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Basic Linear Algebra

By Prof. I. K. Rana | IIT Bombay

Learners enrolled: 9828

Basic Linear Algebra Prof I K Rana Introduction



Linear Algebra is a basic course for students intended to go for Engineering studies and higher studies in Mathematics. We will cover the basic tools needed in these branches.

INTENDED AUDIENCE : B.Tech, B.Sc., M.Sc (maths) , BA/MA Economics/Statistics

PREREQUISITES : Core

INDUSTRY SUPPORT : Basic mathematics at school level undergraduate level

Summary

Course Status :	Completed
Course Type :	Core
Duration :	8 weeks
Category :	Mathematics
Credit Points :	2
Level :	Undergraduate
Start Date :	24 Feb 2020
End Date :	17 Apr 2020
Enrollment Ends :	24 Feb 2020
Exam Date :	26 Apr 2020 IST

Note: This exam date is subjected to change based on seat availability. You can check final exam date on your hall ticket.

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Course layout

- Week 1** : Matrices and Matrix operations, REF
- Week 2** : Linear systems, Gauss Elimination and Inverse of a matrix
- Week 3** : \mathbb{R}^n ; subspaces, linear independence, rank of a matrix
- Week 4** : Determinants, rank, invertibility
- Week 5** : Linear transformations, rank-nullity
- Week 6** : Inner product spaces, Gram-Schmidt process
- Week 7** : Eigenvalues and Eigenvectors
- Week 8** : Similarity, diagonalization and applications

Books and references

From Geometry to Algebra, an introduction to linear Algebra, Inder K Rana, Ane Books 2007.

Instructor bio


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Prof. I. K. Rana

IIT Bombay

I am Emeritus Fellow at Department of Mathematics, IIT Bombay. I have taught courses at B.Tech, M.Sc., and Ph.D level for the last 34 years.

Course certificate

- The course is free to enroll and learn from. But if you want a certificate, you have to register and write the proctored exam conducted by us in person at any of the designated exam centres.
- The exam is optional for a fee of Rs 1000/- (Rupees one thousand only).
- **Date and Time of Exams:** 26th April 2020, Morning session 9am to 12 noon; Afternoon Session 2pm to 5pm.
- Registration url: Announcements will be made when the registration form is open for registrations.
- The online registration form has to be filled and the certification exam fee needs to be paid. More details will be made available when the exam registration form is published. If there are any changes, it will be mentioned then.
- Please check the form for more details on the cities where the exams will be held, the conditions you agree to when you fill the form etc.

CRITERIA TO GET A CERTIFICATE:

- Average assignment score = 25% of average of best 6 assignments out of the total 8 assignments given in the course.
- Exam score = 75% of the proctored certification exam score out of 100
- Final score = Average assignment score + Exam score

YOU WILL BE ELIGIBLE FOR A CERTIFICATE ONLY IF AVERAGE ASSIGNMENT SCORE $\geq 10/25$ AND EXAM SCORE $\geq 30/75$.

- If one of the 2 criteria is not met, you will not get the certificate even if the Final score $\geq 40/100$.
- Certificate will have your name, photograph and the score in the final exam with the breakup. It will have the logos of NPTEL and IIT Bombay. It will be e-verifiable at nptel.ac.in/noc (<http://nptel.ac.in/noc>).
- Only the e-certificate will be made available. Hard copies will not be dispatched.



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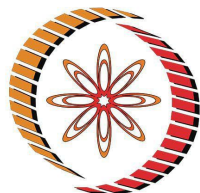
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M.SIVANANDHA SARASWATHY
11A VIVEKANANDAR III CROSS
STREETBALASUBRAMANIA NAGAR,
TIRUPPARANKUNDRAM
MADURAI
TAMIL NADU-625005
PH. NO :9994162385



No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



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This certificate is awarded to
M.SIVANANDHA SARASWATHY
for passing the course

Basic Linear Algebra

with Score* **89** %

**Covid-19
impacted
January 2020
semester**

Prof. Sridhar Iyer
Head, CDEEP & NPTEL Coordinator
IIT Bombay

Feb-Apr 2020
(8 week course)



Indian Institute of Technology Bombay



***Continuous online assessment score**

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To
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NO 1471 SOUTH MARRET STREET MADURAI
625001
MADURAI
TAMIL NADU-625001
PH. NO :9952817041



No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

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This certificate is awarded to

SRI VINODHINI H

for passing the course

Basic Linear Algebra

with Score* **86** %

**Covid-19
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January 2020
semester**

Prof. Sridhar Iyer
Head, CDEEP & NPTEL Coordinator
IIT Bombay

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***Continuous online assessment score**

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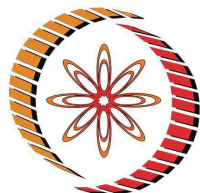
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T. LAKSHMI
PLOT NO.A31THIRUVALLUVAR ST. EXTN,
THANATHAVAM
MADURAI
TAMIL NADU-625010
PH. NO :9443813274



No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

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This certificate is awarded to

T. LAKSHMI

for passing the course

Basic Linear Algebra

with Score* **77** %

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January 2020
semester**

Prof. Sridhar Iyer

Head, CDEEP & NPTEL Coordinator
IIT Bombay

**Feb-Apr 2020
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Roll No: NPTEL20MA08S1601727
To
DR.M.KAMESWARI
DR.M.KAMESWARI ASSOCIATE PROFESSOR OF
MATHSTHIAGARAJAR COLLEGE OF ENGINEERING
MADURAI
TAMIL NADU-625015
PH. NO :9894671271



No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

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This certificate is awarded to
DR.M.KAMESWARI
for passing the course

Basic Linear Algebra

with Score* **76** %



Feb-Apr 2020
(8 week course)

Prof. Sridhar Iyer
Head, CDEEP & NPTEL Coordinator
IIT Bombay



Indian Institute of Technology Bombay



*Continuous online assessment score

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