



BASICS IN INORGANIC CHEMISTRY

PROF. D. MAITI

Department of Chemistry

IIT Bombay

PRE-REQUISITES : Basic Chemistry courses, Basic Mathematics from school, 10+2 standard

INTENDED AUDIENCE : Undergraduate students belonging to Science and Engineering

COURSE OUTLINE :

This course will mainly deal with basics of Inorganic Chemistry. This includes periodic properties of the elements, source and extraction of metals. The study of transition metals comprises major portion of Inorganic Chemistry. Therefore, we will discuss some common properties like crystal field stabilization energy, magnetic properties, spectroscopic properties and uses of these properties in various fields including biological systems.

ABOUT INSTRUCTOR :

I am Prof. Debabrata Maiti, Associate Professor at IIT Bombay. I have completed PhD from Johns Hopkins University with Prof. Kenneth D. Karlin in bioinorganic chemistry. Then I moved to MIT where I did my Post-doctoral research with Prof. Steven Buchwald. I have started independent carrier at IIT Bombay in 2011 and since then involved actively in teaching bio-inorganic chemistry and organometallic chemistry. Our group is also active in research areas of bio-inorganic chemistry and C-H activation.

COURSE PLAN :

Week 1: Basics in Inorganic Chemistry

Week 2: Purification of elements; Coordination Chemistry; 18 electron rule; Valence bond theory; Crystal field theory

Week 3: Term symbols; Spectroscopy of complexes; Jahn-Teller distortion; Spinels; Magnetism

Week 4: Bio-inorganic Chemistry, Enzymes; Hemoglobin and Myoglobin; Toxicity; Medicinal inorganic compounds



Elite
NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

ADARSA R

for successfully completing the course

Basics In Inorganic Chemistry

with a consolidated score of **61** %

Online Assignments	19.17/25	Proctored Exam	42/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023
(4 week course)

Prof. Sridhar Iyer
Head CDEEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S45350354

To validate the certificate



No. of credits recommended: 1 or 2



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

AKALYA S

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **54** %

Online Assignments	20/25	Proctored Exam	34.37/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S35760306

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

AMMU DRISHYA J

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **63** %

Online Assignments	20.83/25	Proctored Exam	42/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head CDEEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S45350138

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

ANJU AK

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **60** %

Online Assignments	20.83/25	Proctored Exam	39/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head CDEEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02545350165

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

ANSIYA M

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **62** %

Online Assignments	23.33/25	Proctored Exam	39/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02544372815

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

ASWATHI S

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **72** %

Online Assignments	20.83/25	Proctored Exam	51/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S45350194

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

ATHULYA G

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **62** %

Online Assignments	23.33/25	Proctored Exam	39/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S44372891

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

GOPIKA D

for successfully completing the course



Basics in Inorganic Chemistry

with a consolidated score of **75** %

Online Assignments	20/25	Proctored Exam	55.01/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S45350220

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

JOONA J

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **65** %

Online Assignments	22.5/25	Proctored Exam	42/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S45350246

To validate the certificate



No. of credits recommended: 1 or 2



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

MANGAIYARKARASI

for successfully completing the course

Basics In Inorganic Chemistry

with a consolidated score of **57** %

Online Assignments	19.17/25	Proctored Exam	37.5/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023
(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S34372724

To validate the certificate



No. of credits recommended: 1 or 2



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

MUKILAN

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **58** %

Online Assignments	23.33/25	Proctored Exam	34.37/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head CDEEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S34372754

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

PRINCY S

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **64** %

Online Assignments	23.33/25	Proctored Exam	40.63/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S35350077

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

SABAREESWARAN G

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **60** %

Online Assignments	23.33/25	Proctored Exam	37.01/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S44376516

To validate the certificate



No. of credits recommended: 1 or 2



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

SHIVYA M R

for successfully completing the course

Basics In Inorganic Chemistry

with a consolidated score of **58** %

Online Assignments	20/25	Proctored Exam	37.5/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S35350045

To validate the certificate



No. of credits recommended: 1 or 2



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

SHWETHA

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **51** %

Online Assignments	20/25	Proctored Exam	31.25/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S34375014

To validate the certificate



No. of credits recommended: 1 or 2



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

VIJAYARAJ E

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **55** %

Online Assignments	21.67/25	Proctored Exam	33/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02544375876

To validate the certificate



No. of credits recommended: 1 or 2



NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

VISMAYA D

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **53** %

Online Assignments	21.67/25	Proctored Exam	31.25/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head COEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S35350109

To validate the certificate



No. of credits recommended: 1 or 2



Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

YASWANTH P

for successfully completing the course

Basics in Inorganic Chemistry

with a consolidated score of **64** %

Online Assignments	23.33/25	Proctored Exam	40.63/75
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Total number of candidates certified in this course: **450**

Jan-Feb 2023

(4 week course)

Prof. Sridhar Iyer
Head CDEEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



Roll No: NPTEL23CY02S34374970

To validate the certificate



No. of credits recommended: 1 or 2