**Lesson Plan Form**

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| Title: **FIR filter design** | | | Ref. No: **ETE 321/18** | |
| Target Population: **25** | | | Duration: **90 minutes** | |
| Aims/Rationale: **The aim of the course is to make students familiar with several types of the modern digital filters, and to teach them how to design the digital filter.** | | | | |
| **Learning Outcomes: At the end of the session participant will be able to :**   1. **Understand the basic concepts about Design Filter and mathematical representation and its properties.** 2. **Design of Linear-Phase FIR Filters Using Windows.** 3. **Design of Linear-Phase FIR Filters by the Frequency-Sampling Method.** 4. **Comparison of Design Methods for Linear –Phase FIR Filters.** | | | | |
| **Content** | **Method or Technique** | **Resource or Aid** | | **Time** |
| Introduction: **Welcome address**  **Rapport building**  **Bridging topic**  **Layout/ content outline**  **Attendance**  **Pre-assessment** | **Lecture**  **Q/A** | **W/B** | | **10 minutes** |
| Development:  Section-A:  **Basic theory of Digital Theory and mathematical function.**  Section-B  **Symmetric and Ant symmetric FIR Filters.**  **Design of Linear-Phase FIR Filters using Windows.**  **Design of Linear-Phase FIR Filters by the Frequency- Sampling Method.**  Section-C  **Design of FIR Differentiators.**  **Comparison of Design Methods for Linear-Phase FIR filters.** | **Lecture**  **Discussion**  **Do**  **Do** | **W/B**  **MMP**  **Video** | | **20 minutes**  **25 minutes**  **25 minutes** |
| Conclusion:  **Recap main points**  **Feedback & answer**  **Assessment of LOs**  **Reference**  **Forward plan** | **Lecture**  **Discussion**  **Q/A** |  | | **10 minutes** |
| Equipment & aids: **Optional** | | | | |