



**DYAL SINGH COLLEGE**  
in collaboration with  
**SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH**  
is offering

**Certificate Courses on**  
**PAINTS & COATINGS DEVELOPMENT &**  
**ANALYSIS**  
**(Basic and Advanced)**

20<sup>th</sup> March 2023 – 19<sup>th</sup> March 2024



**Course Coordinator**

**Dyal Singh College**  
Prof. Amita Malik : Course Coordinator  
Prof. Alka Gupta : Director, IQAC  
Prof.V.K.Paliwal : Principal & patron

**Shriram Institute For Industrial Research**  
Dr.Jagdish Kumar : Program Coordinator  
Dr.Menu Talwar : Course coordinator  
Dr. Mukul Das : Director & patron

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## Preamble

The Department of Chemistry, Dyal Singh College, University of Delhi has initiated a certificate course entitled, "Paints and Coatings Development and Analysis".

The course will be conducted in collaboration with Shriram Institute for Industrial Research (SRI), a Unit of Shriram Scientific and Industrial Research Foundation). SRI is one of the pioneer's in the areas of industrial importance and is a self-sustaining organization supporting wide-spectrum of National and International stakeholders. SRI has diversified facilities and infrastructure to carry out research as well as testing. The course structure has been designed to cover various aspects related to the above subject. This brochure illustrates subject specific modules to be covered in the course. The course will include practical training and also industrial visit so that the students may have an exposure of the various aspects of paints and coatings development and analysis. The certificate courses will be beneficial to the students with chemistry background

## Brief Insight of Course

All surfaces designed by mankind require application of functional coatings and paints for enhancement of properties. Paints and coatings industry in India is currently an emerging and fast growing area in the commercial sector and contributes considerably to the nation's economy. Being an essential and dynamic part of the trade, paint and coatings industry plays a key role in creating products that help preserve and protect everything, from everyday objects to our most important infrastructure. Apart from providing aesthetic appeal, paints and coatings act as a protective barrier to extend the useful life of the surfaces and substrates on which they are applied. Keeping in view the industrial importance of paints and coatings, a collaborative certificate course and advanced practical training is being offered by Dyal Singh College, University of Delhi and Shriram Institute for Industrial Research, Delhi. The certificate course will involve theoretical and practical sessions to sensitize the participants on various aspects of paints and coatings as described below and demonstration of preparation and qualitative analysis / performance evaluation of paints and coatings. It will also involve a field trip to an industry related to paints and coatings. The advanced practical training will involve hands on work in the field of paints and coatings under expert guidance.

## Duration of Course

Certificate Course (Basic-B) : 12 Weeks (Theoretical and Practical training \*\*)

Certificate Course (Advanced-AB) : 12 B+12 Weeks (Advanced Module\*\*\*)

\*\* Practical Modules will be conducted at Shriram Institute for Industrial Research

\*\*\*Independent projects will be assigned to the students and the research will be undertaken at Shriram Institute for Industrial Research

**Participants can go for advanced module only after completion of the basic course**

## Batch Size

- a) Batch size for certificate course would be maximum 30 students in one batch (1<sup>st</sup> batch to commence from March-2023).
- b) Batch size for Advanced Practical Training would be maximum 10 students to be selected based on the merit of certificate course.

## Who can apply?

Undergraduate and Postgraduate Students; PhD Research Scholars who have studied Chemistry as a subject at college level.

## Benefits of Course

The content for collaborative certificate course and advanced practical training has been designed keeping in view the practical aspects and latest advancements in this industrial sector so as to enhance the knowledge base of participants and make it more conducive with industrial requirements.

## Course Content

**Theory: 24 hours (12 sessions of 2 hours each; once in a week for 3 months)**

S. No.	Topic
1	Basic Introduction to paints & coatings
2	Various types of Paints & Coatings
3	Composition of Paints and Coatings
4	Preparation and Application Techniques
5	Quality Evaluation : Rheology, Weathering, Surface Energetics, Instrumental techniques, Microbiological parameters
6	Quality evaluation : Physical, Chemical
7	Measurement Uncertainty, Quality Management System
8	Domestic & Industrial Paints & Coatings and their market share
9	Corrosion Science and Importance of Surface Chemistry
10	Radiation Curable Coatings
11	Environmental and Occupational Safety Aspects
12	Novel Paint Applications & Incubation Activities

## Practical

Will include demonstration of experiments related to Preparation of (i) Paints and Coatings (ii) Application of Paints & Coatings and (iii) Evaluation of Paints & Coatings

## Dyal Singh College

The Dyal Singh College, University of Delhi is a NAAC Grade A with CGPA 3.15; NIRF Rank 35 (2022). The vision of the college is guided by the will of its founder Sardar Dyal Singh Majithia. The aim of the college is to provide and disseminate a sound liberal education of highest standards and promote overall physical, mental, and moral well-being of all stakeholders to empower them to contribute whole-heartedly in nation-building and to serve humanity as socially responsible global citizens. The mission of college includes

- ◆ To mentor students in their academic, research, and co-curricular pursuits so as to realise their true potential.
- ◆ To mentor students to be sensitive and compassionate to the needs of differently abled, less privileged, and be the protector of environment to ultimately become true global citizens.
- ◆ To promote diversity, ethical values, leadership etc. and provide enriching learning environment with ample co-curricular & social activities for an enhanced learning experience to usher a paradigm change in our world.

## Shriram Institute for Industrial Research

Shriram Institute for Industrial Research (SRI), a Unit of Shriram Scientific and Industrial Research Foundation, is an independent, self-sustaining, multi-locational contract research organization of international repute dedicated to support wide-spectrum of stakeholders through industrial research. The major thrust areas of SRI are

- ◆ Material Sciences including Radiation and TBI
- ◆ Biological Sciences,
- ◆ Environment Protection,
- ◆ Analytical Sciences
- ◆ Metals and Minerals
- ◆ Calibration

SRI is a registered Scientific and Industrial Research Organisation (SIRO). SRI is having eminent scientists, academicians and industrialists on its Board of Governors. SRI is accredited by the NABL as per ISO/IEC-17025:2017 in addition to certifications as per ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 standards

### **Dyal Singh College Faculty for this Program**

1. Prof. V.K.Paliwal, Principal & Chairperson
2. Prof. Alka Gupta, Director
3. Prof. Amita Malik, Department of Chemistry

### **Faculty of Shriram Institute for Industrial Research for this Program**

1. Dr. Mukul Das, Director, SRI
2. Dr. Manmohan Kumar
3. Dr. Jagdish Kumar, Program Coordinator
4. Dr. Meenu Talwar, Course Coordinator
5. Dr. R. K. Singh
6. Dr. Vinay Tyagi
7. Mr. Rajkumar Singh Rawat
8. Mr. Mohan Singh Chauhan
9. Mr. Arvind Kumar
10. Dr. Runumi Gogoi
11. Dr. Mukti Tyagi
12. Dr. Arti Sharma
13. Dr. Bhupesh Sharma
14. Dr. Bhuvneshwar Rai
15. Mr. Sanjay Singh
16. Mr. Dushyant
17. Ms. Amita
18. Dr. D.P. Jain
19. Ms. Neha



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