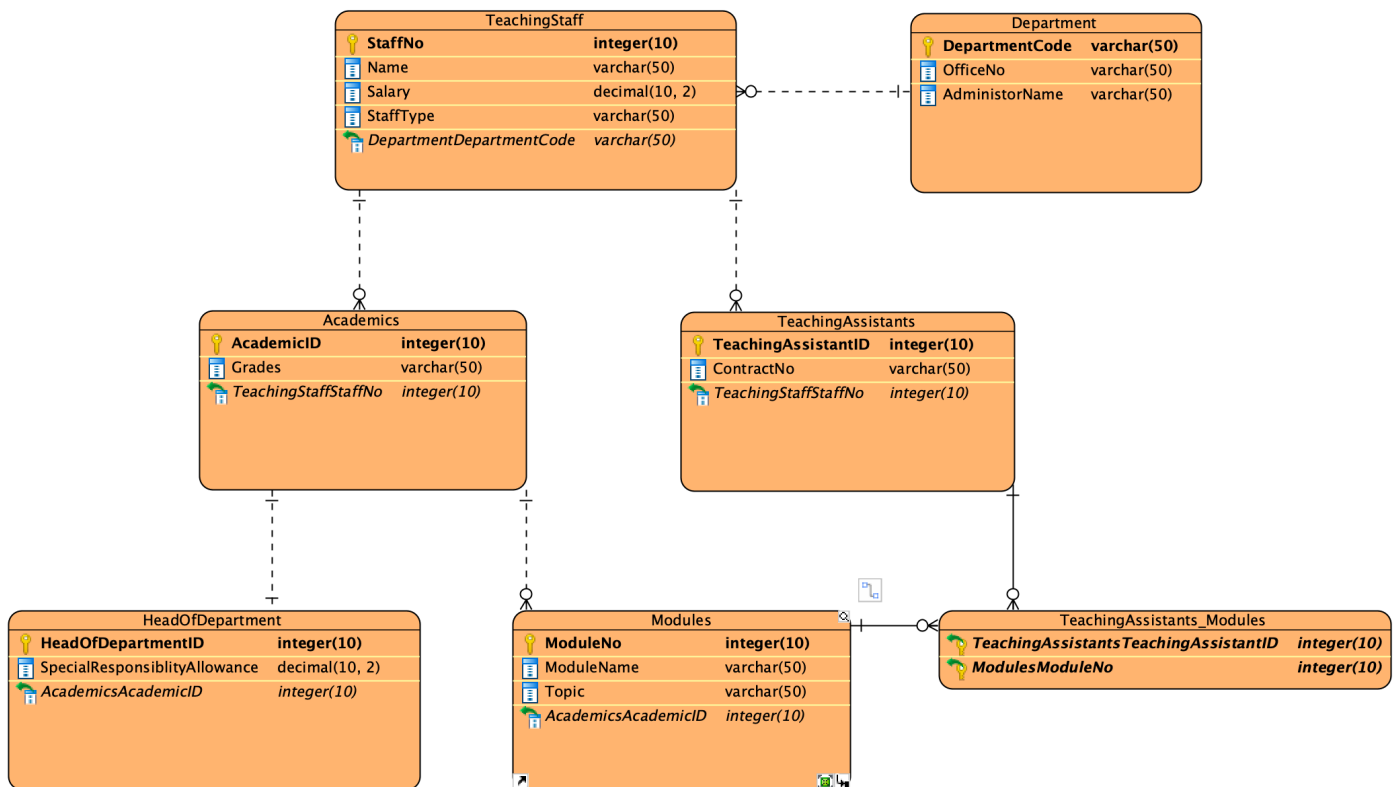# ER Modelling Exercise - SMCSE

The School of Mathematics, Computer Science and Engineering is composed of several departments. Each department is identified by a code, has a departmental office (office number) and a departmental administrator (administrator name). Each department has teaching staffs that teach modules. Each teaching staff member has a staff number, a name, and a salary. Teaching staff are either Academics or Teaching Assistants. Academics have grades, while Teaching Assistants have contracts (Contract Number). Most Academics are responsible for one or more modules (module number, module name, topic), and a module is the responsibility of only one Academic. Teaching Assistants must assist with teaching one or more modules.

Module can have several Teaching Assistants. In each department, one of the Academics acts as the Head of Department, and they have a special responsibility allowance.

Design an E-R diagram for the above database.

Derive a corresponding relational scheme from your E-R diagram.

Department (<u>DepartmentCode</u> {pk}, OfficeNo, AdministorName)

TeachingStaff (<u>StaffNo</u> {pk}, Name, Salary, StaffType, DepartmentDepartmentCode)
FOREIGN KEY DepartmentDepartmentCode references Department (DepartmentCode)

Academics (<u>AcademicID</u> {pk}, Grades, TeachingStaffStaffNo)
FOREIGN KEY TeachingStaffStaffNo references TeachingStaff (StaffNo)

HeadOfDepartment (<u>HeadOfDepartmentID</u> {pk},
SpecialResponsiblityAllowance, AcademicsAcademicID)
FOREIGN KEY AcademicsAcademicID references Academics
(AcademicsAcademicID)

TeachingAssistants (<u>TeachingAssistantID</u> {pk}, ContractNo,
TeachingStaffStaffNo)
FOREIGN KEY TeachingStaffStaffNo references TeachingStaff (StaffNo)

Modules (<u>ModuleNo</u> {pk}, ModuleName, Topic, AcademicsAcademicID)
FOREIGN KEY AcademicsAcademicID references Academics
(AcademicsAcademicID)

TeachingAssistants_Modules (TeachingAssistantsTeachingAssistantID,
ModulesModuleNo)
FOREIGN KEY TeachingAssistantsTeachingAssistantID references
TeachingAssistants (TeachingAssistantID)
FOREIGN KEY ModulesModuleNo references Modules (ModuleNo)