**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.**
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| **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** |