

**UML – Structural Modelling**  
(adapted from Dennis & Haley Wixom (2005))

**Objectives**

1. **Understand the process used to create class diagrams**
2. **Understand the relationships and associations that the classes have with one another**

1. Draw a class diagram for the following scenario. Consider that the entities represent a system for cinema booking.

**Movie** (title, producer, length, director, genre)

**Ticket** (price, adult or child, showtime, movie)

**Ticket Holder** (name, adult or child, age)

*HINTS: A ticket is only valid for one movie. Each movie usually has many tickets, but rarely no tickets will be sold/issued (if the movie is really bad... !).*

2. Draw a class diagram for the following classes. Consider that the entities represent an online university registration system and that students can choose one course, but choose several modules from those available in that course.

**Student** (id, name, address, phone, program, course limit)

**Module Offering** (module number, semester, instructor, room number, capacity, status (full or not full))

**Department Staff Member** (name, id, responsibilities)

**Course** (name, department)

*HINTS:*

- For the `student` class: The student should be able to **examine** currently available modules, **add** and **remove (drop)** modules to and from their schedules, and **examine** the modules for which they are enrolled.
- For the `module offering` class: The status can be **changed**.
- For the `Department Staff Member` class: The staff member should be able to **examine** the modules offered by their department, **add** and **remove** modules, and **change** the information about them (e.g., the maximum number of students permitted). Also, the staff member should be able to **print** a variety of reports about the **modules** and the **students** enrolled in them.