NAAC SSR CYCLE- 2

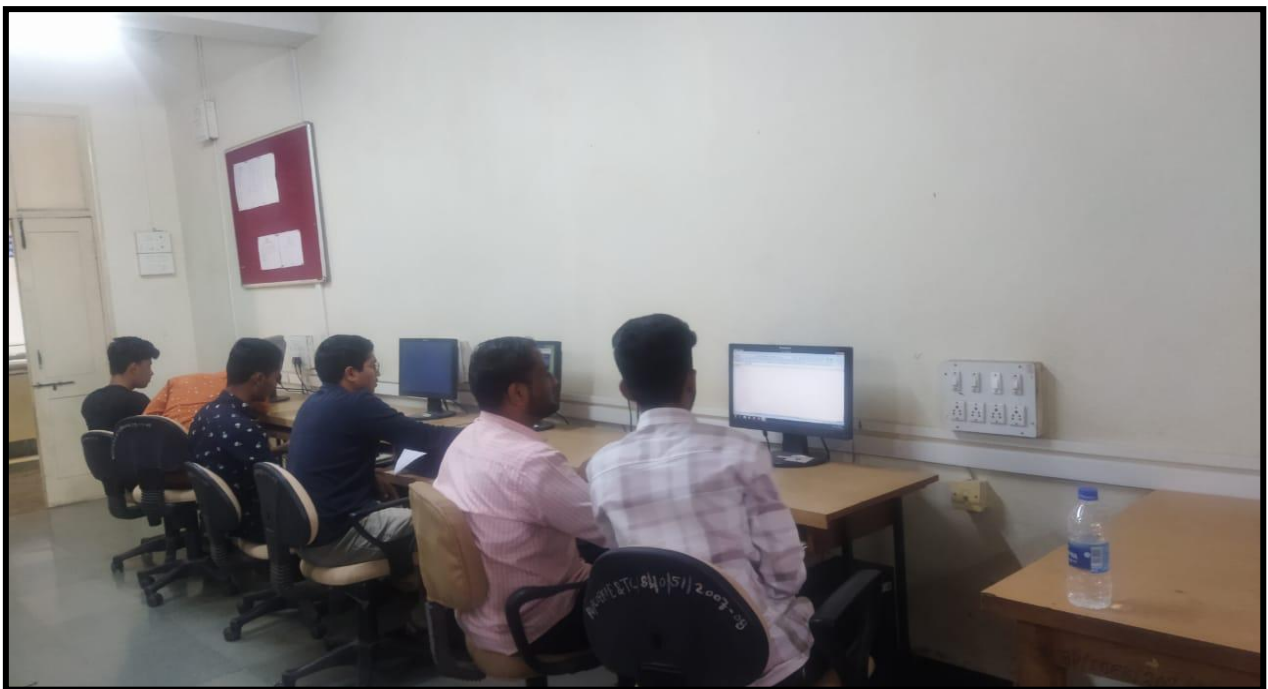| Criterion 1	Curricular Aspects
Key Indicator 1.2	Academic Flexibility
1.2.2 Percentage of students enrolled in Certificate/ Add-on/Value added programs and also completed online MOOC programs like SWAYAM, NPTEL etc. as against the total number of students during the last five years	

- **Organizing Department:** Electronics& Telecommunication Engg.

- **Name of Activity :** Add-on Course "Network Simulation Using NS2"

- **Course Code :** ETC171801

- **Name of Coordinator:** 1. Mr.R.R.Suryawanshi

  2. Mr. V. D. Patil

- **Name of Resource Person:** 1. Mr.R.R.Suryawanshi

  2. Mr. V. D. Patil

- **Date of Activity:** 06/08/2017 to 15/10/2017.

- **Participant:** Final Year E&TC Students (110)

- **Details of Activity:**

    Network Simulator (Version 2), widely known as NS2, is simply an event driven simulation tool that has proved useful in studying the dynamic nature of communication networks. Simulation of wired as well as wireless network functions and protocols (e.g., routing algorithms, TCP, UDP) can be done using NS2. In general, NS2 provides users with a way of specifying such network protocols and simulating their corresponding behaviors. Due to its exibility and modular nature, NS2 has gained constant popularity in the networking research.

    The performance analysis and evaluation of different wired & wireless networks can be done using NS2 with the help of performance metrics like throughput, packet delivery ratio, control overhead, send packets, received packets, end to end delay etc.

- **Outcome of Activity:** This Add-on Course will help students to understand the basic concepts & challenges in field of networking. Also students are able to simulate and analyse the performance of wired and wireless network in NS2.

- **How it Bridges gap between Industry and Academia:** This Course can be helpful to students in order to make them aware about the latest technologies used in Industry and current advancement in the field of networking.

- **Photo:**

Mr. R.R.Suryawanshi/ Mr.V.D.Patil	**Dr. K. R. Desai**	**Dr. V. R. Ghorpade**
Course In-charge	**HOD**	**Principal**

BHARATI VIDYAPEETH'S
COLLEGE OF ENGINEERING KOLHAPUR
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
Add-on Course
"Network Simulation using NS2"

Course Objectives:

This course gives an introduction to the basics of networking, working principle of protocols like TCP & UDP, and the two key languages: C++ and Object-oriented Tool Command Language (OTcl) used in NS2. The course helps students master the concept of routing for sending the data from one node to another node, evaluating the results through trace analysis as well as graphical visualization.

Course Outcomes:

At the end of the course the student will be able to:

1. Understand the basic concepts & challenges in field of networking.
2. Program a simulator for the performance evaluation of a network protocol or a network architecture.
3. Program to analyze a trace file and Plotting with gnuplot, Xgraph

Course Contents:

Session	Contents	Hours
1	Introduction of Network Simulator -NS2	02
2	Installation Process of NS2 on PC/Laptop	02
3	Writing a first TCL Script in NS2	02
4	Hands on: Simulation and implementation of Wired Scenarios in NS2	03
5	Hands on: Simulation and implementation of Wireless Scenarios in NS2	03
6	Introduction to Routing Protocols in MANET	03
7	Hands on: Simulation and implementation of Ad-hoc on demand distance vector routing protocol (AODV).	03
8	Hands on: Simulation and implementation of Dynamic Source routing protocol (DSR).	03
9	Hands on: Simulation and implementation of Link State Routing protocol (LSR).	03
10	Hands on: Plotting Functions- Gnuplot, XGraph Utility NS2	03
11	Network Performance evaluation using performance metrics.	03

Hardware Requirement:

- Desktop PC/Laptop with NS2 Software.
- Internet Connection for installation of packages.
- LCD Projector with screen

Resource Person:

1. Mr. Ranjeet R. Suryawanshi
2. Mr. Vikas D. Patil

Mr. R.R.Suryawanshi/ Mr.V.D.Patil
Course In-charge

Dr. K. R. Desai
HOD

BHARATI VIDYAPEETH'S
COLLEGE OF ENGINEERING KOLHAPUR
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
Add-on Course
"Network Simulation using NS2"
Academic Year 2017-18

Schedule

Session	Date	Time
1	06/08/2017	09.00 am to 12.00 noon
2	13/08/2017	09.00 am to 12.00 noon
3	20/08/2017	09.00 am to 12.00 noon
4	27/08/2017	09.00 am to 12.00 noon
5	03/09/2017	09.00 am to 12.00 noon
6	10/09/2017	09.00 am to 12.00 noon
7	17/09/2017	09.00 am to 12.00 noon
8	24/09/2017	09.00 am to 12.00 noon
9	01/10/2017	09.00 am to 12.00 noon
10	08/10/2017	09.00 am to 12.00 noon
11	15/10/2017	09.00 am to 12.00 noon

Mr. R.R.Suryawanshi/ Mr.V.D.Patil   **Dr. K. R. Desai**
Course In-charge   **HOD**

Social Transformation Through Dynamic Education
Accreted by NAAC with 'A' Grade

BHARATI VIDYAPEETH'S
COLLEGE OF ENGINEERING, KOLHAPUR
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

CERTIFICATE

"Network Simulation using NS2"

This is to certify that Mr. / Ms. **Bhosale Shivani Sushant** has successfully completed the add-on course on " **Network Simulation using NS2**" from 06/08/2017 to 15/10/2017 by the Department of Electronics & Telecommunication Engineering of Bharati Vidyapeeth's College of Engineering, Kolhapur.

Mr. V. D. Patil/ Mr. R.R. Suryawanshi
Course In-charge

Dr. K. R. Desai
HOD

Dr. V. R. Ghorpade
Principal

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

CERTIFICATE

"Network Simulation using NS2"

This is to certify that Mr. / Ms. **Mandlik Deepak Prakash** has successfully completed the add-on course on " **Network Simulation using NS2**" from 06/08/2017 to 15/10/2017 by the Department of Electronics & Telecommunication Engineering of Bharati Vidyapeeth's College of Engineering, Kolhapur.

Mr. V. D. Patil/ Mr. R.R. Suryawanshi
Course In-charge

Dr. K. R. Desai
HOD

Dr. V. R. Ghorpade
Principal

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

CERTIFICATE

"Network Simulation using NS2"

This is to certify that Mr. / Ms. **Koli Tejas Manohar** has successfully completed the add-on course on " **Network Simulation using NS2**" from 06/08/2017 to 15/10/2017 by the Department of Electronics & Telecommunication Engineering of Bharati Vidyapeeth's College of Engineering, Kolhapur.

Mr. V. D. Patil/ Mr. R.R. Suryawanshi
Course In-charge

Dr. K. R. Desai
HOD

Dr. V. R. Ghorpade
Principal

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

CERTIFICATE

"Network Simulation using NS2"

This is to certify that Mr. / Ms. **Magdum Aishwarya Pradeep** has successfully completed the add-on course on " **Network Simulation using NS2**" from 06/08/2017 to 15/10/2017 by the Department of Electronics & Telecommunication Engineering of Bharati Vidyapeeth's College of Engineering, Kolhapur.

Mr. V. D. Patil/ Mr. R.R. Suryawanshi
Course In-charge

Dr. K. R. Desai
HOD

Dr. V. R. Ghorpade
Principal

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

CERTIFICATE

"Network Simulation using NS2"

This is to certify that Mr. / Ms. **Kamble Jagriti Guruling** has successfully completed the add-on course on " **Network Simulation using NS2**" from 06/08/2017 to 15/10/2017 by the Department of Electronics & Telecommunication Engineering of Bharati Vidyapeeth's College of Engineering, Kolhapur.

Mr. V. D. Patil/ Mr. R.R. Suryawanshi
Course In-charge

Dr. K. R. Desai
HOD

Dr. V. R. Ghorpade
Principal

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COLLEGE OF ENGINEERING KOLHAPUR
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
Add-on Course
"Network Simulation using NS2"

Student List   Date/Time ___2 4 l 09 l 2017___

Sr. No.	Name of Student	Course Registration ID Number	Signature
1	Agarkar Priti Shashikant	ETC171801	
2	Agnihotri Sharvari Vijay	ETC171802	S.V. Agnihotri
3	Bagewadi Madhura Shashikant	ETC171803	Bagewadi
4	Basargekar Ketaki Prakash	ETC171804	
5	Basugade Minakshee Milind	ETC171805	M. Basugade
6	Bhakare Pooja Sanjay	ETC171806	Bhakare
7	Bhaladar Imran M	ETC171807	
8	Bharmal Arun Dattatray	ETC171808	
9	Bhosale Devayani Sambhajirao	ETC171809	Bhosale
10	Bhosale Rahul Yahsvant	ETC171810	
11	Bhosale Shivani Sushant	ETC171811	Bhosale
12	Bindage Nitish Mahaveer	ETC171812	Bindage
13	Birade Suraj Shivaji	ETC171813	Birade
14	Borgaonkar Girisha Gajanan	ETC171814	G.G.Borgankar
15	Chavan Jyoti Anil	ETC171815	Chavan
16	Chougule Rupali Suresh	ETC171816	
17	Desai Aniket A	ETC171817	Desai
18	Devardekar Disha	ETC171818	Devardekar
19	Devlapurkar Minar Deepak	ETC171819	Deepak
20	Dhadam Kauntey Anil	ETC171820	
21	Dharmadhikari Vishal S	ETC171821	
22	Dongale Akash Anil	ETC171822	Dongale
23	Ekal Apurva Ramchandra	ETC171823	Eacche
24	Gaccche Suraj B	ETC171824	
25	Gaikwad Madhura Mahadev	ETC171825	Gaikwad
26	Ghurake Ashwini Bhagoji	ETC171826	Ghurake
27	Gudale Aishwarya Jaykumar	ETC171827	
28	Gurav Akshay	ETC171828	Garav
29	Gurav Rhusikesh Kumar	ETC171829	Gurav

Mr. V. D. Patil/ Mr. R.R. Suryawanshi
CourseIn-charge

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
Add-on Course
"Network Simulation using NS2"

Student List   Date/Time 29|09|2017

Sr. No.	Name of Student	Course Registration ID Number	Signature
30	Hankare Snehal Dattatray	ETC171830	Shanb
31	Hujare Aishwarya Rangrao	ETC171831	ARHujti
32	Ilake manjiri Sanjay	ETC171832	Mani
33	Inamdar Akshay Avinash	ETC171833	.
34	Kakade Sneha Sunil	ETC171834	Akaye
35	Kamble Akshay Jalindar	ETC171835	AKJ
36	Kamble Jagriti Guruling	ETC171836	
37	Kamble Nikhil Deepak	ETC171837	Nkaule
38	Kamble Nikita Bali	ETC171838	NBKJ
39	Kamble Sandip Vishawash	ETC171839	
40	Karande Rutuja Ramesh	ETC171840	RRKarande
41	Katkar Dipali Vijay	ETC171841	Akatkae.
42	Khangaonkar Ashwini N.	ETC171842	.
43	Killedar Sonali Bajirao	ETC171843	Kiledae
44	Kole Varsha Vijay	ETC171844	V.V.K.
45	Kolekar Nitin Prakash	ETC171845	Kolekar
46	kolekar Sharad Y	ETC171846	Shaell
47	Koli Rohini R	ETC171847	RKoli.
48	Koli Tejas Manohar	ETC171848	Tejas
49	Koli Vishwajeet Suryakant	ETC171849	
50	Konkeri Kedar Balasaheb	ETC171850	KBKei
51	Kulkarni Samiksha Sanjay	ETC171851	
52	Kumbhar Sayali Balaso	ETC171852	Krunkhael
53	Lad Saloni	ETC171853	
54	Lambe Pooja Vilas	ETC171854	Pooja
55	Latake Rohit Vijay	ETC171855	
56	Magdum Aishwarya Pradeep	ETC171856	
57	Mandlik Deepak Prakash	ETC171857	
58	Magadum Nitin Rajaram	ETC171858	Nkmoll

Mr. V.D. Patil/ Mr. R.R. Suryawanshi
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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
Add-on Course
"Network Simulation using NS2"

Student List   Date/Time_____ 24\09\2017 _____

Sr. No.	Name of Student	Course Registration ID Number	Signature
59	Paradip A. More	ETC171859	
60	Sagar A. Khandekar	ETC171860	
61	Dattatray L. Masal	ETC171861	
62	Akash S. Ingle	ETC171862	
63	Suraj V. Gore	ETC171863	
64	Nilesh S. Jadhav	ETC171864	
65	Rutuja S. Kalagate	ETC171865	
66	Shraddha T. Kadam	ETC171866	
67	Poorva R. Ghatge	ETC171867	
68	Yogesh L. Pandhare	ETC171868	
69	Shivam Shinde	ETC171869	
70	Virjit Gharat	ETC171870	
71	Ajay Patil	ETC171871	
72	Supriya M. Patil	ETC171872	
73	Ashwini N. Raut	ETC171873	
74	Sudharani S. Araligid	ETC171874	
75	Seema M. Parit	ETC171875	
76	Suchitra U. Pise	ETC171876	
77	Neha G. Sutar	ETC171877	
78	Indrajeet V. Patil	ETC171878	
79	Pruthviraj N. Patil	ETC171879	
80	Sangram S. Patil	ETC171880	
81	Madhuri S. Ghatage	ETC171881	
82	Rajkuwar S. Bhopale	ETC171882	
83	Madhuri S. Jadhav	ETC171883	
84	Shrikant S. Kambale	ETC171884	
85	Sujay B. Herwade	ETC171885	
86	Arun B. Khatabkar	ETC171886	
87	Mayuri P.Upadhye	ETC171887	

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COLLEGE OF ENGINEERING KOLHAPUR
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
Add-on Course
"Network Simulation using NS2"

Student List Date/Time____2410912017____

Sr. No.	Name of Student	Course Registration ID Number	Signature
88	Sampada Kore	ETC171888	Kore
89	Kaiwalya R. Kulkarni	ETC171889	
90	Priyanka Desai	ETC171890	
91	Rajnandini R. Ghorpade	ETC171891	
92	Aishwarya S. Sadalage	ETC171892	
93	Sayali R. Gaikwad	ETC171893	
94	Pandurang P. Yerande	ETC171894	
95	Vinayak S.Sutar	ETC171895	
96	Viabhav V. Khambe	ETC171896	
97	Aniket S. Padalkar	ETC171897	
98	Abhilash Kamble	ETC171898	
99	Akash G. Patil	ETC171899	
100	Sonal S. Nikam	ETC1718100	
101	Dipali V. Mahadik	ETC1718101	Mahadik
102	Pooja S. Dhanavade	ETC1718102	
103	Aakash P. Adake	ETC1718103	
104	Rahul N. Desai	ETC1718104	
105	Vishal M. Kamble	ETC1718105	
106	Avadhut Powar	ETC1718106	
107	Durgaprasad Zute	ETC1718107	
108	Vinayak S. Sutar	ETC1718108	
109	Rahul R. Parit	ETC1718109	
110	Aniket Gurav	ETC1718110	Gurav

Mr. V. D. Patil/ Mr. R.R. Suryawanshi
Course In-charge

Dr.K.R.Desai
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