For the Students of Second Semester 2020 in Applied Mathematics, University of Calcutta

The following are the suggestions provided by the course teachers to be followed in the lock down period for better understanding of their course matters already taught and will be taught in future. Apart from the suggestive links, students may follow several other freely available lecture notes, etc. from internet for their course /curriculum.

Module: 421

Group-A: Continuum Mechanics-I

Faculty: Dr. Nantu Sarkar

Follow the links:

https://www.continuummechanics.org/ ;   https://nptel.ac.in/courses/105106049/

Group-B: Rigid Dynamics

Faculty: Dr. Swarup Poria

Follow the portion of the Text Book : Classical Mechanics-- H. Goldstein
  Chapter 4 : The Kinematics of Rigid Body Motion
  Chapter 5 : The Rigid Body Equations of Motion
  Chapter 6 : Small Oscillations

Module: 422
Continuum Mechanics-II

For portion taught by the Faculty: Dr. Soumen De
Inviscid incompressible fluid:

Books:
 1. H. Lamb, Hydrodynamics, Dover Publication.
2. L.M. Milne-Thomson, Theoretical Hydrodynamics.

Viscous incompressible fluid flow:

Book: S.I. Pai, Viscous Flow Theory, Princeton

Inviscid Compressible Fluid:

Book: F. Chorlton, Text Book of Fluid Dynamics, CBS Publ

Link: https://nptel.ac.in/courses/112104118/

https://nptel.ac.in/courses/114106033/

For portion taught by the Faculty: Dr. Uttam Ghosh

Consult the following three books.

1. F. Chorlton, Text Book of Fluid Dynamics, CBS Publ (For Theory)

2. L.M. Milne-Thomson, Theoretical Hydrodynamics. (For Theory)

3. Fluid Dynamics: M.D. Raisinghania (For Problem)

Module: 423

Topology, Functional Analysis and Operator Theory:

Faculty: Prof. Debasis Sarkar

Apart from the Books:

1. G.F. Simmons, Introduction to Topology and Modern Analysis, McGraw-Hill, Singapore, 1963.

2. J.R. Munkres, Topology, A First Course, Prentice-Hall of India Pvt. Ltd., New Delhi, 2000.
3.E. Kreyszig, Introductory Functional Analysis with Applications, John Wiley & Sons, New York, 1978.

Follow the freely available following links:

http://www.freebookcentre.net/maths-books-download/Lecture-notes-on-Topology.html

http://folk.uio.no/rognes/kurs/mat4500h10/topology.pdf

http://www.math.ucsd.edu/~bdriver/240-00-01/Lecture_Notes/top3s.pdf

Module: 424

Group-A: Optimization:

Faculty: Prof. Krishna Kundu

The following links for online consultation of module AMATH-424 (Group-A) are recommended:

web.mit.edu>www>AMP-Chapter-11

www.lancer.com.tw>attachments>367_ErpBook(7)

Group-B: Calculus of variations

Faculty: Dr. Uttam Ghosh

Consult the following three books.

First two for theory and last one for Problem.

Books: (i) Calculus of Variations: Bruce van Brunt (For Theory)

(ii) Calculus of Variations: Lev D. Elsgolc (For Theory)

(iii) Calculus of variations: M.V. Makarets, V. Yu. Reshetnyak. (For Problem)

Module: 425

Group-A: Theory of Relativity

Faculty: Prof. Tanuka Chattopadhyay

Consult the following book:

Special Relativity and Classical field Theory - Leonard Susskind and Art Friedman

Chapters: 1-11   and Appendices A and B

Group-B: Classical Electromagnetism

Faculty: Prof. Samiran Ghosh

The reference study materials are as follows:
1. Introduction to Electrodynamics - David J. Griffiths

Chapters-5, 7, 8, 9, 10,12

2. Electricity and Magnetism - D Chattopadhyay and P. C. Rakshit

For further readings: K. Likharev, "Part EM: Classical Electrodynamics" (2013)
(https://commons.library.stonybook.edu/egp/3)