Report of event of Lean Six Sigma Green Belt Certification Course Date: 11/02/23 to 08/04/23

P.E. Society's MODERN COLLEGE OF PHARMACY. Yamunanagar, Nigdi, Pune-44



















Lean Six Sigma Green **Belt Certification** Course

All students hereby inform that college has started "lean six sigma green belt certification course"at college campus from 11.02.2023 to 08.04.2023.

DR. K. S. SHAIKH HEAD T & P



AUDHARI

P.Principah!

E. S. Modern College of Pharmacy Sector No.21, Yamunanagar, Nigdi, Pune - 411 044.

P. E. Society's Modern College of Pharmacy, Nigdi, Pune. Academic Year 2022-23

Date: 22/05/2023

Department of Pharmaceutical Quality Assurance

Notice

This is to inform to all registered students of Lean Six Sigma Green Belt Value addition Course that your final examination is scheduled on 26th May 2023 from 11:00 am to12.00 Pm. The seating arrangement will be in classroom no 3 to 6, first floor. All should present 15 min before at examination hall. All should carry college ID card.

Oros.

Dr. K, S, Shaikh (H.O.D.PQA) Dr. P. D. Chaudhari (Principal)

Copy to-Academic Section All HOD Exam Section



LEAN SIX SIGMA GREEN BELT For QBD.

Department of Pharmaceutical Quality Assurance of PES's Modern College of Pharmacy, Nigdi, India in association with Mr. Santosh D. Awasarkar, Lean Six Sigma MBB, CEO-Founder @ Breath Apex IFP, India, under Centre For Pharma Business Excellence (CPBE) -CSSC, USA Accredited had conducted value addition certificate course of LEAN SIX SIGMA GREEN BELT For OBD.

Lean Six Sigma For Quality by Design (QBD) principles have been adopted by the USFDA for the discovery, development, and manufacture of drugs. Infact, global regulatory bodies- USFDA, EMEA made it mandatory for drug manufacturers to implement QBD Compliances into their new drug applications. ICH Guidelines-Q8, Q9, Q10 emphasizes QBD implementations. QBD principles in regulatory submissions ensures less hassle during review, fewer deficiencies leading to quicker approvals, fewer manufacturing problems, reduced number of post-market manufacturing supplements. QBD enhances ability to implement new technology that improves manufacturing without regulatory scrutiny. Set of expertise of Lean Six Sigma (DFSS-DMADV, DOE, SPC in QbD will create a synergy to deploy a structured statistical approach in designing & developing quality product. Hence, every global &Indian Pharma/ Biotech company need experts who can advise & deploy these high in demand skillsets.

The course was designed for Final Year B. Pharmacy and M.Pharm First year & Second Year. It was conducted in two batches. The first batch was conducted on following dates 11/02/2023, 12/2/2023, 18/02/2023, 19/02/2023, 11/03/2023. The second batch was conducted on 16/03/2023, 17/03/2023, 18/03/2023, 19/03/2023, 1/04/2023, 02/04/2023, 08/04/2023. During this course following 18 modules were conducted. Total 190 Students successfully completed the course

- · What is QBD
- Principles of ICH Q8 CR2), (ICH Q9), (ICH Q10)
- · Definition of QTPP, CQAs, CPPs, CMAs.
- Importance & History of Quality by Design (QbD)
- Lean Six Sigma. DMADV (Define, Measure, Analyze, Design, Verify) vs. DMAIC (Design, Measure, Analyze, Implement & Control);
- Determining Critical Quality Attributes (CQAs) based on Product Quality, Patient Safety
 & Efficacy. VOC Drill down, Critical-to- quality or Critical-to- safety, Critical-to-efficacy,

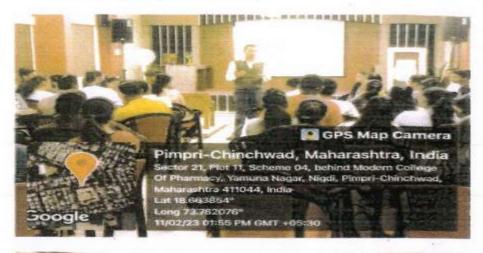
- High Level Process Mapping & Fishbone Diagram. Risk Analysis With Failure Modes Effects Analysis (FMEA) & Pareto Analysis,
- Process Lever Diagnostics Design. Project Charter, Problem Statement & Goal Statement,
 Project Scoping, Est. Project Benefit / Project QNS, Developing Performance Standard
 Documents.
- Project Communication: RACI Model (Responsible, Accountable, Consulted & Informed) FMEA, CI Matrix Driven Prioritization Of Critical Material Attributes (CMAs) & Critical Process Parameters (CPPs) With respect to CQAs.Principles,
- History & Types of DOE Designs, Full Factorial Design, Randomization, Replication, Repetition. Develop DoE Design Space, Deployment & Measurement of Responses(s),
- Development of regression model to Verify Design Space. Hypothesis testing, p value, Alpha value, Regression Coefficient, R Square Analysis, DOE Descriptive analysis: Pareto Plot, Main Effect Plot,
- Interaction Effect Plot & Cube Plots. Statistical Inferential Analysis: Analysis of Model Variance. CMAs / CPPs Optimization With Respect To CQAs. Process Improvement Statistical Validation With 2 Proportion Test.
- Determination Of Process Capability: Measurement Of Process Performance Indices-DPMO, DPU, DPO, SIGMA (LT & ST).
- Prediction Of Process Capability. Process Design Scale Up & Development Of Control Plan: Monitoring Plan & Response Plan For CMAs, CPPs, & CQAs.
- Statistical Process Control: Control Charts, Combined Control Charts, Selection & Application Of Attribute Control Charts: Control Charts (p chart, nP chart). Process Control Validation & Determination of Process Capability.

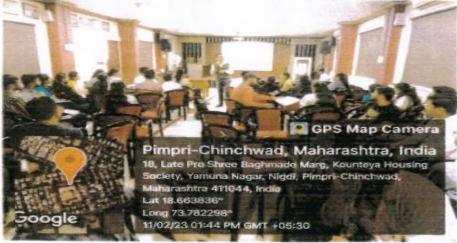
During the conduct of course Mr.Santosh Awsarkar explained the various topics in detail. The course is very useful for Pharmacy professional. The students were very much engaged during this course. The final examination was conducted on 26/05/2023 at college. The college has taken feedback from each student about the course. The feedback was excellent about overall conduct of course. Every student who passed the examination was awarded with a certificate.



Batch I Day 1:

 Module: What is QBD.Principles of ICH Q8 CR2). (ICH Q9). (ICH Q10) "Definition of QTPP, CQAs, CPPs, CMAs. "Importance & History of Quality by Design (QbD), Lean Six Sigma. DMADV (Define, Measure, Analyze, Design, Verify) vs. DMAIC (Design, Measure, Analyze, Implement & Control);



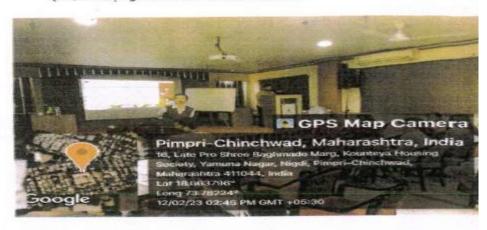


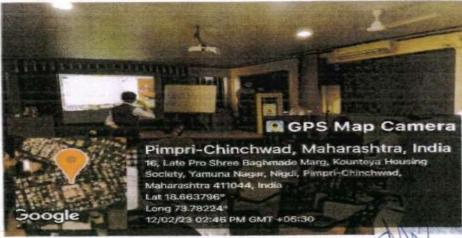
Mr. Santosh Awsarkar at the introductory session explaining important modules



P. E. S. Motern College of Pharma Sactor No. 21 Vanningspaper Mine

• Module Determining Critical Quality Attributes (CQAs) based on Product Qual Patient Safety & Efficacy. VOC Drill down, Critical-to- quality or Critical-to- safe Critical-to- efficacy, Critical-to- delivery, Critical-to- cost), VOP, SIPOC, High Le Process Mapping & Fishbone Diagram.Risk Analysis With Failure Modes Effe Analysis (FMEA) & Pareto Analysis, Process Lever Diagnostics Design.Project Char Problem Statement & Goal Statement, Project Scoping, Est. Project Benefit / Proj QNS, Developing Performance Standard Documents

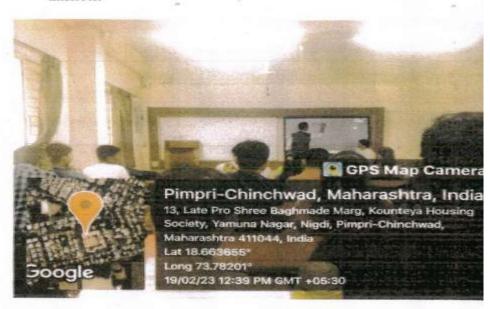






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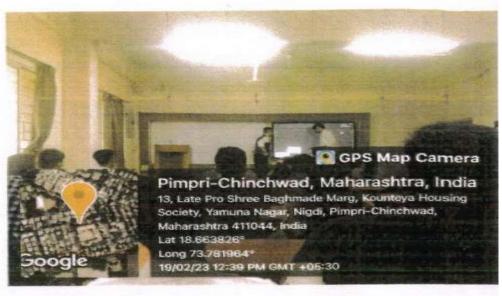
Module Project Communication: RACI Model (Responsible, Accountable, Consulted Informed) FMEA, CI Matrix Driven Prioritization Of Critical Material Attribut (CMAs) & Critical Process Parameters (CPPs) With respect to CQAs.Principles. Histo & Types of DOE Designs, Full Factorial Design, Randomization, Replication, Repetitic Develop DoE Design Space, Deployment & Measurement of Responses(s) Developme of regression model to Verify Design Space. Hypothesis testing, p value, Alpha value Regression Coefficient, R Square Analysis, DOE Descriptive analysis: Pareto Plot, Ma Effect Plot

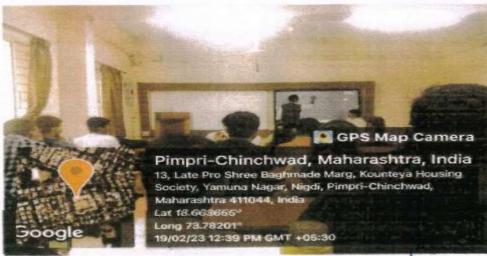


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 Module Interaction Effect Plot & Cube Plots. Statistical Inferential Analysis: Analysis of Model Variance. CMAs / CPPs Optimization With Respect To CQAs. Process Improvement Statistical Validation With 2 Proportion Test.





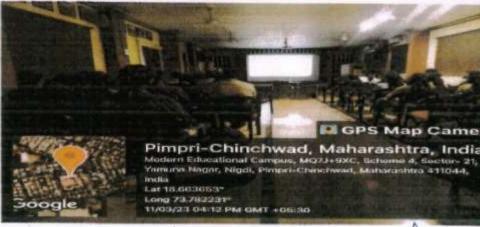


Principal

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Pune - 411 044.

Module: Determination Of Process Capability: Measurement Of Process Performance Indices-DPMO, DPU, DPO, SIGMA (LT & ST)., Prediction Of Process Capability. Process Design Scale Up & Development Of Control Pian:- Monitoring Pian & Response Pian For CMAs, CPPs. & CQAs. Statistical Process Control: - Control Charts, Combined Control Charts, Selection & Application Of Attribute Control Charts: Control Charts (p chart, nP chart). Process Control Validation & Determination of Process Capability







Principal

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Puna - 411 044.

3.Lean Six Sigma Green Belt Certification Course (Attendance)



Progressive Education Society's

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Directorate of Technical Education, Number (MS), Permanently affiliated to
Savitribal Phule Pune University, Pune & Approved under Section (2.(f) 2-12-15) of USC AG. (1935)

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Prof. Dr. P. D. Chaudhari M.Pharm., Ph.D. Principal

Prof. Dr. Gajanan R. Chote M.S. M.M.A.M.S. Chaliman, Business Council P.E.Society, Pune

Sr. No	Name of Students	Sign
182	Sanjana Dole	Se-
183	Shubham Humnabadkar	-Shugham
184	Kartik Yenkure	kor tik
185	Kadambari Shinde	Williamor
186	Lalit Sargar	WH
187	Samarth Shinde	Shurde
188	Dnyneshwar Bende	Desarchuser
189	Krishna Halne	Kinghow:
190	Ganesh Kudke	May -

Dr. K. S. Shaikh

HOD Dept of PQA

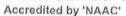
Mr. Santosh D Awasarkar Director @ Pursullence, GBS, LLP Br. P.D. Chandhari Principal

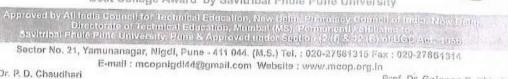
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Prof. Dr. Gajanan R. Ekbete M.S. M.N.A.M.S. Chairman, Business Council P.E.Society, Pune

Sr. No	Name of Students	Sign
144	Shivam Anil Chaudhari	Strichore
145	Akansha Gangadhar Telang	Celans
146	Nitesh Rajendra Misal	OTELS.
147	Vimaji Goradwar	(Cerraduer
148	Siddhant Fulchand Gaikwad	Gulkund
149	Anjali Raju Wasule	Conerde
150	Sarvade Ajinkya Anil	GARGORALE
151	Meghana Nitin Patit	Garmale
152	Shinde Shubhangi	Oct I
153	Majgaonkar Manali Mahadev	Marali
154	Shraddha Shivlat Jadhav	Lumbres
155	Ashish Hanmant Shinde	Printer
156	Ajinkya Prakash Salve	Shirtle
157	Snehal Borude	Bake
158	Dipali Sanjay Thete	Dirali S.T.
159	Harshal Sanjay Jagtap	Marshal -
160	Waghire Nikhil Ravindra	Nichil
161	Priyanka Pandurang Tandlekar	Amero
162	Aparna Patil	A patil
163	Deshpande Shubham Sharad	38 Deshround
164	Prajakta Bajrang Jagtap	Prouker
165	Rutuja Udhav Gaikwad	Wolawa Va
166	Prathmesh Ashok Nale	nave
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168	Pranali Anandrao Bhandare	pronali H
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Prof. Dr. P. D. Chaudhari M.Pharm., Ph.D. Principal Prof. Dr. Gejanen R. Cobote M.S. M.R.A.M.S. Chairman, Business Council P.E.Soctety, Pure

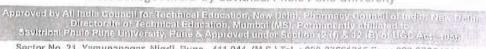
Sr. No	Name of Students	Sign
107	Harshal Rajesh Patil	Mashar
108	Vishal Annasaheb Vare	Vishal
109	Gaikwad Shraddha Prakashrao	@Exaggpa
110	Virendrakumar Madhukar Kamble	VI
111	Dnyaneshwari Ravindra Chopade	- Tout
112	Prerana Ganesh Bambale	Dia-
113	Shilpa Sanjaykumar Biradar	GE Bora day
114	Yashoda Navnath Tidke	YAZ
115	Darshana Harishchandra Wani	Dall
116	Jadhay Sidheshwar Lobhaji	1
117	Salunkhe Manisha Sanjay	smeshali.
118	Sneha Satish Jadhav	stable
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121	Ghotekar Kalyani Shantaram	akohom tan
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125	Mayuri Shashikant Borbane	broken.
126	Khorde Rushikesh Vikram	100
127	Wankhade Shefali Dineshrao	(clech-
128	Akshata Balaji Birajdar	Akghete
129	Khushboo Chaudhary	Krighhou
130	Vaishali Chitta	VALERO
131	Rutuja Wayal	a Rutuja
132	Ruchika Dayashankar Gupta	(payetest
133	Samruddhi Ganesh Ingle	Strait
134	Samiksha Sanjay Patokar	AKGLOKSHO
135	Akanksha Vijay Patil	FILE
136	Anushri Ashok Deulkar	Acmoni
137	Pratik Balasaheb Suryawanshi	Buch
138	Rutuja Satish Sonawane	Rutura
139	Mahesh Mukund Pekamwar	Make she
140	Nikita Salunke	Nik Has.
141	Chavan Pooja Ramrao	Boola_
142	Yogish Dharmdas Garhwani	Tolon
143	Harshada Jilendra Chattar	Gentrice





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Sr. No	Name of Students	Sign
69	Chavhan Ankush Laxman	San
70	Samadhan Kisan Tupe	Gene
71	Vanve Shubham Balu	Brusher
72	Abhishek Maskare	AbhiM
73	Abhishek Nagure	abhiche
74	Dnyaneshwar Rajendra Bembde	Rajondro
75	Ajay Jagannath Dhapate	Alay
76	Rahul Balasaheb Andhale	Jahrel
77	Saurav Dilip Pawar	Sauray
78	Prathamesh Babanrao Badhe	Juli
79	Gavali Kartik Rajendra	The Link of the
80	Shrinath Shantinath Waghmare	Shripath
81	Akshay Deo	Dec.
82	Nikita Ganpat Pawar	119k91 a
83	Raviraj Balasaheb Shinde	Skids
84	Truptee Hiralal Banakar	Julalou-
85	Nikhita Dattatray Kumbhar	Runtias
86	Rahul Ramdas Gambhire	Pahula
87	Ajay Prakash Patange	Faretede
88	Gayatri Jaising Gadekar	Gust and
89	Prajakta Dilip Tambe	- Livey ayen
90	Sarvesh Sanjay Yeole	Sanrich
91	Ganjure Kaveri Uddhav	GHET
92	Sneha Nandkumar Rashinkar	Speke
93	Priyanka Dadabhau Pote	Total
94	Gadhave Trupti Bhausaheb	Tupti
95	Bhagirathi Narayan Bhale	Bhagrathi.
96	Mayuri Bharat Suryawanshi	- Car
97	Geeta Anil Anawade	Anutal .
98	Bhand Nitin Machhindra	NETTA
99	Desai Ganesh Shivanand	- phone let eath
100	Dhamankar Divya Madhukar	Dryga
101	Gaurav Arun Mahajan	Mahajan
102	Tushar Mahesh Phalke	PR
103	Swapnii Tarate	moses
104	Pooja Bharat Salgar	Mare
105	Vaishnavi Suresh More	Vans
106	Deshpande Shubham Sharad	ghhoura





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Directorate of Technical Education, Mumbai (MS), Parmerent shiftlened to
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Sr. No	Name of Students	Sign
31	Patil Ankita Pradeep	Ankiba
32	Neha Barade	klenel
33	Shirsathsanket	Enview
34	Godbharle Amrut	MATRIA
35	Shravani Pandurang Agalave	- toani
36	Mohsin Masocri	woterin.
37	Pratiksha Kantilal Hajare	Ratikan
38	Dhanashri Vikram Katkar	Latitela
39	Nikita Gangaram Pawar	Objected
40	Surabhi Shivaji Shinde	Reno
41	Kajal Sunil Pawade	Kajal
42	Sawant Pooja Nana	Samant P.H.
43	Madhuri Ashok Gangurde	molani
44	Animesh Ramkrushna Patil	(Pasidad.
45	Nagalapur Pooja Prabhu	Poula
46	Abhijit Balasaheb Deshmukh	fluir
47	Waghmare Shiyshankar Ramrao	Rucho
48	Abhijeet Prabhakar More	AMore
49	Sonali Pandurang Nengule	mali
50	Purva Vernekar	AUTUS
51	Hake Pallavi Sudhakar	+ holee
52	Pathan Adil	Dectation
53	Sampada Rakshe	Sampody
54	Asavari Ramesh Shinde	10,80,71
55	Mayuri Mangilal More	N Dagabe
56	Namrata Jaywant Daphale	N. paphale
57	Damini Pradeep Shinde	Dennies
58	Aditya Devendra Chonde	Aditya
59	Shinde Utkarsha Namdevrao	minale
60	Harshali Vilas Sonawane	150 p 1400
61	Varsha Sunil Pawar	Jasha
62	Pratiksha Laxman Raut	Roll Pin
63	Gholap Abhijit Balasaheb	anolab
64	Ganesh Dattatray Pore	Wire.
65	Samiksha Surendra Agarkar	Samilani
66	Magar Vaishnavi Sanjay	Navier .
67	Gaikwad Anuj Vitthal	Anus
68	Akshay Devidas Kalyan	Akshay





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2022-23

Name of Course: LEAN SIX SIGMA GREEN BELT for QBD Date: Batch A - 11th Feb 23 - 11th March 23 Batch B - 16th March 23 - 8th April 23

Course Code: NA

Course Duration: 32 hours

List of Students		
Sr. No	Name of Students	Sign
1	Pavan Baburao Navghare	Quel
2	Alfiya Mahibub Biradar	ALFERRA
3	Mohini Bharat Jadhav	(Mucc)
4	Nikalje Rushikesh Nitin	Drewell
5	Auti Mayuri Kashinath	But
6	Shinde Namrata Narsingrao	Gurd
7	Omkar Makey	conkers.
8	Shital Arun Susar	Buch
9	Radhika Somnath Vyavahare	Quency
10	Aishwarya Shivaji Mahnagade	AUSM
11	Madhavi Sanjay Vikharankar	pahadhari
12	Renuka Gangadhar Zarekar	comulea
13	Shaikh Fiza	Owl
14	Harshali Durgadas Dishware	traversie
15	Sadhana Sandeep Pawar	Sudhaue
16	Anjali Sunil Gaikwad	Ansal
17	Yalsangi Arpita Vitthal	Yalvasa
18	Rasika Prakash Babhulkar	Flagie
19	Priya Kisan Shete	detabl-
20	Sharadha Shivaji Tikate	distant
21	Waghmare Pradnya Sangram	Beaduya
22	Shraddha Dhanaji Shingade	Shorela.
23	Pratiksha Kondaware	Prese.
24	Anuradha Kamble	Dring.
25	Gayatri Bhagwan Jagdale	Graya ba
26	Pratiksha Ramesh Madar	Proctise.
27	Balu Kailas Palekar	Ball
28	Pavankumar Dattatraya Mare	Pavericum
29	Kasture Snehal Hanamant	Arastuse_
30	Prajakta Bairang Jagtan	terra taleta:

n Zollage of Pharmacy 21, Yamunanagar, Nigdi,

Pune - 411 044.





Go to ICT/computing skill enhancement initiatives in Academic year 2022-23