



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to
MOSTAFA MAHER EL HAWARY
for successfully completing the course

Phase-Locked Loops

with a consolidated score of **55** %

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|--------------------|----------|----------------|----------|
| Online Assignments | 21.28/25 | Proctored Exam | 33.75/75 |
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Total number of candidates certified in this course: **53**

Prof. Devendra Jaliha

Chairperson,
Centre for Outreach and Digital Education, IITM

Jul-Oct 2023

(12 week course)

Prof. Andrew Thangaraj

NPTEL, Coordinator
IIT Madras



Indian Institute of Technology Madras



Roll No: NPTEL23EE83S65007265

To verify the certificate



No. of credits recommended: 3 or 4