SED Lecture 4
Object Relationships and UML Class diagrams

Objectives
To be able to identify relationships between classes. To read and modify UML class diagrams.

Key Points
1. Class diagrams describe the spatial connectivity of objects: the classes in a system and their relationships. Class diagrams do not describe dynamic behaviour.
2. Classes are abstractions that specify the attributes and behaviour of a set of objects.
3. Associations are relationships between classes.
4. Each end of an association may be labelled with a role (clarifying the reason for the association).
5. Alternatively, the association may be given a (single) name to document explicitly the relationship between the classes.
6. Each end of an association may be labelled with a multiplicity (an exact number, n, a range of numbers, n..m, or an arbitrary number *), to identify the possible number of instances.
7. UML class diagrams describe the structure of a system in terms of the associations between classes.

Core reading
Bruegge & Dutuoit (2nd ed), 2.4.2 class diagrams, 5.4.6 identifying associations, 5.4.8 identifying attributes
Sommerville (7th ed) 14.2.3 object identification
Pressman (5th ed) 22.5.1 the class model, 22.5.4 associations, 22.6 case study – online books
Lionel Briand, Software Documentation: how much is enough? 7th European Conference on Software Maintenance and Reengineering.