YESHWANTRAO CHAVAN COLLEGE OF ENGINEERING
(An Autonomous Institution affiliated to R T M Nagpur University Nagpur)
Accredited by NAAC (1st Cycle) with 'A' Grade (Score 3.25 on 4 Point Scale)
Wanadongri, Hingna Road, Nagpur-441110

Department of Electrical Engineering
(Honors in Embedded System)

B.E. Honors in Embedded System (NPTEL)
SoE & Syllabus 2021-22

B.E Honors in Embedded System (NPTEL)
Information Brochure of Honor Program

1. Title of Program: Embedded System (NPTEL)
2. Type of Program : Honor / Major
3. Department offering the program: **Electrical Engineering**
4. Industry / Association / Collaboration: NPTEL BASED
5. Departments eligible to opt for the program: Electrical Engineering Students

6. **General information about courses in program:**
   The various courses to be opted by students are grouped in six baskets. Student has to pick any one from each basket to complete total 18 credits. Once student completes 18 credits he/she becomes eligible for honor/major degree.

   Group 1:
   Analog IC Design
   Network Analysis
   Introduction to time varying electrical networks
   Introduction to embedded system design
   Group 2:
   Microprocessors and Microcontrollers
   Advanced IOT application
   Digital Signal Processing and its Applications
   Architectural Design of Digital Integrated Circuits
   Group 3:
   High Power Multilevel Converters - Analysis, design and operational issues
   Advanced Power Electronics and Control
   Power electronics and distributed Generation
   Integrated Circuits, MOSFETs, Op-Amps and their Applications
   Group 4:
   Power System Engineering

Power System Dynamics, Control and Monitoring
Advances in UHV transmission and distribution
Group 5:
Industrial automation and control
Advance linear continuous control system-applications with MATLAB programming and Simulink
Robotics and Control: Theory and Practice
Sensors and Actuators
Group 6:
Power Quality Improvement Technique
Power Management Integrated Circuits
DC micro grid
No practical courses are included in this program.

7. Advance knowledge or research orientation of Program:

Through this program, students get the advance knowledge in the various fields of electrical engineering viz:

- Time varying electrical networks
- Embedded system design
- Microprocessors and Microcontrollers
- Advanced IOT application
- Digital Signal Processing and its Applications
- Architectural Design of Digital Integrated Circuits
- Multilevel Converters
- Advanced Power Electronics and Control
- Power electronics and distributed Generation
- Power System Dynamics, Control and Monitoring
- Advances in UHV transmission and distribution
- Industrial automation and control
- Advance linear continuous control system
- Robotics and Control
- Sensors and Actuators
- Power Quality Improvement Technique
- Power Management Integrated Circuits
- DC micro grid

8. **Employability potential of program: A candidate with B.E. electrical engineering and** major/honor in embedded system(learning through NPTEL certification) is a most suitable person to get placement as : micro grid design engineer (hardware), Power manager, Power quality account Engineer, Power quality management product engineer, microcontroller/ microprocessor design specialist, embedded hardware engineer, Manufacturing units, ISRO, MSETEL
MSEDCL
MAHAGENCO micro grid system modeler, senior energy and sustainability consultant, senior data scientist/ energy optimization, micro grid application engineer, distributed energy services, Micro grid Controls Engineer, Electrical Engineer- Power Systems, embedded software engineer, senior power system control engineer, system engineer, automation engineer, smart grid engineer, project planning and control specialist Power quality account Engineer,

9. Departmental Steering committee: For proper publicity / conduct of program

SN	Name of the Faculty Member	Post	Designation	e-mail ID	Contact Number
1	Prof. V. R. Doifode	Program coordinator	Assist. Prof.	vaibhawdoifode85@gmail.com	9975777941 9158884775
2	Prof. G. C. Gondhalekar	Publicity head	Assist. Prof.	gg.ycce@gmail.com	8087946882
3	Prof. N. P. Wasnik	Member	Assist. Prof.	naintarawasnik@yahoo.com	8149780149
4	Prof. S. K. Mohod	Member	Assist. Prof.	swati06.mohod@rediffmail.com	8390180836
5	Prof. U.V.Waghmare	Member	Assist. Prof.	u.waghmare@yahoo.com	9404085083

10. Departmental Coordinator

SN	Name of the Faculty Member	Post	Designation	e-mail ID	Contact Number
1	Prof. V. R. Doifode	Program coordinator	Assist. Prof.	vaibhawdoifode85@gmail.com	9975777941 9158884775

Scheme of Examinations
B.E(HONORS/ major) NPTEL/SWAYAM

This is SWAYAM / NPTEL based program and COURSES with 12–14-week syllabus are expected to be available on SWAYAM/NPTEL platform.

If they are not available before the commencement of semester, Similar / Equivalent Subjects shall be notified by BoS of the Department.

Chairman BoS will notify all the subjects which are 12-14 week duration before the commencement of academic session.

B.E(HONORS) NPTEL/SWAYAM										
SN	Sem	Course Code	Course Name	T/P	Contact Hours				Credits		Exam Duration Hours
					L	T	P	Hrs			
1	5	ELHN01	Analog IC Design	T					3	GROUP 1	3 Hours
2	5	ELHN02	Network Analysis	T							3 Hours
3	5	ELHN03	Introduction to time varying electrical networks	T							3 Hours
4	5	ELHN04	Introduction to embedded system design	T							3 Hours
5	5	ELHN05	Microprocessors and Microcontrollers	T					3	GROUP 2	3 Hours
6	5	ELHN06	Advanced IOT application	T							3 Hours
7	5	ELHN07	Digital Signal Processing and its Applications	T							3 Hours
8	5	ELHN08	Architectural Design of Digital Integrated Circuits	T							3 Hours
9	6	ELHN21	High Power Multilevel Converters - Analysis, design and operational issues	T					3	GROUP 3	3 Hours
10	6	ELHN22	Advanced Power Electronics and Control	T							3 Hours
11	6	ELHN23	Power electronics and distributed Generation	T							3 Hours
12	6	ELHN24	Integrated Circuits, MOSFETs, Op-Amps and their Applications	T							3 Hours
13	6	ELHN25	Power System Engineering	T					3	GROUP 4	3 Hours
14	6	ELHN26	Power System Dynamics, Control and Monitoring	T							3 Hours
15	6	ELHN27	Advances in UHV transmission and distribution	T							3 Hours

16	**7**	**ELHN41**	Industrial automation and control	**T**					**3**	**GROUP 5**	3 Hours
17	**7**	**ELHN42**	Advance linear continuous control system-applications with MATLAB programming and Simulink	**T**							3 Hours
18	**7**	**ELHN43**	Robotics and Control : Theory and Practice	**T**							3 Hours
19	**7**	**ELHN44**	Sensors and Actuators	**T**							3 Hours
20	**7**	**ELHN45**	Power Quality Improvement Technique	**T**					**3**	**GROUP 6**	3 Hours
21	**7**	**ELHN46**	Power Management Integrated Circuits	**T**							3 Hours
22	**7**	**ELHN47**	DC microgrid	**T**							3 Hours
				Total Credits					**18**		