A Report

On

3-day National workshop on

"SDN, NFV & Network Programmability using P4"

Organized by

Department of Information Technology and
IEEE Student Branch of PCE

(12th – 14th April, 2019)

Venue:

Poornima College of Engineering, Jaipur

SESSION: 2018-19

DEPARTMENT OF INFORMATION TECHNOLOGY
POORNIMA COLLEGE OF ENGINEERING, JAIPUR

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

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Department of Information Technology

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

1. WORKSHOP BROCHURE:

ABOUT JAIPUR

Jaipur, popularly known as the Pink City of India, is enormously admired tourist destination in Rajasthan. As per the census of 2011 & 2008, it is the 10th largest city of India ranking among the fifty engineering global outsourcing cities. It was founded on 18th November, 1727 by Maharaja Sawai Jai Singh II, the ruler of Amber. It is an enthralling historical city and gateway to India's most flamboyant state. The city is colorful with oscillation of organized architecture unveiling the royal culture, arts and traditions as the heritage of Rajasthan.

ABOUT RAJASTHAN

Rajasthan is the largest state of the Republic of India by Area. It encompasses most of the area of the large, inhospitable Great Indian desert (Thar Desert), which has an edge paralleling the Sutlej-Indus river valley along its border with Pakistan. The state borders Pakistan to the west, Gujarat to the southwest, Madhya Pradesh to the southeast, Uttar Pradesh & Haryana to the northeast & Punjab to the north. Rajasthan covers an area of 3,42,239 sq. km. The Proportion of the state's total area to the total area of the country is 10.41%.

HOW TO REACH WORKSHOP VENUE

Jaipur is one zenith of the popular tourism Golden Triangle circuit Agra-Delhi-Jaipur and is well connected to most parts of India by air, train and road. Poornima College of Engineering is located about 268 km by road & 306 km by train from Delhi. It is situated at the Jaipur, capital of Rajasthan and is encircled by several industries. Jaipur Railway Station and Jaipur Bus Stand are close by and are about 25 km from the workshop venue.

Road Map to Poornima Foundation

PCE - Poornima College of Engg.
PIET - Poornima Inst. of Engg. & Tech.
PGI - Poornima Group of Inst.
PU - Poornima University

DEPARTMENTAL ORGANIZING COMMITTEE

Dr. Sunil Pathak	Professor, Dept. of CSE, PCE
Dr. Sonal Sharma	Associate Professor, Dept. of CSE, PCE
Ms. Shazia Haque	Associate Professor, IT, PCE
Mr. Saurabh Anand	Dy. HoD, Dept. of IT, PCE
Mr. Sunil Gupta	Dy. HoD, Dept. of CSE, PCE
Mr. Vivek Sharma	Dy. HoD, Dept. of CSE, PCE
Mr. Dinesh Chand Gupta	Assistant Professor, IT, PCE
Mr. Sandeep Bhargav	Assistant Professor, IT, PCE
Ms. Sita Gupta	Assistant Professor, IT, PCE
Mr. Manish Kumar Sharma	Assistant Professor, CSE, PCE
Ms. Rajni Sharma	Assistant Professor, CSE, PCE
Mr. Kartik Agrawal	II Year IT, PCE
Mr. Rohit	II Year IT, PCE
Ms. Ria Mehra	II Year IT, PCE
Mr. Keshav Goyal	II Year IT, PCE
Ms. Lovely Jain	II Year IT, PCE
Mr. Sayyam Tamboli	II Year IT, PCE

IEEE STUDENT BRANCH EXECUTIVE COMMITTEE

Dr. Himani Goyal Sharma	Branch Counselor
Mr. Devendra Kumar Somwanshi	Faculty Advisor
Mr. Awanish Mishra	Chair
Mr. Ashutosh Gupta	Vice Chair
Mr. Rajan Sehgal	Secretary
Mr. Shubhang Agarwal	Joint Secretary
Mr. Saini Ankit Suresh	Treasurer
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Mr. Udayver Singh Bhati	Member
Mr. Vishnu Vijay	Member
Mr. Purvaditya Tripathi	Member
Mr. Vinod Kumar	Member
Mr. Vibhuti Narayan Mishra	Member

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Dr. S. M. Seth
Chairman (Emeritus), Poornima Group
(Former Director, National Institute of Hydrology, Roorkee)

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Mr. M.K.M Shah
Director Admin & Finance, Poornima Group

Dr. Mahesh M. Bundele
Principal & Director, Poornima College of Engineering

Mr. Pankaj Dhemla
Vice Principal, Poornima College of Engineering

PROGRAM CHAIRS

Dr. Ajay Khuteta,
Head, Dept. of Computer Engineering, PCE

Mr. Amol Saxena,
Head, Dept. of Information Technology, PCE

CONVENER & CONTACT PERSON

Mr. Shirish Nagar,
Assistant Professor
Dept. of Information Technology, PCE, Jaipur
E-mail: shirishnagar@poornima.org
Mobile: +91 8003514249

NATIONAL WORKSHOP ON SDN, NFV & NETWORK PROGRAMMABILITY USING P4

April 12-14, 2019

Jointly Organized by

IEEE
POORNIMA COLLEGE OF ENGINEERING
IEEE STUDENT BRANCH STB08621

&

Department of Information Technology

POORNIMA COLLEGE OF ENGINEERING
Affiliated to Rajasthan Technical University, Kota & Approved by AICTE, New Delhi

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ISI-6, RIICO Institutional Area, Sitapura, JAIPUR-302022 (Raj.), INDIA
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ABOUT POORNIMA COLLEGE OF ENGINEERING

Poornima College of Engineering (PCE), established as a brand of technical education in the year 2000, has its own glorious legacy of leading the young engineers to the mammoth sky of success. Its accomplishments forecast its journey through the hardships and its triumph over them one after another. PCE left no stone unturned since its establishment in turning the glorious vision into unbelievable reality providing the platform for knowledge and research and their practical implementations in different engineering professional prospects.

Glorious glimpses of PCE:

➢ Highly recognized and renowned affiliated technical institution all over Rajasthan with built up area more than 3.5 lacs square feet
➢ Affiliated to RTU, Kota & approved by AICTE, New Delhi
➢ The most preferred NBA Accredited Engineering College with running of six specializations of Engineering at UG Level (CSE, ECE, EE, ME, IT, CIV) and two at PG level (CS & VLSI)
➢ The only institution permitted by RTU to admit FN/PIO/Gulf students & designated as center of excellence by IBM
➢ An excellent institution building its rapport in all sectors of education, research and development
➢ Successfully executing two MHRD Missions: Quality Enhancement in Engineering Education (Direct to Students) & National Mission on Education through ICT (Direct to Faculty) as an authorized remote center (1107)

ABOUT IEEE & STUDENT BRANCH

Institute of Electrical and Electronics Engineers (IEEE) is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. The organization was formed in 1963. As of 2019, it has over 423,000 members in over 160 countries across the world. The IEEE Student branch of Poornima College of Engineering, Jaipur is actively functioning since May 2011. There are over 2,000 Student Branches in over 100 countries, globally.

OBJECTIVES OF WORKSHOP

1. To make the participants aware of Software Defined Networks, Network Function Virtualization concepts and their implementation aspects.
2. To make them learn implementation of SDN and NFV by using network programming language P4.
3. To provide hands-on practice and practical sessions on Implementing a control plane and data plane, Simulate Network Attack mitigation on pre-defined SDN and P4 use cases.
4. To introduce M-CORD architecture & its insights.

RESOURCE PERSONS

Mr. Rahul Hada, is a Software professional with over 11 years of Academic and Industrial experience. He is presently serving Criterion Networks India (Pvt.) Ltd., Bengaluru as a System Engineer. He has developed network solutions as per PoC and PoV design specifications, and designed the courses and delivered several seminars and workshops in areas of SDN, NFV, P4, NS-3, Open Stack, and Cloud Computing.

Dr. Ritesh P. Patel has received his Doctorate degree in 2017 from CHARUSAT University. He has 14+ years of teaching experience at UG level and concurrently 07+ years of teaching and research experience at PG level. He has guided 600+ students for CCNA. He has guided more than 100+ industry projects at graduate level and 40+ dissertations at Post Graduate level.

ELIGIBILITY

Bachelor's, Master's & Doctoral scholars and the faculty members of Computer Engineering, Information Technology and Electronics & Communication are eligible to attend the workshop.

REGISTRATION FEES

Participants	Fees
Internal (PGC Faculty / Students)	Rs. 800/-
IEEE Members - External	Rs. 1000/-
Non-IEEE – External	Rs. 1200/-

The registration fee is to be paid in the form of Demand Draft drawn in favour of "Poornima College of Engineering" payable at Jaipur or in cash at Poornima College of Engineering office.

ACCOMMODATION

Accommodation for limited outside participants will be available in hostels. The charges for hostel accommodation are Rs. 500/- per day. The rooms can be booked on first come first serve basis.

WORKSHOP SCHEDULE

DAY 1: FRIDAY, 12TH APRIL 2019

Time	Session
8:00 - 8.30AM	Registration
8:30 - 9:40 AM	Inaugural Ceremony
9:40 – 9:55 AM	HIGH TEA
9:55 - 11.55 AM	Session-I: Introduction to Traditional Networking Concepts
12:00 -12:20 PM	LUNCH BREAK
12:20 - 2.20 PM (Hand on Session)	Session-II: Simulation using Cisco Packet Tracer
	Session-III: Traditional Network Challenges & Opportunities, Evolution of SDN concept , NFV
4:00 - 4:15 PM	TEA BREAK
4:15 to 6:15 PM (Hand on Session)	Session-IV: Implement Control and Data Plane using Open Flow, Mininet Tool, WAN & Data Center Use Cases

DAY 2: SATURDAY, 13TH APRIL 2019

Time	Session
8:30 - 9.30 AM (Hand on Session)	Session-I: South Bound Interface (Introduction to OF 1.0 - 1.3,& challenges) , North Bound Interface (REST API), East / West Interface (BGP/OSPF Routing)
9:30 - 10.30 AM	Session-II: Concept of ASIC and Fixed Function pipeline
10:30 -10:45 AM	TEA BREAK
10:45 AM-12:45 PM (Hand on Session)	Session-III: Introduction to P4 Language, Architecture, advantages, Implementing SDN using P4 Language
12:45 -1:10 PM	LUNCH BREAK
1:10-3:10 PM (Hand on Session)	Session-IV: P4 Tutorials, Core component of P4Lang and P4Runtime
3:10 -3:25 PM	TEA BREAK
3:25 to 5:25 PM	Hands on Exercises on P4/ Use Case work

DAY 3: SUNDAY, 14TH APRIL 2019

Time	Session
8:30 - 10.30 AM	Session-I: DDoS Network Attack Mitigation using P4
10:30 -10:45 AM	TEA BREAK
10:45 AM-12:45 PM	Session-II: M-CORD Architecture, Open source contribution in M-CORD
12:45-1:10 PM	LUNCH BREAK
1:10 to 2:10 PM	Hands on Exercises / Use Case work/ Query Resolution /
2:10 – 3:00 PM	Valedictory and Concluding Ceremony with Vote of Thanks

REGISTRATION FORM

NATIONAL WORKSHOP ON SDN, NFV & NETWORK PROGRAMMABILITY USING P4

April 12-14, 2019

Name ....
(In block letters)
Designation ....

Category: Bachelor's /Master's / Doctoral Student / Faculty / Industry Professional

Academic Qualification:
Experience: a. in teaching: .... yrs
                     b. in industry: .... yrs
Residential Address: ....
....
....

Communication Details:
Mobile: ....
E-mail: ....
Gender: Male / Female
Do you need Accommodation: Yes/ No
Details of Payment: DD No _____ / Cash

Date: Signature of the Applicant

Mr./Ms./Mrs./Dr. ....
is working as...
in the department of...
at our Institute. I hereby sponsor him/ her to attend the Workshop on duty for the entire duration.

Signature of Sponsoring Authority with Seal

SAVE WATER   SAVE ENERGY   SAVE ENVIRONMENT   SAVE LIFE   SAVE EARTH   SAVE TREES   SAVE FUEL   SAVE ELECTRICITY
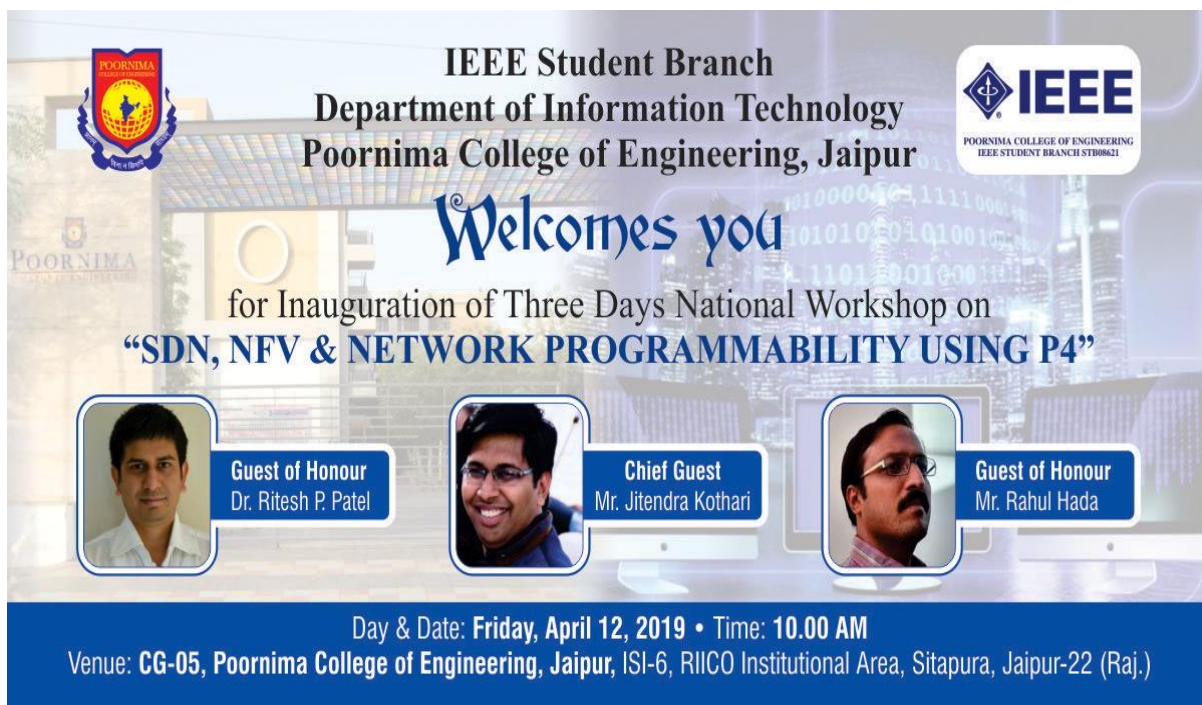
2. WORKSHOP POSTER:

3. WORKSHOP OBJECTIVES

The objectives of the workshop are:

A) To make the participants aware of Software Defined Networks, Network Function Virtualization concepts and their implementation aspects.

B) To make them learn implementation of SDN and NFV by using network programming language P4.

C) To provide hands-on practice and practical sessions on Implementing a control plane and data plane, simulate Network Attack mitigation on pre-defined SDN and P4 use cases.

D) To introduce M-CORD architecture & its insights.

4. BRIEF BIODATA OF RESOURCE PERSON

Workshop trainers **Mr. Rahul Hada** (System Engineer, Criterion Networks, Bengaluru) and **Dr. Ritesh P. Patel** (Professor, Charusat University, Gujarat). **Mr. Jitendra Kothari**, Sr.

Department of Information Technology

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

Manager, Appirio India Cloud Solutions Pvt. Ltd. & **Dr. Himani Goyal Sharma**, Counselor, IEEE Student Branch, PCE.

5. ABSTRACT OF THE WORKSHOP

A brief report of a 3-day National workshop on "SDN, NFV & Network Programmability using P4" organized by Department of Information Technology and IEEE Student Branch of PCE from 12th – 14th April, 2019 at PCE Campus

A 3-day National workshop on **"SDN, NFV & Network Programmability using P4"** was organized by **Department of Information Technology** and **IEEE Student Branch of PCE** from 12th to 14th April, 2019 at PCE Campus. The resource persons of the workshop were **Dr. Ritesh Patel Prof. Charusat University, Gujrat** and **Mr. Rahul Hada System Engineer, Criterion Networks, Bangalore**. The workshop was attended by 28 participants including 20 students, 6 faculty members and 2 research scholars from various institutes of Jaipur. The chief guest of the inaugural ceremony was **Mr. Jitendra Kothari, Sr. Manager, Appirio India Cloud Solutions Pvt. Ltd. (A Wipro Company)**. The inaugural ceremony also witnessed the presence of **Dr. Mahesh Bundele Principal & Director-PCE, Sh. Pankaj Dhemla Vice-Principal, PCE, Dr. Ajay Khunteta HoD-CE, PCE**, **Mr. Amol Saxena HoD-IT** and **Mr. Shirish Nagar Asst. Prof-IT & Workshop Convener.**

Mr. Shirish Nagar – Workshop Convener welcomed the chief guest, workshop trainers, college dignitaries and distinguished participants in his opening welcome address. He also gave the briefing of the 3-day programme. He urged the participants to be regular and dedicated to harness the maximum outcome of this workshop as per vision of the College Management.

Dr. Mahesh M. Bundele, Principal and Director, PCE emphasized on the need of learning new technologies and tools for consistent professional growth of students, research scholars and faculty members. He mentioned that students should take up such workshops sincerely as it would help them in developing projects in II, III and IV year of engineering. Dr. Bundele announced that many such workshops under different focus areas of Departments of IT and CE will be organized to fine-tune the skill-set of engineering students of PCE.

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Workshop trainers Mr. Rahul Hada (System Engineer, Criterion Networks, and Bengaluru) and Dr. Ritesh P. Patel (Professor, Charusat University, and Gujarat) welcomed the initiative taken up by the Poornima College of Engineering to uplift the technical understanding of students and faculty members. They also informed students of avenues of internships and employability in the area of Software Defined Networking and P4 Programming Language. Mr. Hada mentioned that high enthusiasm is the key to learn new technologies in the changing employment scenario. Dr. Patel stated that it is extremely vital to attend such workshops and seminars for bridging the gap between academia and IT companies' requirements.

Mr. Jitendra Kothari, Sr. Manager, Appirio India Cloud Solutions Pvt. Ltd. chief guest of inaugural ceremony emphasized in his address that faculty members and students need to update themselves with latest trends and technologies. **Mr. Kothari** congratulated college management for hosting such a workshop on the topic of SDN, NFV & P4 which is a latest technological development in the field of computer networking. **Mr. Kothari** further added that these technical events are very important for employability enhancement of students.

Dr. Himani Goyal Sharma, Counselor, IEEE Student Branch, PCE presented an overview of IEEE Student Branch, PCE. She specified constitution of IEEE student branch at PCE and summarized the recently held activities under this banner. In the end she proposed Vote of Thanks to the management of Poornima Group, college authorities, organizing committee, chief guest, trainer and the participants.

Department of Information Technology

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

6. GLIMPSE

A) Inaugural Ceremony

Department of Information Technology

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

Workshop on "SDN, NFV & Network Programmability using P4"

Department of Information Technology

Workshop on "SDN, NFV & Network Programmability using P4"

The valedictory ceremony of the workshop was held on **14th April-2019 (Sunday)** from 3:15 to 4:15 pm in which participation certificates were distributed to the participants. The ceremony witnessed the kind presence of **Dr. Mahesh Bundele Principal & Director-PCE**, the trainers **Dr. Ritesh Patel** and **Mr. Rahul Hada, Mr. Amol Saxena HoD-IT and Mr. Shirish Nagar – Workshop Convener.**

B) Valedictory Ceremony

Department of Information Technology

Workshop on "SDN, NFV & Network Programmability using P4"

C) Workshop Sessions:

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Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

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D) Media Coverage:

7. LIST OF PARTICIPANTS

S. No.	Name of Participant	Designation	Organization
1	Mr. Amol Saxena	Assistant Professor	PCE
2	Mr. Sandeep Bhargava	Assistant Professor	PCE
3	Mr. Vivek Sharma	Assistant Professor	PCE
4	Mr. Vishal Choudhary	Associate Professor	PCE
5	Mr. Jayesh Kumar Agrawal	Student	PCE
6	Mr. Madhur Jain	Student	PCE
7	Mr. Mudit Chopra	Student	PCE
8	Mr. Nimish Mittal	Student	PCE
9	Mr. Omendra Singh Rajpoot	Student	PCE
10	Mr. Prakhar Ghatia	Student	PCE
11	Mr. Praveen Kumar Dakua	Student	PCE
12	Ms. Harshita Pareek	Student	PCE
13	Ms. Reema Rani	Assistant Professor	PU
14	Dr. Ayush Sogani	HoD, BCA	PU
15	Ms. Neeraj	PhD Scholar	PU
16	Ramesh Chand Meena	PhD Scholar	PU
17	Manish Saini	Student	PU
18	Mr. Parth Khemka	Student	PU
19	Mr. Piyush Agarwal	Student	PU
20	Mr. Raghav Mehrotra	Student	PU
21	Mr. Rahul Singh	Student	PU
22	Mr. Raj Sharma	student	PU
23	Mr. Sachin Kumar Shakya	Student	PU
24	Mr. Sagar Sharma	Student	PU
25	Mr.Priyanshu Sharma	Student	PU
26	Ms. Tanya Agarwal	Student	PU
27	Ms.Karina Lakhani	Student	PU
28	Mr. Pranav Gaur	Student	VIT

Department of Information Technology

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR

8. PARTICIPANTS' FEEDBACK

A) Content of the workshop is rated as

   a) Excellent by 66.67% of participants

   b) Good by 30.25% of participants

   c) 0.62% say needs improvement

   d) 2.47% have not responded

B) Presentation of the workshop is rated as

   a) Excellent by 77.78% of participants

   b) Good by 22.22% of participants

C) Management/ Administration of the workshop is rated as

   a) Excellent by 67.59% of participants

   b) Good by 28.7% of participants

   c) 3.7% say need improvement

D) Overall Workshop is rated as

   a) Excellent by 59.26% of participants

   b) Good by 40.74% of participants

E) How could this workshop be improved?

   a. Workshop should be extended to more days (2 to 3 days).

   2. More content & new research work can be shared in future

   3. Focus should be on basic than advanced level.

   4. Performance and effectiveness can be improved by giving more time for practice sessions and to implement concepts.

F) Any other comments / suggestions

   a. We would like to have such more workshops in future

   2. More hands on Wire shark, Cisco packet tracer, minuet etc.

   3. Language and fundamental can be enhanced in effective manner.

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Poornima College of Engineering
ISI-6, RIICO Institutional Area
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9. Q-SHEET:

A) Inaugural Ceremony

3-DAY NATIONAL WORKSHOP ON
"SDN, NFV & Network Programmability using P4"
(April 12-14, 2019)
Inaugural Session Schedule
Friday, 12th April 2019
Timing 10:00 AM – 11:10 AM
Venue: CG-05, Seminar Hall, PCE

S. No.	Activities	Time	Faculty/Dignitaries
1	Seating of Faculty members, Participants and Students	9:45-10:00 AM	
2	Arrival of Dignitaries	10:00 AM	
3	Welcome of Dignitaries ➢ **Chief Guest: Mr. Jitendra Kothari,** Manager, Appirio India Cloud Solutions ➢ Dr. Mahesh M. Bundele, Principal & Director, PCE ➢ Sh. Pankaj Dhemla, Vice Principal, PCE ➢ *Guest of Honor - Experts:* Mr. Rahul Hada, Dr. Ritesh Patel ➢ Dr. Ajay Khuteta, HoD, CS, PCE ➢ Mr. Amol Saxena, HoD, IT, PCE	10:00-10:05 AM	Anchors
4	Lighting of Lamp by Dignitaries	10:05-10:08 AM	All Dignitaries
5	Felicitation of Dignitaries by bouquets and mementoes	10:08-10:10 AM	1. Mr. Jitendra Kothari by Dr. Ajay Khuteta 2. Mr. Rahul Hada by Mr. Amol Saxena 3. Dr. Ritesh Patel by Mr. Shirish Nagar
6	Welcome Address	10:10-10:15 AM	Mr. Shirish Nagar, Workshop Convener
7	Introduction of Principal & Director, PCE	10:15-10:17 AM	Anchors
8	Address by Principal & Director, PCE	10:17-10:27 AM	Dr. Mahesh M. Bundele
9	Introduction of Guest of Honor	10:27-10:29 AM	Anchors
10	Address by Guest of Honor	10:29-10:37 AM	Mr. Rahul Hada, Criterion Networks, Bengaluru
11	Introduction of Guest of Honor	10:37-10:39 AM	Anchors
12	Address by Guest of Honor	10:39-10:47 AM	Dr. Ritesh Patel, Professor, Charusat University, Gujarat
13	Introduction of Chief Guest	10:47-10:50 AM	Anchors

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14	Address by Chief Guest	10:50-11:00 AM	Mr. Jitendra Kothari, Manager, Appirio India Cloud Solutions Pvt. Ltd.
15	Overview of IEEE Student Branch, PCE and Vote of Thanks	11:00-11:05 AM	Dr. Himani Goyal Sharma, Counselor, IEEE Student Branch, PCE
16	Group Photograph	11:05-11:10 AM	Outside CG-05

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B) Q-sheet of valedictory ceremony

3-DAY NATIONAL WORKSHOP ON
"SDN, NFV & Network Programmability using P4"
(April 12-14, 2019)

Valedictory Session Schedule
Sunday, 14th April 2019
Timing 3:00 PM – 3:50 PM
Venue: CG-05, Seminar Hall, PCE

S. No.	Activities	Time	Faculty/Dignitaries
1	Seating of Faculty members, Participants and Students	2:55-3:00 PM	
2	Arrival & Welcome of Dignitaries ➤ Dr. Mahesh M. Bundele, Principal & Director, PCE ➤ Sh. Pankaj Dhemla, Vice Principal, PCE ➤ *Guest of Honor - Experts:* Mr. Rahul Hada, Dr. Ritesh Patel ➤ Mr. Amol Saxena, HoD, IT, PCE	3:00-3:05 PM	Anchors
3	Presentation of Workshop Report	3:05-3:10 PM	Mr. Shirish Nagar, Workshop Convener
4	Address by Expert	3:10-3:15 PM	Mr. Rahul Hada, Criterion Networks, Bengaluru
5	Experience Sharing External Participant (from VIT)	3:15-3:17 PM	Mr. Pranav Gaur
6	Certificate Distribution Ceremony	3:17-3:30 PM	9 Awards by Mr. Raul Hada 9 Awards by Dr. Ritesh P. Patel 10 Awards by Dr. Mahesh M. Bundele Anchors
7	Address by Expert	3:30-3:35 PM	Dr. Ritesh Patel, Professor, Charusat University, Gujarat
8	Experience Sharing Participant (from PU)	3:35-3:37 PM	Any PU Student
9	Experience Sharing Participant (from PCE)	3:37-3:39 PM	Any PCE Student
10	Experience Sharing by a PU Faculty	3:39 – 3:42 PM	Dr. Ayush Sogani
11	Address by Principal & Director	3:42-3:50 PM	Dr. Mahesh M. Bundele, Principal & Director, PCE

Department of Information Technology

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B.E., M.E., Ph.D.
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10. WORKSHOP SCHEDULE

3-DAY NATIONAL WORKSHOP ON
"SDN, NFV & Network Programmability using P4"
(April 12-14, 2019)

WORKSHOP SCHEDULE
(Workshop Venue: IBM – LAB A, PCE)

DAY 1: FRIDAY, 12TH APRIL 2019	
8:30 - 10.00AM	Registration
10:00 - 11:10 AM	Inaugural Ceremony (Venue – CG-05 Seminar Hall, PCE)
11:10 – 11:25 AM	HIGH TEA
Venue for all further sessions – IBM Lab – A, PCE	
11:25 - 1.00 PM	**Session-I -** Introduction to Traditional Networking Concepts
1:00 - 1:20 PM	LUNCH BREAK
1:20 - 3.20 PM *(Hand-On Session)*	**Session-II -** Simulation using Cisco Packet Tracer
3:20 – 4:30 PM	**Session-III -** Traditional Network Challenges & Opportunities, Evolution of SDN concept , NFV
4:30 - 4:45 PM	TEA BREAK
4:45 to 6:15 PM *(Hand-On Session)*	**Session-IV -** Implement Control and Data Plane using OpenFlow, Mininet Tool, WAN & Data Center Use Cases
DAY 2: SATURDAY, 13TH APRIL 2019	
8:30 - 9.30 AM *(Hand-On Session)*	**Session-I -** South Bound Interface (Introduction to OF 1.0 - 1.3,& challenges) , North Bound Interface (REST API), East / West Interface (BGP/OSPF Routing)
9:30 - 10.30 AM	**Session-II -** Concept of ASIC and Fixed Function pipeline
10:30 -10:45 AM	TEA BREAK
10:45 AM-12:45 PM *(Hand-On Session)*	**Session-III -** Introduction to P4 Language, Architecture, advantages, Implementing SDN using P4 Language
12:45 -1:10 PM	LUNCH BREAK
1:10-3:10 PM *(Hand-On Session)*	**Session-IV -** P4 Tutorials, Core component of P4Lang and P4Runtime
3:10 -3:25 PM	TEA BREAK
3:25 to 5:25 PM	Hands on Exercises on P4/ Use Case work
DAY 3: SUNDAY, 14TH APRIL 2019	
8:30 - 10.30 AM	**Session-I-** DDoS Network Attack Mitigation using P4
10:30 -10:45 AM	TEA BREAK
10:45 AM-12:45 PM	**Session-II-** M-CORD Architecture, Open source contribution in M-CORD
12:45-1:10 PM	LUNCH BREAK
1:10 to 2:10 PM	Hands on Exercises / Use Case work/ Query Resolution /
2:10 – 3:00 PM	Valedictory and Concluding Ceremony with Vote of Thanks

Department of Information Technology

11. Registration Form

POORNIMA
COLLEGE OF ENGINEERING

ISI-6, RIICO Institutional Area, Sitapura, Jaipur (Rajasthan) 302 022, INDIA
Registration Form
National Workshop
On
SDN, NFV & NETWORK
PROGRAMMABILITY USING P4
April 12-14, 2019
(Friday-Sunday)

Name (in BLOCK letters): _____

_____

Designation……………………………………………………………………………………

………………………………………………………………..

Category: Bachelor's/Master's / Doctoral Student / Faculty / Industry Professional

Academic Qualification:

Experience (in years)   **:** a. in teaching: ………….……   yrs

                                              b. in industry : …..………….…..   yrs

Residential Address   **:**

_____
_____
_____

Communication Details   **:** Mobile: ☐☐☐☐☐☐☐☐☐☐

Whatsapp Mobile No: ☐☐☐☐☐☐☐☐☐☐

E-mail   : …………………………………..

Gender   **:** Male / Female

Do you need Accommodation: Yes/ No

Details of Payment   :   DD No_____/ Cash

Date:

                                                              (Signature of the Applicant)

Mr./Mrs./Dr.……………………………is working as…………….………………in the department of…………………………………at our Institute. I hereby sponsor him/her to attend the Workshop on duty for the entire duration.

                                                  (Signature of Sponsoring Authority with Seal)

Department of Information Technology

Dr. Mahesh Bundele
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RIICO Institutional Area
Sitapura, JAIPUR