



IMPERIAL INSTITUTE OF CERAMIC SCIENCE AND TECHNOLOGY

Course: -

4 years Degree in Ceramic Technology through Distance learning and online contact program consisting of 8 semesters.

Eligibility:-

Condition for admission to the diploma courses shall be required to have passed in 12th Science Examination of the State Board of Secondary Education or CBSE, any other Examination recognized as equivalent to the above by the Board of Senior Secondary Education, Diploma in Engineering or Technology, B.Sc. or M.Sc. The candidate should have minimum 2 years of working experience in Ceramic or allied companies.

Note: In addition, at the time of admission the candidate will have to satisfy certain minimum requirements, which may be prescribed from time to time.

Age Limit: - No Age limit.

Medium of Instruction:- English

Eligibility for the Award of Degree:-

No candidate shall be eligible for the Degree unless he/she has undergone the prescribed course of study for a period of not less than 4 academic years and completed the assessments and all the prescribed papers at the term end examinations successfully. The maximum time line for clearing the Degree in Ceramic Technology is 6 years. If the candidate has been admitted in the second year based on lateral entry he will be eligible for the Degree after successful completion of assignments and term end prescribed papers.

Subjects of Study and Curriculum outline:-

The subjects of study shall be in accordance with the syllabus prescribed from time to time, both in term end examinations and assignments. The curriculum outline is given in Annexure – I.

Examinations:-

Examinations in all subjects of all the semesters under the scheme of examinations will be conducted at the end of each semester at prescribed centers for Indian students and online for students outside from India. For practical examinations student will have to appear at the Institute associate lab which will be advised at the term end examination.

The Internal assessment marks for all the subjects will be awarded on the basis of continuous internal assessment earned during the semester concerned. For each subject 40 marks are allotted for internal assessment and 60 marks are allotted for Term End Examination.



Continuous Internal Assessment:-

For each subject 2 Assignments are to be given each for 40 marks and the average marks scored should be reduced for 40 marks. All Test Papers and assignment notebooks after getting the signature with date from the students must be kept in the safe custody in the Department for verification and audit. It should be preserved for 2 Semesters and produced to the inspection team at the time of inspection/verification.

Project Work:-

The students of all the Degree Program have to do a Project Work as part of the Curriculum and in partial fulfillment for the award of Diploma by IICST. In order to encourage students to do worthwhile and innovative projects, every year prizes are awarded for the best three projects The Project work must be reviewed in the same semester.

Criteria for Pass:-

A candidate shall be declared to have passed the examination in a subject if he/she secures not less than 40% in theory subjects and 50% in practical subject out of the total prescribed maximum marks including both the internal assessment and the Term end Examination marks put together, subject to the condition that he/she secures at least a minimum of 24 marks out of 60 marks in the Term End Theory examinations and a minimum of 18 marks out of 40 marks in the Final Practical Examinations.

Classification of successful candidates:-

First Class with Distinction:

A candidate will be declared to have passed in First Class with Distinction if He/she secures not less than 75% of the aggregate of marks in all the semesters put together and passes all the semesters except the I and II semesters in the first appearance itself and passes all the subjects within the stipulated period of study

First Class:

A candidate will be declared to have passed in **First Class** if he/she secures not less than 60% of the aggregate marks in all semesters put together and passes all the subjects within the stipulated period of study without any break in study.

Second Class:

All other successful candidates will be declared to have passed in **Second Class**.



Annexure – 1

FIRST SEMESTER

1. Mathematics -
2. Physics
3. Chemistry
4. Basic Electrical Technology
5. Basic Electronics Engineering
6. Engineering Mechanics
7. Environmental and Safety Engineering
8. Physics Laboratory
9. Chemistry Laboratory
10. Computing Laboratory
11. Engineering Drawing
12. Workshop Practice

SECOND SEMESTER

1. Mathematics -II
2. Physics - II
3. Data Structures and Algorithm
4. Basic Electronics Engineering
5. Basic Electrical Technology
6. Environmental and Safety Engineering
7. Engineering Mechanics
8. Chemistry Laboratory
9. Physics Laboratory
10. Machine Drawing and Solid Modeling
11. Workshop Practice

THIRD SEMESTER

1. Mathematics – III
2. Unit Operations in Ceramic Processing
3. Materials Thermodynamics
4. Properties of Ceramic Raw Materials
5. HS & Open Elective I
6. Numerical Methods Laboratory Language Laboratory
7. Electrical Engineering Laboratory– I
8. Electronics Laboratory
9. Raw Materials Analysis Laboratory
10. Ceramic Workshop

FOURTH SEMESTER

1. Mathematics – IV
2. Ceramic Processing
3. Science of Ceramic Materials
4. Professional Elective – I
5. HS & Open Elective – II
6. Basic Electronics Laboratory
7. Electrical Engineering Laboratory
8. Numerical Methods Laboratory
9. Drawing of Refractory Lining and Joints
10. Ceramic Fabrication Laboratory



FIFTH SEMESTER

1. White ware Technology
2. Physical Ceramics
3. Professional Elective – II
4. Professional Elective – III
5. HS & Open Elective – III
6. High Temperature Processing Laboratory
7. Whiteware Technology Laboratory
8. Ceramic Characterization Laboratory
9. Ceramic Equipment Design Laboratory

SIXTH SEMESTER

1. Refractories or Refractory
2. Glass Technology
3. Professional Elective – IV
4. Professional Elective – V
5. HS & Open Elective – IV
6. Refractories Technology Laboratory
7. Glass Technology Laboratory
8. Ceramic Product Development Laboratory
9. Cement Technology Laboratory

SEVENTH SEMESTER

1. Advanced Ceramics
2. Professional Elective – VI
3. Professional Elective – VII
4. HS & Open Elective – V
5. Advanced Ceramics Laboratory
6. Research Project –
7. Seminar and Technical Writing –
8. Short term Industrial/Research Experience

EIGHTH SEMESTER

1. Professional Elective – VIII
2. Professional Elective – IX
3. Professional Elective – X
4. HS & Open Elective – VI
5. Research Project –
6. Seminar and Technical Writing –
7. Comprehensive Viva Voce

LIST OF PROFESSIONAL ELECTIVES

1. CR 226 Pollution & Waste Management in Ceramic Industry
2. CR 244 Introduction to Engineering Materials
3. CR 248 Fuels, Furnace and Stoichiometry 3
4. CR 320 Science of Sintering
5. CR 325 Computational Materials Science
6. CR 327 Interface Science & Sol- Gel Processing
7. CR 330 Fuel Cell & Batteries
8. CR 333 Heat Transfer and Fluid Flow



9. CR 335 Instrumental Characterization
10. CR 336 Cement Technology
11. CR 346 Nanoceramics
12. CR 391 Special Topic in Ceramic Engineering
13. CR 392 Special Topic in Ceramic Engineering
14. CR 393 Special Laboratory in Ceramic Engg –
15. CR 394 Special Laboratory in Ceramic Engg –
16. CR 395 Engineering Product Development Project –
17. CR 396 Engineering Product Development Project
18. CR 415 Bio-ceramics
19. CR 416 Application of Refractories
21. CR 420 Glass Ceramic Technology
22. CR 421 Glasses for Advanced Technical Application
23. CR 422 Ceramic Equipment Design
24. CR 424 Composite Materials
25. CR 426 Tribology of Materials
26. CR 433 Sensor Technology
27. CR 435 Functional Materials & Devices
28. CR 441 Electrical and Magnetic Ceramics
30. CR 446 Thin Film and Coating
31. CR 610 Shaped and Unshaped Refractories
32. CR 612 Refractories for Metallurgical & Allied Processes
33. CR 614 Advanced Structural Ceramics
34. CR 617 Advances in Bio-ceramics
35. CR 621 Energetics
36. CR 624 Advanced Composites
37. CR 633 Advanced Electro ceramics
38. CR 635 High Temperature Ceramic Processing
39. CR 636 Science of Sol-Gel Processing
40. CR 643 Techniques of Materials Characterization

SUMMARY OF COURSES

Sub Discipline: Industrial Ceramics

- CR 211 Unit Operations in Ceramic Processing
- CR 212 Ceramic Processing
- CR 219 Introduction to Ceramics
- CR 310 Refractories or Refractory
- CR 411 Advanced Ceramics
- CR 415 Bio-ceramics
- CR 416 Application of Refractories
- CR 417 Unshaped Refractories
- CR 418 Nanomaterials
- CR 419 Biomaterials for Artificial Implants
- CR 610 Shaped and Unshaped Refractories
- CR 611 Principles of Ceramic Processing & Fabrication
- CR 612 Refractories for Metallurgical & Allied Processes
- CR 614 Advanced Structural Ceramics
- CR 617 Advances in Bio-ceramics



Sub Discipline: Structural and Advanced Ceramics

CR 223 Materials Thermodynamics
CR 226 Pollution & Waste Management in Ceramic Industry
CR 320 Science of Sintering
CR 322 Glass Technology
CR 325 Computational Materials Science
CR 327 Interface Science & Sol- Gel Processing
CR 420 Glass Ceramic Technology
CR 421 Glasses for Advanced Technical Application
CR 422 Ceramic Equipment Design
CR 424 Composite Materials
CR 426 Tribology of Materials
CR 621 Energetics
CR 624 Advanced Composites
CR 426 Tribology of Materials

Sub Discipline: Electro-ceramics

CR 230 Science of Ceramic Materials
CR 231 Properties of Ceramic Raw Materials
CR 330 Fuel Cell & Batteries
CR 331 Whiteware Technology
CR 333 Heat Transfer and Fluid Flow
CR 335 Instrumental Characterization
CR 336 Cement Technology
CR 433 Sensor Technology
CR 435 Functional Materials & Devices
CR 631 Structure & Properties of Engineering Ceramics
CR 632 Advances in Phase Diagrams
CR 633 Advanced Electro ceramics
CR 635 High Temperature Ceramic Processing
CR 636 Science of Sol-Gel Processing

Sub Discipline: Nano and Bioceramics

CR 244 Introduction to Engineering Materials
CR 248 Fuels, Furnace and Stoichiometry
CR 341 Physical Ceramics
CR 344 Microstructural Design in Ceramics
CR 346 Nanoceramics
CR 348 Introduction to Engineering Ceramics
CR 441 Electrical and Magnetic Ceramics
CR 445 Application of Phase Diagrams
CR 446 Thin Film and Coating
CR 641 Nanomaterials
CR 643 Techniques of Materials Characterization



Sub Discipline: Laboratory Courses

CR 271 Raw Materials Analysis Laboratory
CR 272 Drawing of Refractory Lining and Joints
CR 273 Ceramic Workshop
CR 274 Ceramic Fabrication Laboratory
CR 370 Refractories Technology Laboratory
CR 371 High Temperature Processing Laboratory
CR 372 Glass Technology Laboratory
CR 373 Whiteware Technology Laboratory
CR 374 Ceramic Product Development Laboratory
CR 375 Ceramic Characterization Laboratory
CR 376 Cement Technology Laboratory
CR 377 Ceramic Equipment Design Laboratory
CR 471 Advanced Ceramics Laboratory
CR 671 Instrumental Analysis Laboratory
CR 672 Electroceramics Laboratory
CR 673 Characterization of Ceramic Products Laboratory
CR 674 Process Ceramics Laboratory

Sub discipline: Project, Seminar and Special Courses

CR 271 Raw Materials Analysis Laboratory
CR 272 Drawing of Refractory Lining and Joints
CR 273 Ceramic Workshop
CR 274 Ceramic Fabrication Laboratory
CR 370 Refractories Technology Laboratory
CR 371 High Temperature Processing Laboratory
CR 372 Glass Technology Laboratory
CR 373 Whiteware Technology Laboratory
CR 374 Ceramic Product Development Laboratory
CR 375 Ceramic Characterization Laboratory
CR 376 Cement Technology Laboratory
CR 377 Ceramic Equipment Design Laboratory
CR 391 Special Topic in Ceramic Engineering
CR 392 Special Topic in Ceramic Engineering
CR 393 Special Laboratory in Ceramic Engg
CR 394 Special Laboratory in Ceramic Engg
CR 395 Engineering Product Development Project
CR 396 Engineering Product Development Project
CR 471 Advanced Ceramics Laboratory
CR 491 Research Project
CR 492 Research Project
CR 493 Seminar and Technical Writing
CR 494 Seminar and Technical Writing
CR 495 Short Term Industrial/Research Experience
CR 496 Comprehensive Viva Voce