

# CHEMICAL ENGINEERING DEPARTMENT

## LESSON PLAN

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| Discipline:-<br><b>CHEMICAL</b>                     | Semester:- <b>5<sup>th</sup></b>                     | Name of the Teaching Faculty<br><b>Mr BIJAYA KUMAR MAHARANA</b>   |
| Subject:-<br><b>Chemical Process Industries –II</b> | No of Days/per Week<br>Class Allotted:<br><b>-04</b> | Semester From:- <b>July</b> To:- <b>December</b>  |
| Course Code:<br><b>TH3</b>                          |  |   |
| <b>Week</b>   | <b>Class Day</b>                                     | <b>Theory/Practical Topics</b>  |
| 1 <sup>st</sup>                                     | 1 <sup>st</sup>                                      | <b>CHAPTER-1: PESTICIDES</b><br>Introduction  |
|   | 2 <sup>nd</sup>                                      | Pesticides, Classification  |
|   | 3 <sup>rd</sup>                                      | Manufacture of DDT  |
|   | 4 <sup>th</sup>                                      | DDT flow sheet description & application  |
| 2 <sup>nd</sup>                                     | 1 <sup>st</sup>                                      | <b>CHAPTER-2: PAINTS AND VARNISHES</b><br>Introduction about paint, varnishes, lacquers, enamels and their components |
|   | 2 <sup>nd</sup>                                      | Constituents of paints and their characteristics  |
|   | 3 <sup>rd</sup>                                      | Manufacturing process of paints and varnishes.  |
|   | 4 <sup>th</sup>                                      | Failure of paints   |
| 3 <sup>rd</sup>                                     | 1 <sup>st</sup>                                      | Advanced technologies in paint industries   |
|   | 2 <sup>nd</sup>                                      | <b>CHAPTER-3: EXPLOSIVES</b><br>Introduction about explosives   |
|   | 3 <sup>rd</sup>                                      | Classification of different explosives  |
|   | 4 <sup>th</sup>                                      | Manufacture of cellulose nitrate  |
| 4 <sup>th</sup>                                     | 1 <sup>st</sup>                                      | Broad application of cellulose nitrate  |
|   | 2 <sup>nd</sup>                                      | Manufacture of nitroglycerine and dynamite  |
|   | 3 <sup>rd</sup>                                      | <b>CHAPTER-4: PLASTICS</b><br>Introduction about plastics, types  |
|   | 4 <sup>th</sup>                                      | Differentiate between thermoplastic and thermosetting   |
| 5 <sup>th</sup>                                     | 1 <sup>st</sup>                                      | Classification of plastics  |
|   | 2 <sup>nd</sup>                                      | Properties and manufacture of phenol formaldehyde and its application   |
|   | 3 <sup>rd</sup>                                      | Properties and manufacture of urea formaldehyde and its application   |
|   | 4 <sup>th</sup>                                      | Properties and Manufacture of polyethylene and its application  |
| 6 <sup>th</sup>                                     | 1 <sup>st</sup>                                      | Properties and Manufacture of P. V. C and its application   |
|   | 2 <sup>nd</sup>                                      | <b>CHAPTER-5: SYNTHETIC FIBERS</b><br>Introduction about fibre and its classification                                 |
|   | 3 <sup>rd</sup>                                      | Properties of polyamides  |
|   | 4 <sup>th</sup>                                      | Manufacture of Nylon and its application  |
| 7 <sup>th</sup>                                     | 1 <sup>st</sup>                                      | Properties and Manufacture of Viscose rayon and its application   |
|   | 2 <sup>nd</sup>                                      | Properties and Manufacture of Cupro ammonium rayon and its application  |

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|                  | 3 <sup>rd</sup> | PropertiesandManufactureofAcetaterayonanditsapplication                             |
|                  | 4 <sup>th</sup> | PropertiesandManufactureofPolyesteranditsapplication                                |
| 8 <sup>th</sup>  | 1 <sup>st</sup> | <b>CHAPTER-6:RUBBER</b><br>Introductionaboutrubberanditsclassification              |
|                  | 2 <sup>nd</sup> | Vulcanizationofrubber   |
|                  | 3 <sup>rd</sup> | Naturalandsyntheticrubber   |
|                  | 4 <sup>th</sup> | ManufactureofSBRandtheirproperties  |
| 9 <sup>th</sup>  | 1 <sup>st</sup> | ManufactureofNitrilerubberandtheirproperties  |
|                  | 2 <sup>nd</sup> | <b>CHAPTER-7:SUGAR</b><br><b>Introduction</b>                                       |
|                  | 3 <sup>rd</sup> | Manufactureofsugarfromsugarcane   |
|                  | 4 <sup>th</sup> | Manufactureofindustrialalcoholanduses   |
| 10 <sup>th</sup> | 1 <sup>st</sup> | Classificationofalcoholicbeverages  |
|                  | 2 <sup>nd</sup> | PropertiesofAlcohols  |
|                  | 3 <sup>rd</sup> | ManufactureofBeer   |
|                  | 4 <sup>th</sup> | Cont..  |
| 11 <sup>th</sup> | 1 <sup>st</sup> | <b>CHAPTER-8:OILSANDFATS</b><br>Classifydifferenttypesofoil                         |
|                  | 2 <sup>nd</sup> | Manufactureofvegetableoil   |
|                  | 3 <sup>rd</sup> | Differentiateedibleandessentialoil  |
|                  | 4 <sup>th</sup> | Differentiateoilandfats   |
| 12 <sup>th</sup> | 1 <sup>st</sup> | Hydrogenationofoilandapplication  |
|                  | 2 <sup>nd</sup> | Advancetechnologiesinoilproduction  |
|                  | 3 <sup>rd</sup> | <b>CHAPTER-9:SOAPSANDDETERGENTS</b><br>Introductiononsoapsanddetergent              |
|                  | 4 <sup>th</sup> | Differentiatebetweensoapanddetergent  |
| 13 <sup>th</sup> | 1 <sup>st</sup> | Propertiesofsurfactant  |
|                  | 2 <sup>nd</sup> | Cleaningactionofsoap  |
|                  | 3 <sup>rd</sup> | Typesofsoap   |
|                  | 4 <sup>th</sup> | Manufactureofsoapanduses  |
| 14 <sup>th</sup> | 1 <sup>st</sup> | Manufactureofdetergentanduses   |
|                  | 2 <sup>nd</sup> | Industrialapplicationofsurfactants  |
|                  | 3 <sup>rd</sup> | <b>CHAPTER-10: PHARMACEUTICALINDUSTRY</b><br>Classificationofpharmaceuticalindustry |
|                  | 4 <sup>th</sup> | MajorpharmaceuticalindustryinIndia  |
| 15 <sup>th</sup> | 1 <sup>st</sup> | Pharmaceuticalindustryproducts  |
|                  | 2 <sup>nd</sup> | Propertiesandstructureofpenicillin  |
|                  | 3 <sup>rd</sup> | Manufactureofpenicillinbyfermentation   |
|                  | 4 <sup>th</sup> | Applicationofpenicillin   |