RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

02/08/2020

From

Mrs.L.Rogini Devi

Assistant Professor /S&H

RAAK College of Engineering and Technology

Puducherry -110

To

The Principal

RAAK College of Engineering and Technology

Puducherry -110

Respected Sir,

Sub: Requisition for Approval to Conduct Skill Development program / Value added Course on **"20SH01 - Laser Physics"** -reg.

This is to bring to your kind notice that the Skill Development Team is planning to conduct a Program on "**20SH01- Laser Physics**" for all the first Year Department of Science & Humanities. students from 09-08-2020 to 14-08-2020.

The main focus of this program is to provide a better exposure to our students on the Laser Physics for practical applications.

The syllabus and course plan structured are not listed in the Pondicherry University Curriculum. and the same have been verified and approved by the Principal/HoD/Professors and Skill development team.

Hence, I kindly request you to approve event planned. The details and the necessary proofs are attached with this letter.

Thanking you,

Yours faithfully

L. Rogini.

Mrs.L.Rogini Devi

AP/S&H

RAAK College of Engineering & Technology

Dr. S. SEENUVASAMOORTHY, M.E., Ph.D.

PRINCIPAL

RAAK College of Engineering & Technology

No.1, Muthupillai Palayam Road,

Sulthanpet Post,

Puducherry - 605 110

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**RAAKCET/PRINCIPAL/CIR/AUG2020** **03/08/2020**

**CIRCULAR**

This is to inform that the Skill Development Team is planning to conduct a value added course on "**20SH01- Laser Physics**" for all the first year department of science & humanities.students from 09-08-2020 to 14-08-2020.Students are asked to utilize this opportunity and improve their skills.

**PRINCIPAL**

Circulation to:

1. All Students
2. All Faculty & Staff Members
3. All HoDs

Copy to:

1. All HoDs
2. Office

Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
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# DEPARTMENT OF SCIENCE AND HUMANITIES PRESENTS

# VALUE ADDED COURSE ON

# LASER PHYSICS ( ONLINE MODE )

## 2020-2021

**DATE: 09/08/2020 to 13/08/2020**

**VENUE: RAAKCET**

**TIME: 09 am to 04 pm**

**Resource Person:**

**Dr. Victor Antony**
**Assistant Professor,**
**Krishnaswamy College of Engg & Tech.**

**For Registration Contact:**

**Ms. L. Roginidevi, AP/ S & H,**
**9003837028.**

**HOD**

**Mr. P. Radja Sacravarthy**

**PRINCIPAL**

**Dr. S. Seenuvasamurthi**

Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
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**Value Added Courses**

**2020-2021**

**Department of Science & Humanities.**

**20SH01- Laser Physics**

**Syllabus**

**Duration: 36 hours**

**Course Objective:**

- To understand the fundamental concepts of Laser principles.
- To provide the knowledge of Laser beam properties and methods of Laser pulse generation
- To provide knowledge of various Laser spectroscopic techniques
- To introduce some advanced Laser spectroscopic technique.

**Course Outcomes:**

- Explain the operational principles and construction of lasers
- Describe optical components that can be used to tailor the properties of the laserb
- Distinguish between the different optical cavities.
- Describe the conditions of producing a laser beam.

**Module 1: Introduction to Laser** **(9 Hours)**

Summary of black body radiation- quantum theory of evaluation of the transition rates- stimulated and spontaneous emission

**Module 2: Solid State Lasers** **(9 Hours)**

Ruby & Nd: YAG lasers. He-Ne laser, Dye laser, semiconductor diode laser.

**Module 3: Gas Lasers** **(9 Hours)**

Molecular gas lasers- CO2 laser & N2 lasers.

**Module 4: Population Inversion** **(9 Hours)**

Einstein's A & B coefficient- relation between them- condition for light amplification- Population inversion- Pumping methods and schemes.

**Module 5: Laser- Applications** **(9 Hours)**

Lasers in mechanical industry, Electronics industry, nuclear energy, medicine, Defense, communication- measurement of distance and velocity.

**Course Designed by** **Approved by** **Principal**

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## CO - ATTAINMENT MAPPING

| Sl. No | Register Number | Student Name | CO1 | CO2 | CO3 | CO4 |
|---|---|---|---|---|---|---|
| 1. | 20TD0902 | ARAVIND. V | ✓ | ✓ | ✓ | ✓ |
| 2. | 20TD0903 | ASRAF ALI. A | ✓ | ✓ | ✓ | ✓ |
| 3. | 20TD0904 | BHARATHI. S | ✓ | ✓ | ✓ | ✓ |
| 4. | 20TD0905 | BHUVANESWARAN. U | ✓ | ✓ | ✓ | ✓ |
| 5. | 20TD0906 | DINESH KUMAR. T | ✓ | ✓ | ✓ | ✓ |
| 6. | 20TD0907 | FAHMETHA. J | ✓ | ✓ | ✓ | ✓ |
| 7. | 20TD0908 | FROSE. S | ✓ | ✓ | ✓ | ✓ |
| 8. | 20TD0909 | GNANAMOORTHI. E | ✓ | ✓ | ✓ | ✓ |
| 9. | 20TD0910 | HEMALAKSHMI. J | ✓ | ✓ | ✓ | ✓ |
| 10. | 20TD0911 | JASMEEN.O | ✓ | ✓ | ✓ | ✓ |
| 11. | 20TD0912 | JAYASUDHA. S | ✓ | ✓ | ✓ | ✓ |
| 12. | 20TD0913 | KARTHIKA. K | ✓ | ✓ | ✓ | ✓ |
| 13. | 20TD0914 | KAVIARASAN. S | ✓ | ✓ | ✓ | ✓ |
| 14. | 20TD0915 | KAVIYA. K | ✓ | ✓ | ✓ | ✓ |
| 15. | 20TD0916 | MALAVIKA. K | ✓ | ✓ | ✓ | ✓ |
| 16. | 20TD0917 | MARIMUTHU. N | ✓ | ✓ | ✓ | ✓ |
| 17. | 20TD0918 | MERVIN IMMANUVEL. S | ✓ | ✓ | ✓ | ✓ |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 18. | 20TD0919 | NATRAJAN. R | ✓ | ✓ | ✓ | ✓ |
| 19. | 20TD0920 | PARKAVI. S | ✓ | ✓ | ✓ | ✓ |
| 20. | 20TD0922 | RANJITH. A | ✓ | ✓ | ✓ | ✓ |
| 21. | 20TD0923 | SATCHIDHANANDHAM. A | ✓ | ✓ | ✓ | ✓ |
| 22. | 20TD0924 | SNEGA. G | ✓ | ✓ | ✓ | ✓ |
| 23. | 20TD0925 | VIJAYA LAKSHMI. L | ✓ | ✓ | ✓ | ✓ |
| 24. | 20TD0926 | VISHNU PRIYA. V | ✓ | ✓ | ✓ | ✓ |
| 25. | 20TD0927 | YASMIN. A | ✓ | ✓ | ✓ | ✓ |
| 26. | 20TC0501 | AKASH M | ✓ | ✓ | ✓ | ✓ |
| 27. | 20TC0502 | AKASH M | ✓ | ✓ | ✓ | ✓ |
| 28. | 20TC0503 | ANKANI LEELA SAI VARMA | ✓ | ✓ | ✓ | ✓ |
| 29. | 20TC0505 | BALAJI S | ✓ | ✓ | ✓ | ✓ |
| 30. | 20TC0506 | BHARATHI K | ✓ | ✓ | ✓ | ✓ |
| 31. | 20TC0507 | FARIDH KHAN J | ✓ | ✓ | ✓ | ✓ |
| 32. | 20TC0508 | PRAVIN R | ✓ | ✓ | ✓ | ✓ |
| 33. | 20TC0509 | PURUSHOTHAMAN D | ✓ | ✓ | ✓ | ✓ |
| 34. | 20TC0510 | RAJESWARI R | ✓ | ✓ | ✓ | ✓ |
| 35. | 20TC0512 | SATHEESH KUMAR A | ✓ | ✓ | ✓ | ✓ |
| 36. | 20TC0513 | SHARMILA S | ✓ | ✓ | ✓ | ✓ |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 37. | 20TC0514 | SRI HARI B | ✓ | ✓ | ✓ | ✓ |
| 38. | 20TC0515 | SWATHI S | ✓ | ✓ | ✓ | ✓ |
| 39. | 20TC0516 | THAYUMANAVAR S | ✓ | ✓ | ✓ | ✓ |
| 40. | 20TE0251 | ARUN.S | ✓ | ✓ | ✓ | ✓ |
| 41. | 20TE0252 | KANMANI.K | ✓ | ✓ | ✓ | ✓ |
| 42. | 20TE0253 | NALLARASAN.E | ✓ | ✓ | ✓ | ✓ |
| 43. | 20TE0254 | PRITHEESH KUMAR.R | ✓ | ✓ | ✓ | ✓ |
| 44. | 20TE0255 | VENKATESAN.S | ✓ | ✓ | ✓ | ✓ |

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**Value Added Courses**

**2020-2021**

**Department of Science & Humanities.**

**20SH01- Laser Physics**

**COURSE PLAN**

| S.no | Date | Hours | Time | Topic | Faculty details |
|---|---|---|---|---|---|
| DAY -1 | | | | | |
| 1 | 09.08.20 | 1,2 | 9AM -11AM | Summary of black body radiation | Dr.V.Kalaiselvi& Dr.A.Victor Antony |
| 2 | | 3,4 | 11.15AM – 1.15 PM | quantum theory of evaluation of the transition rates | Dr.V.Kalaiselvi |
| 3 | | 5,6 | 2 PM -4PM | stimulated and spontaneous emission | Dr.A.Victor Antony |
| DAY 2 | | | | | |
| 4 | 10.08.20 | 7,8 | 9AM -11AM | Ruby & Nd: YAG lasers | Dr.V.Kalaiselvi |
| 5 | | 9,10, | 11.15AM – 1.15 PM | He-Ne laser, Dye laser | Dr.A.Victor Antony |
| 6 | | 11,12 | 2 PM -4PM | semiconductor diode laser. . | Dr.V.Kalaiselvi |
| DAY -3 | | | | | |
| 7 | 11.08.20 | 13,14 | 9AM -11AM | Molecular gas lasers | Dr.V.Kalaiselvi |
| 8 | | 15,16 | 11.15AM – 1.15 PM | CO2 laser, | |
| 9 | | 17,18 | 2 PM -4PM | N2 lasers.. | Dr.V.Kalaiselvi |
| DAY -4 | | | | | |
| 10 | 12.08.20 | 19,20 | 9AM -11AM | Einstein's A & B coefficient- relation between them | Dr.A.Victor Antony |
| 11 | | 21,22 | 11.15AM – 1.15 PM | condition for light amplification | Dr.V.Kalaiselvi |
| 12 | | 23,24 | 2 PM -4PM | Population inversion-Pumping methods and schemes. | Dr.A.Victor Antony |
| DAY -5 | | | | | |
| 13 | 13.08.20 | 25,26 | 9AM -11AM | Lasers in mechanical industry, Electronics industry, | Dr.V.Kalaiselvi |
| 14 | | 27,28 | 11.15AM – 1.15 PM | , nuclear energy, medicine, Defense, | Dr.A.Victor Antony |

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| | | | | | |
|---|---|---|---|---|---|
| | | | | communication | |
| 15 | | 29,30 | 2 PM -4PM | measurement of distance and velocity. | Dr.V.Kalaiselvi |
| ***ASESSMENT EXAM WILL BE CONDUCTED AFTER ONE WEEK OF COURSE COMPLETION **** | | | | | |

**BREAK TIME: 11.00 TO 11.15 AM** **LUNCH BREAK: 1.15 PM TO 2.00 PM**

COURSE DESIGNED BY
MRS.L.ROGINI DEVI

APPROVED BY
SKILL DEVELOPMENT TEAM

PRINCIPAL
Dr.S.SEENUVASAMURTHI

RAAK College of Engineering & Technology

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**Value Added Courses**

**2020-2021**

**Department of Science & Humanities.**

**EVENT REPORT**

Name of the Course: 20SH01- Laser Physics(Online Mode)

Name of the Instructors: Dr.V.Kalaiselvi &Dr.A.Victor Antony

Year/ Branch: I/ S&H

Duration of Course: 36 Hours (09-08-2020 to 13-08-2020)

Assessment Date: 20.08.2020

**Post Event Summary:**

The course was inaugurated on 09-08-2020 at 9.30 A.M. by our respectable principal and sessions were continued as per the schedule. Students were enriched their knowledge by attending the course. Finally, the course concluded by vote of thanks.

On 20.08.2020 assessment was conducted and feedbacks were collected from all the participants.

**CO - Attainment:**

**CO1:** Explain the operational principles and construction of lasers

**CO2:** Describe optical components that can be used to tailor the properties of the laser

**CO3:** Distinguish between the different optical cavities.

**CO4:** Describe the conditions of producing a laser beam.

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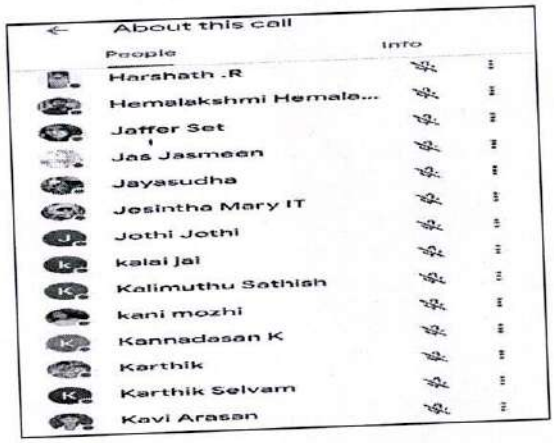
## Value Added Course on Laser Physics 2020-21




Semi conductor diode laser on 10.08.20

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From

Mrs.L.Rogini Devi

Assistant Professor /S&H

RAAK College of Engineering and Technology

Puducherry -110

To

The Principal

RAAK College of Engineering and Technology

Puducherry -110

Respected Sir,

Sub: Requisition for Approval to Conduct Skill Development program / Value added Course on **"20SH02- Cosmetics Chemistry"** - reg.

This is to bring to your kind notice that the Skill Development Team is planning to conduct a Program on**"20SH02- Cosmetics Chemistry"** for all the first Year Department of Science & Humanities. Students from 09-08-2020 to 13-08-2020.

The main focus of this program is to provide a better exposure to our students on the Teaching of English Language and Literature for practical applications.

The syllabus and course plan structured are not listed in the Pondicherry University Curriculum. and the same have been verified and approved by the Principal/HoD/Professors and Skill development team.

Hence, I kindly request you to approve event planned. The details and the necessary proofs are attached with this letter.

Thanking you,

RAAK College of Engineering & Technology

Yours Faithfully,

L. Rogini

Mrs.L.Rogini Devi

AP/S&H

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**RAAKCET/PRINCIPAL/CIR/AUG2020** **03/08/2020**

## CIRCULAR

This is to inform that the Skill Development Team is planning to conduct a value added course on **"20SH02- Cosmetics Chemistry"** for all the First Year Department of Science & Humanities. Students from 09-08-2020 to 13-08-2020.Students are asked to utilize this opportunity and improve their skills.

**PRINCIPAL**

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# DEPARTMENT OF SCIENCE AND HUMANITIES PRESENTS

# VALUE ADDED COURSE ON

# COSMETICS CHEMISTRY ( ONLINE MODE )

## 2020-2021

***DATE: 09/08/2020 to 13/08/2020***

***VENUE: RAAKCET***

***TIME: 09 am to 04 pm***

**Resource Person:**

**Dr. S. Devasenan**
**Assistant Professor,**
**Mailam Engineering college.**

**For Registration Contact:**

**Mr. S. Ramachandran , AP/ S & H,**
**9790171467.**

**HOD**

**Mr. P. Radja Sacravarthy**

**PRINCIPAL**

**Dr. S. Seenuvasamurthi**

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**VALUE ADDED COURSES**

**2020-2021**

**Department of Science & Humanities.**

**20SH02- Cosmetics Chemistry**

**Duration: 36 hours**

**Course Objective:**

1. This course is designed to provide foundation knowledge of cosmetic principles to address the needs of cosmetic industry.
2. Provide practical skills in the area of biology, formulation science, cosmeceuticals (cosmetics with-, skin, hair and oral care benefits) and personal care and hygiene products.
3. Provide knowledge on cosmetics, and related sciences,
4. Provide with knowledge on marketing approaches on studying consumer need, need gaps,-, managing competition and global markets

**Course Outcomes:**

**CO1:** Formulate and evaluate various cosmeceutical products.

**CO2:** Know the key components used in different cosmeceutical products

**CO3:** Recognize the role of ingredients and herbs used in cosmeceutical products

**CO4:** Employable skills and high technical competence for Pharmaceutical Industry

**Module 1**: Cosmetics **(9 Hours)**

Cosmetics- Classification, significance, quality control and its importance, stability of product forms and its significance. Physical and chemical properties of agents and designing of different product forms. Review of current product forms in market.

**Module 2**: **Basic raw materials** **(9 Hours)**

Basic raw materials, preparation and uses of Hair dye, Shampoo, Lipsticks, Handmade herbal Soap, Herbal tooth powder, Phenyl making, liquid soap and detergents.

**Module 3**: **Essential oils** **(9 Hours)**

Essential oils and their importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil, eucalyptus, rose oil, Civetone and Muscone. Surfactants- Introduction, physical and chemical properties, its types, HLB scale and its application in cosmetics. Review of commercialized surfactants.

**Module 4**: **Evaluation of Drugs** **(9 Hours)**

Evaluation of Drugs, patenting and regulatory requirement of natural products, Regulatory issuse

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**Module 5: herbal industry** **(9 Hours)**

General introduction of herbal industry, schedule T- Good manufacturing practice of indian system of medicine, compontents of GMP ( SCHEDULE-T)

**Course Designed by** **Approved by** **Principal**

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## CO - ATTAINMENT MAPPING

| Sl. No | Register Number | Student Name | CO1 | CO2 | CO3 | CO4 |
|---|---|---|---|---|---|---|
| 1. | 20TH0251 | ARUNADEVI K | ✓ | ✓ | ✓ | ✓ |
| 2. | 20TH0252 | ASHOKKUMAR R | ✓ | ✓ | ✓ | ✓ |
| 3. | 20TH0253 | DHARANIRASAN R | ✓ | ✓ | ✓ | ✓ |
| 4. | 20TH0254 | JESINTHA MARY D | ✓ | ✓ | ✓ | ✓ |
| 5. | 20TH0255 | LOGESH M | ✓ | ✓ | ✓ | ✓ |
| 6. | 20TH0256 | MOHAMED DHOWFIQ A | ✓ | ✓ | ✓ | ✓ |
| 7. | 20TH0257 | MOHANDASS T | ✓ | ✓ | ✓ | ✓ |
| 8. | 20TH0258 | MONIKA M | ✓ | ✓ | ✓ | ✓ |
| 9. | 20TH0259 | MUTHAZHAGAN S | ✓ | ✓ | ✓ | ✓ |
| 10. | 20TH0260 | PRETHESHWARAN S | ✓ | ✓ | ✓ | ✓ |
| 11. | 20TH0261 | PRIYANKA M | ✓ | ✓ | ✓ | ✓ |
| 12. | 20TH0262 | SAKTHI YUVARAJ V | ✓ | ✓ | ✓ | ✓ |
| 13. | 20TH0263 | SOWMIYA KK | ✓ | ✓ | ✓ | ✓ |
| 14. | 20TH0266 | YAZHINI K | ✓ | ✓ | ✓ | ✓ |
| 15. | 20TB0301 | ABINESH.A | ✓ | ✓ | ✓ | ✓ |
| 16. | 20TB0302 | AMARESH.V | ✓ | ✓ | ✓ | ✓ |
| 17. | 20TB0303 | HARISUDHAN.D | ✓ | ✓ | ✓ | ✓ |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 18. | 20TB0304 | KAPILDEV.S | ✓ | ✓ | ✓ | ✓ |
| 19. | 20TB0305 | RAJENDIRAN.P | ✓ | ✓ | ✓ | ✓ |
| 20. | 20TB0306 | SURESH KUMAR.R | ✓ | ✓ | ✓ | ✓ |

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**Value Added Courses**

**2020-2021**

**Department of Science & Humanities.**

**20SH02- Cosmetics Chemistry**

**COURSE PLAN**

| S.no | Date | Hours | Time | Topic | Resource Person |
|---|---|---|---|---|---|
| DAY -1 | | | | | |
| 1 | 09.08.20 | 1,2 | 9AM -11AM | Cosmetics- Classification, significance, quality control and its importance, stability of product forms | Mr.Raguraman& Dr.S.Devasenan |
| 2 | | 3,4 | 11.15AM – 1.15 PM | its significance. Physical and chemical properties of agents | Mr.Raguraman |
| 3 | | 5,6 | 2 PM -4PM | designing of different product forms. Review of current product forms in market. | Dr.S.Devasenan |
| DAY 2 | | | | | |
| 4 | 10.08.20 | 7,8 | 9AM -11AM | Basic raw materials, preparation and uses of Hair dye | Mr.Raguraman |
| 5 | | 9,10, | 11.15AM – 1.15 PM | Shampoo, Lipsticks, Handmade herbal Soap, | Dr.S.Devasenan |
| 6 | | 11,12 | 2 PM -4PM | Herbal tooth powder, Phenyl making, liquid soap and detergents. | Mr.Raguraman |
| DAY -3 | | | | | |
| 7 | 11.08.20 | 13,14 | 9AM -11AM | Essential oils and their importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil | Dr.S.Devasenan |
| 8 | | 15,16 | 11.15AM – 1.15 PM | eucalyptus, rose oil, Civetone and Muscone. Surfactants- Introduction, physical and chemical properties, its types | Mr.Raguraman |

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| | | | | | |
|---|---|---|---|---|---|
| 9 | | 17,18 | 2 PM -4PM | HLB scale and its application in cosmetics. Review of commercialized surfactants.. | Dr.S.Devasenan |
| DAY -4 | | | | | |
| 10 | 12.08.20 | 19,20 | 9AM -11AM | Evaluation of Drugs | |
| 11 | | 21,22 | 11.15AM – 1.15 PM | , patenting and regulatory requirement of natural products | Mr.Raguraman |
| 12 | | 23,24 | 2 PM -4PM | Regulatory issuse | Dr.S.Devasenan |
| DAY -5 | | | | | |
| 13 | 13.08.20 | 25,26 | 9AM -11AM | General introduction of herbal industry, | Mr.Raguraman |
| 14 | | 27,28 | 11.15AM – 1.15 PM | schedule T- Good manufacturing practice of indian system of medicine | Dr.S.Devasenan |
| 15 | | 29,30 | 2 PM -4PM | compontents of GMP ( SCHEDULE-T) | Mr.Raguraman |
| ***ASESSMENT EXAM WILL BE CONDUCTED AFTER ONE WEEK OF COURSE COMPLETION **** | | | | | |

**BREAK TIME: 11.00 TO 11.15 AM** **LUNCH BREAK: 1.15 PM TO 2.00 PM**

L. Rogini.

COURSE DESIGNED BY
Mrs.L.ROGINI DEVI

APPROVED BY
SKILL DEVELOPMENT TEAM

PRINCIPAL
Dr.S.SEENUVASAMURTHI

RAAK College of Engineering & Technology

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COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

**Value Added Courses**
**2020-2021**
**Department of Science & Humanities**

**EVENT REPORT**

Name of the Course: 20SH02- Cosmetics Chemistry(Online Mode)

Name of the Instructors: Mr.Raguraman & Dr.S.Devasenan

Year/ Branch: I/ S&H

Duration of Course: 36 Hours (09-08-2020 to 13-08-2020)

Assessment Date: 20.08.2020

**Post Event Summary:**

The course was inaugurated on 09-08-2020 at 9.30 A.M. by our respectable principal and sessions were continued as per the schedule. Students were enriched their knowledge by attending the course. Finally, the course concluded by vote of thanks.

On 20.08.2020 assessment was conducted and feedbacks were collected from all the participants.

**CO - Attainment:**

**CO1:** Formulate and evaluate various cosmeceutical products.
**CO2:** Know the key components used in different cosmeceutical products.
**CO3:** Recognize the role of ingredients and herbs used in cosmeceutical products.
**CO4:** Employable skills and high technical competence for Pharmaceutical Industry.

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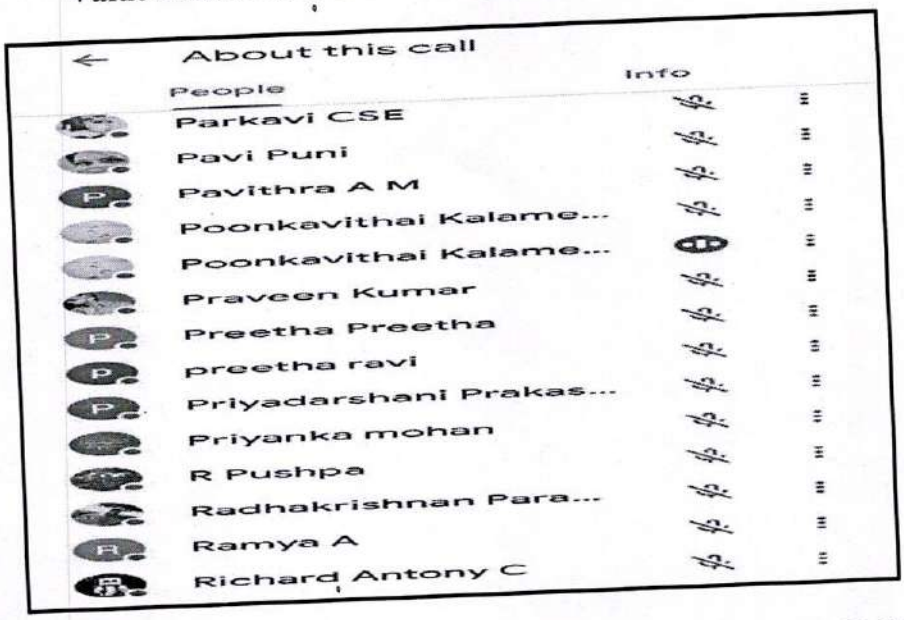
## Value Added Course on Cosmetics Chemistry 2020-21




schedule T- Good manufacturing practice of indian system of medicine on 13.08.20

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