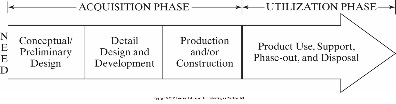
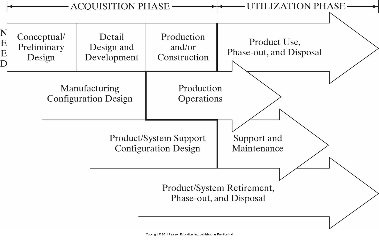
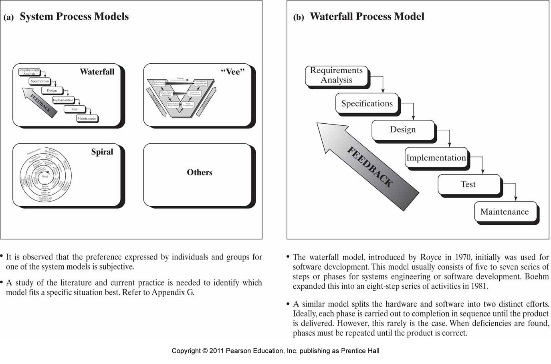
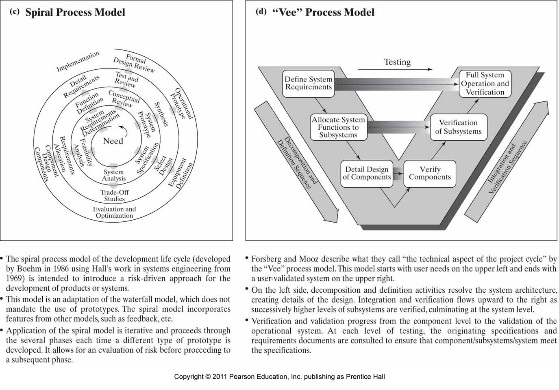
**System**

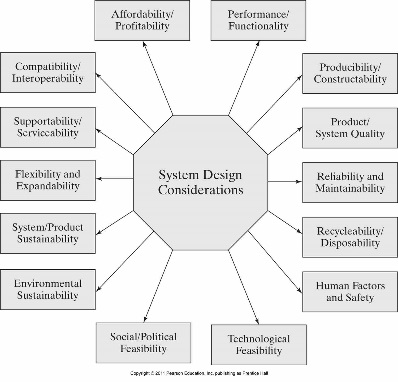
* elements are: a) *components*, b) *attributes*, and c) *relationships*
* *alter* either energy, information or materials
* can be either *natural*, or *man-made*
* can be either *physical* or conceptual
* are typically *static* or *dynamic*
* A set of interrelated components











**Problem statement**

* [relatively] non-technical
* Uses “language” of customer
* Non-complex

**Q’s to get well-made prob. stmt.**

* Q the customer
* Differentiate their needs and wants
* Explore project boundaries
* Do I/O analysis
* Preview user interface
* Survey design attributes
* Identify conflicting needs
* Prepare draft operations manual

**Sections of prob. stmt.**

* Background/overview
* Overall design [not detailed]
* Deliverables

**Prob. stmt. defines**

* Who, what, why (insight)

**Chars. of good prob. stmt.**

* Short, avoids defining soln., not short list of reqs.
* Captures essence of prob./ need, includes qual. & quant.

**Needs analysis**

* When, what (sys. do & primary & secondary functions), where, how often?

**Operational Requirements**

* Mission def, environ. factors, oper. lifetime/deployment, utilization reqs. (freq. of use, hrs. of oper., capacity), perf. params. (mass, volume, range, velocity), effectiveness (MTBM, MDT, MTBF)