Task 1

- Let's begin by defining the terms:
  1. Curriculum
  2. Course
  3. Syllabus
Differentiating between curriculum and syllabus

- A curriculum may be viewed as the content, standards, or objectives for which an institution hold the learners accountable.
- Or it may be taken as the set of instructional strategies teachers plan to use.
- However, taken as educational plans, standards or intended outcomes, curriculum becomes a political stance.
- The teacher is then accountable for the effectiveness of theirs plans and the implementation of the curricula in a premeditated manner- leaving little room for flexibility.
Differentiating between curriculum and syllabus

- Syllabus may be viewed as a concise statement or table of the heads of discourse..the subjects of a series of lectures..it is connected with the courses leading to examinations.
What do experts say?

“.. Curriculum is a very general concept which involves consideration of the whole complex of philosophical, social and administrative factors which contribute to the planning of an educational program. Syllabus on the other hand, refers to that subpart of curriculum which is concerned with a specification of what units will be taught” (Allen 1984).
Things to remember

- Curriculum MUST be a flexible document.
- A curriculum should ONLY give a guideline for planning.
- A curriculum may be provided by the institution or expert curriculum planner.
- Syllabus is a concrete document.
- A syllabus should remind the instructor of what is to be taught, how it is to be taught and from where it is to be taught.
- A syllabus should be drawn up by the instructor or those involved directly in the teaching.
Types of Curriculum frameworks

Subject-centred
Problem-centred
Learner-centred
Subject-centred Curriculum

- Here the focus is on the content of the curriculum
- The teaching in the subject-centred curriculum corresponds to the textbook written specifically for the subject
Subject-centred Curriculum

- The focus in subject-centred curriculum may be on
  - Traditional areas in the traditional disciplines
  - Interdisciplinary topics that touch on a wide variety of fields
  - On processes such as problem solving
  - On the goal of teaching students to be critical consumers of information
Subject to be taught

Definition of important generalization and understandings to teach

Topic area within the subject to be covered

Determination of objectives

Deciding upon learning experiences relevant to mastering the content

Identification of accompanying intellectual discipline

Evaluating the extent of mastery of what was taught
Examples of Subject-centred curriculum

1. Subject Design
   • Stresses entirely on the content
   • Learning is very compartmentalised
   • Does not account for learner interest, experiences and tendencies
Examples of Subject-centred curriculum

2. Discipline Design
   • Knowledge gained through a method which the scholars use to study specific content of their fields
   • Only the In-depth study of specialised areas takes place
Examples of Subject-centred curriculum

4. Broad field design/ interdisciplinary
   • Prevents compartmentalization of subjects
   • Integrates the contents which are related to each other
Learner-centred Curriculum

- Centred on certain aspects of the learners themselves
- May explore the learner’s own life, family history or local environment
Examples of learner-centred curriculum

1. Child-centred design (John Dewey, Rousseau, Pestalozzi and Froebel)
   - Anchored on the needs and interests of the child
   - Learner is actively involved in the learning process
   - Learning takes place through doing
   - Learners interact with the teachers and the environment
Examples of learner-centred curriculum

2. Experience-centred design
   - Experiences of the learners become the starting point
   - The learning environment is open and free-no boundaries are defined
   - Learners choose from various activities the teacher provides
   - Learners are empowered to shape their own learning
Advantages of learner-centred curriculum

- Gives power to the learners who are viewed in experts in knowing what they need to know
- Takes into account the social and cultural context of the learner
- Creates direct link between in-class work and learners’ need for literacy outside the classroom
Disadvantages of learner-centred curriculum

- Relies on teacher’s ability to create/select material appropriate to learners’ expressed needs
- Requires a skilled teacher, time and resources
- Teachers find it difficult to strike balance among the competing needs and interests of students
Alternatives for a learner-centred curriculum

- Student-designed creative activities
- Small group-activities (in and out of class)
- Change seating configuration
- Focus on team learning/peer teaching
- Design problem solving activities
- Paired activities
- Design tasks cards
- Standard lectured
- Teacher demonstration
Problem-centred curriculum

- Subject matter is organised around a real or hypothetical problem to be solved
- Is engaging and authentic and gives learners a real purpose of inquiry
Types of problem-centred curriculum

- Life situations involving real problems of practice
- Problems which revolve around life in a given institute
- Problems selected from local issues
- Philosophical or moral problems
Curriculum Development

Is a multi-stage process involving dedication, understanding and knowledge on part of the curriculum designer or developer.
Curriculum Development for Engineering

- Various models have been presented in the engineering educational literature for the development of curricula for study programs in engineering.
- In the teacher improvement workshop conducted by the engineering development bank, the following adaption of the model described by Grayson (1978) was given.
- The model identifies the following stages in the design and development of a curriculum:
  
  Stage 1: Problem definition
  
  Stage 2: Structuring the curriculum
  
  Stage 3: Implementation
Framework for developing an engineering curriculum based on Grayson’s model

**Problem Definition**
- Mission statement
- Industry needs
- Societal needs
- Professional needs

**Structuring the curriculum**
- Domains of knowledge
- Student constraints
- Accrediting body
- Resources
- Teaching and learning methods

**Implementation and evaluation**
- Advisory boards
- External examiners
- Feedback from industry
- Outcomes assessment
Stage 1 Problem Definition

The inputs to stage 1 are:

- **The Mission Statement.** This should be a part of the strategic planning and quality management procedures of the Department and it provides overall guidance of the purpose of the Department.

- **Industry Needs.** These can be difficult to obtain but should include a competencies measure of manpower requirements and the skills, knowledge and employers expect of graduate engineers.

- **Societal needs.** The role that the engineer will play in the national development, the engineer's responsibilities to society, society's expectations and the impact of technology on society are necessary inputs to the curriculum design process.
Stage 1 Problem Definition

- Professional needs. This input includes criteria set for the initial registration of professional engineers, criteria for continued registration, and criteria for educational program as set by the professional societies.

- Evaluation of an Existing Curriculum. Feedback from the existing curriculum, if any, can be used to determine how well the existing curriculum satisfies the educational goals. This information will help in improving the curriculum.
Task 2

1. Does your department have a mission statement? What do you think could be the mission statement?
2. How can you conduct a needs analysis to learn about the industrial needs?
3. Make a list of the needs of the industry of your particular field.
4. Make a list of the societal roles of engineers of your field.
5. What are the professional needs of engineers from your field?