List of E-resources/ Study material for the reference of students

B. Tech. (Information Technology and Mathematical Innovations)

Following are the recommendations of some additional e-resources (books, articles, lectures, youtube links, ppts etc.) to the students as a paper wise list for each semester. A lot of study material, hand-outs, presentations, and lectures etc. have already been shared with students either on emails or through google drives. Also, study material had been continuously uploaded on CIC website for the reference to students.

The weblinks in this document are only for the reference of students of Cluster Innovation Centre, purely for academic purposes. Since, all of these are available in the public domain, no Copyright infringement is intended.

SEMESTER: II

Paper Name: Linearity in Nature: Engineering through Linear Algebra. First steps through numerical algorithms.
Name of Faculty Members: Sakshi
Paper Code: II.1
Course: B.Tech. (IT & MI) Sem. II
Links of books or material to be shared:
1. https://books.google.co.in/books/about/Linear_Algebra_A_Modern_Introduction.html?id=V-UbCgAAQBAJ&redir_esc=y
2. https://pdfs.semanticscholar.org/405f/9ad46ab3fd12c3929883571390d0a7d0e580.pdf

Paper name: Understanding real life situations through Discrete Mathematics
Name of faculty member: Dr. Sonam Tanwar
Paper code: II.2
Course: B.Tech. (IT & MI), Sem. II
Links of books or material to be shared:
https://drive.google.com/file/d/1quPYjhWSNsr6yQoyfVGGcyLcdUPn9INA/view?usp=sharing
https://drive.google.com/file/d/1dLiq4duhf_CDnQ199I2kk1gTrQOHfijN/view?usp=sharing

Paper Name: Optimizing memory use through Data Structure and Design
Name of faculty member: Sachin Kumar
Paper Code: II.3
Course: B.Tech. (IT & MI), Sem. II
Links of books or material to be shared:

http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#dataStructuresAndProgrammingTechniques
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#asymptoticNotation
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#linkedLists
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#abstractDataTypes
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#binaryTrees
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#binarySearchTrees
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#heaps
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#hashTables
http://www.cs.yale.edu/homes/aspnes/classes/223/notes.html#graphs

Paper name: Reflecting thought process via Object Oriented Programming
Name of faculty member: Anjani Kumar
Paper code: II.4
Course: B. Tech. (IT & MI), Sem. II
Links of books or material to be shared:
https://www.academia.edu/8456840/Java-the-complete-reference-7th-edition

Paper Name: Physics at work II: Deconstructing Devices
Name of faculty member: Dr. Swati Arora
Paper Code: II.5
Course: B.Tech. (IT & MI), Sem. II
Links of books or material to be shared:
https://msashigri.files.wordpress.com/2016/11/introduction-to-electrodynamics-by-griffiths.pdf
https://www.amu.ac.in/emp/studym/100005434.pdf
https://highereducation.tripura.gov.in/HE_Resource_Materials/Physics_electrostatics.pdf

Books to be referred
1. Vector analysis – Schaum's Outline, M.R. Spiegel, S. Lipschutz, D. Spellman, 2ndEdn., 2009, McGraw- Hill Education.
2. Electricity & Magnetism, J.H. Fewkes & J. Yarwood. Vol. I, 1991, Oxford Univ. Press
3. Electricity and Magnetism, D C Tayal, 1988, Himalaya Publishing House.
4. Fundamentals of Electromagnetics, M.A.W. Miah, 1982, Tata McGraw Hill
5. D.J. Griffiths, Introduction to Electrodynamics, 3rd Edn, 1998, Benjamin Cummings.

Paper name: Art of Communication and Creative Writing
Name of faculty member: Dr. Dorje Dawa
Paper code: II.6
Course: B. Tech. (IT & MI), Sem. II
Links of books or material to be shared:
1.Introduction to Communication. Objective of Communication and Communication and its process: https://wikieducator.org/INTRODUCTION_TO_COMMUNICATION
2. Scientific communication: https://www.sheffield.ac.uk/polopoly_fs/1.96443!/file/report-writing-06-07.pdf

3. Business letter writing: http://www.galaxyimrj.com/V2/n5/Patel.pdf
4. Creative writing: https://www.uvm.edu/wid/writingcenter/tutortips/WritingCreativePage.pdf

Paper name: Business Process and Strategic IT Alignment
Name of faculty member: Nishant Sapra
Paper code: II.7.1
Course: B. Tech. (IT & MI), Sem. II
Links of books or material to be shared:
https://www.academia.edu/24179428/E-Business_and_E-Commerce_Management_4th_Edition?auto=download
https://www.oreilly.com/library/view/it-enabled-business-change/9781902505916/

Paper name: Electronics at Work & Circuit Simulation
Name of faculty member: Prof. Pankaj Tyagi
Paper code: 911213 (II. 7.2)
Course: B. Tech. (IT & MI), Sem. II
Links of books or material to be shared:
https://freevideolectures.com/course/2312/basic-electronics (All Nine Lectures)
https://freevideolectures.com/course/3164/digital-electronics (All Six Lecture)
https://freevideolectures.com/course/3492/signals-and-system (First 4 Lecture)
http://engineering.nyu.edu/gk12/amps-cbri/pdf/Basic%20Electronics.pdf (PPT)
https://nptel.ac.in/courses/122106025/ (Basic Electronics course on NPTEL, government website)

Paper Name: Exploring Biology: Systems approach
Name of faculty member: Dr. Asani Bhaduri
Paper code: II.7.3
Course: B. Tech. (IT & MI), Sem. II
Links of books or material to be shared:
a. Google drive folder "Intro Bio" (Shared with students attending the course).
b. https://openstax.org/books/concepts-biology/pages/1-introduction
c. https://www.ncbi.nlm.nih.gov/books/NBK9839/?term=biology
d. https://en.wikibooks.org/wiki/Cell_Biology
e. http://www.talkorigins.org/pdf/faq-intro-to-biology.pdf
f. https://www.ncbi.nlm.nih.gov/books/NBK21125/
g. https://archive.org/details/originofspecies00darwuoft/page/n6/mode/2up

SEMESTER: IV

Paper Name: Does nature Play Dice? the amazing world of Probability and Statistics.
Name: Prof. Shobha Bagai
Paper Code: 911408, (IV.1)
Course: B.Tech. (IT & MI), Sem. IV

Links of books or material to be shared:
Testing of Hypothesis – Part I   (https://youtu.be/V2zjwMeae70)
Testing of Hypothesis – Part II   (https://youtu.be/9AT2--vE5Ns)
Testing of Hypothesis – Part III (https://youtu.be/mi_5glMaLmA)
Testing of Hypothesis – Part IV   (https://youtu.be/4h6cOHx524M)
Point Estimation of Parameters (https://youtu.be/pELvsdi2olc)
Methods of Point Estimations   (https://youtu.be/-MF8n5yjdrk)

Paper name: Understanding Computing Systems Architecture
Name of faculty member: Shobha Rai
Paper code: 911409, IV.2
Course: B.Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
1. computer system architecture by morris mano
https://faculty.psau.edu.sa/filedownload/doc-10-pdf-d171a71acbe44cd5cd2f78a40570a069-original.pdf
2. computer organization & architecture by william stallings
http://home.ustc.edu.cn/~leedsong/reference_books_tools/Computer%20Organization%20and%20Architecture%2010th%20-%20William%20Stallings.pdf

Paper Name: Software Engineering
Name of the faculty member: Sachin Kumar
Course: B.Tech. (IT & MI), Sem. IV
Course Code: 911410, IV.3
Links of books or material to be shared:
https://drive.google.com/file/d/0BxQVK2HtmaEdXy0tU2Q5MENxUFE/edit
https://www.ece.rutgers.edu/~marsic/books/SE/instructor/slides/

Paper Name: Science, Philosophy, Truth: Impact of technology
Name of faculty member: Dr. Dorje Dawa
Paper code: 911411, (IV.4)
Course: B. Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
1. Introduction to Philosophy of
Science: https://web.stanford.edu/class/symsys130/Philosophy%20of%20science.pdf
2. Science and Structural Revolution: https://plato.stanford.edu/entries/thomas-kuhn/
3. Science as a pursuit of truth: Theory of falsification by Karl
Popper: https://nptel.ac.in/content/storage2/courses/109103024/pdf/module1/SM%20Lec%202.pdf

Paper Name: Understanding Economic Behaviour: The macro level
Name of faculty member: Urvashi Verma
Paper code: 911412, (IV.5.1)

Course: B. Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
https://shodhganga.inflibnet.ac.in/bitstream/10603/43333/17/17_chapter4.pdf
https://lyryx.com/wp-content/uploads/2017/08/CI-Principles-of-Macroeconomics-2017-RevisionB.pdf
https://resources.saylor.org/wwwresources/archived/site/wp-content/uploads/2012/06/KeynesianEconomics.pdf
https://drive.google.com/open?id=1msKksZkaOv-8WtJBfeTKWQdNzJ59kESu

Paper name: Digital Electronics and logic design
Name of faculty member: Parveen
Paper number: 911413, IV.5.2
Course: B. Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
http://dl.booktolearn.com/ebooks2/engineering/electrical/9789814364584_foundation_of_digital_electronics_and_logic_design_0516.pdf

Paper name: Genes to Genomes
Name of faculty member: Dr. Asani Bhaduri + Dr. Jogeswar S. Purohit
Paper code: 911414, IV.5.3
Course: B.Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
a. Google drive folder "Genetic Bio" (Shared with students attending the course).
b. https://www.ncbi.nlm.nih.gov/books/NBK21766/?term=genetics
c. https://www.ncbi.nlm.nih.gov/books/NBK9839/?term=biology
d. https://www.ncbi.nlm.nih.gov/books/NBK1732/
e. http://www.talkorigins.org/pdf/faq-intro-to-biology.pdf
f. https://www.ncbi.nlm.nih.gov/books/NBK21125/
g. Epigenetics: ·
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=2ahUKEwiK1OLZ46npAhWJ73MBHVGNAdkQFjACegQIBBAB&url=https%3A%2F%2Fwww.researchgate.net%2Fpublication%2F26771184_Epigenetics_Definition_Mechanisms_and_Clinical_Perspective&usg=AOvVaw0tl-cEY0SOJMibcQV8nRvZ
h. Mi and Si RNA
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=2ahUKEwi-75aO5KnpAhV5ILcAHYacDToQFjACegQIAhAB&url=https%3A%2F%2Fwww.gene-quantification.de%2Fpushparaj-sarna-in-vivo-applications-2008.pdf&usg=AOvVaw1bjhrnKHFH9xNwlk8XGE1P
i.Transposons:
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=2ahUKEwiA7-

[6q5KnpAhXG7XMBHca0D0UQFjACegQIAhAB&url=https%3A%2F%2Flink.springer.com%2Fprotocol%2F10.1007%2F978-1-4939-9074-0_6&usg=AOvVaw08MCRSGbuTAcgPs9nwE9tl](https://link.springer.com)

j.Regulation of gene expression in eukaryotes

[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=13&cad=rja&uact=8&ved=2ahUKEwjF_aPd56npAhVk63MBHaYYAv4QFjAMegQIBhAB&url=https%3A%2F%2Facnp.org%2Fwp-content%2Fuploads%2F2017%2F11%2FCH17_217-228.pdf&usg=AOvVaw2_l_4_OTDR-jdXJc7fmKMc](https://acnp.org)

<mark>**Paper name: Bringing Companies and clients together: Sales and Marketing Management**</mark>
Name of faculty member: Dr. Subhash Kumar
Paper Number: 911415, (IV.6.1)
Course: B.Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
Book Reference: Kotler, P. and K L Keller (2018). *Marketing management,* Pearson Publishing, Universität Basel.
https://drive.google.com/file/d/1rVuzLIIfkDiXWC6VBrz27yJTl3LVf0EJ/view?usp=sharing

<mark>**Paper name: Digital Electronics and Logic Design: Innovation Lab**</mark>
Name of faculty member: Prof. Pankaj Tyagi
Paper code: 911416, (IV.6.2)
Course: B. Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
http://www.digitalcircuitdesign.com
https://www.pling.org.uk/cs/idd.html
https://www.electronics-notes.com/articles/digital-embedded-processing/logic-circuits-design/design-guidelines-overview.php

<mark>**Paper Name: Flow of information in living systems**</mark>
Name of the faculty member: Dr. Mahima Kaushik
Paper Code: 911417, (IV. 6.3)
Course: B. Tech. (IT & MI), Sem. IV
Links of books or material to be shared:
1. Nature of genetic material (DNA/ RNA/ Genetic code), Process of information transfer (Replication, Transcription and translation machinery)
    - http://biology.kenyon.edu/courses/biol63/watson_06.pdf
    - https://bio.libretexts.org/Courses/University_of_California_Davis/BIS_2A%3A_Introductory_Biology_(Easlon)/Readings/18.1%3A_Transcription—from_DNA_to_RNA
    - http://www.chem.latech.edu/~upali/chem121/Notes-C22-121.pdf
    - https://application.wiley-vch.de/books/sample/3527316035_c01.pdf
2. Energetics and accuracy of information transfer – Problems of information transfer (DNA damage and repair)
    - https://www.nature.com/articles/nature01408.pdf
    - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5474181/pdf/nihms862014.pdf

3. Regulation of informational transfer (transcription factors, operon)
   - https://courses.lumenlearning.com/microbiology/chapter/gene-regulation-operon-theory/
   - https://bio.libretexts.org/Courses/University_of_California_Davis/BIS_2A%3A_Introductory_Biology_(Britt)/Readings/29%3A_Regulation_of_Gene_Expression
4. DNA packaging and chromatin structure.
   - https://www.ncbi.nlm.nih.gov/books/NBK26834/

Engineering Kitchen Activities [Laboratory]:
1. Gel electrophoresis
   https://www.youtube.com/watch?v=mN5IvS96wNk&t=131s
2. Polymerase chain reaction (PCR)
   https://www.youtube.com/watch?v=nHi-3jP6Mvc
3. Primer design
   https://www.youtube.com/watch?v=P2ctzK2ZbHY
4. Spectrometry, Analysis of growth curve, molar extinction coefficient, absorption maxima
   https://www.youtube.com/watch?v=zuUvQN8KXOk
5. Restriction digestion, Introductory Gene Cloning (Transformation to Ligation)
   https://www.youtube.com/watch?v=GsWo8dCivWs
   https://www.youtube.com/watch?v=-kHOEtaWntA

SEMESTER: VI

Paper name: Linear Construction of Actions: Engineering through *Linear Programming and Game Theory*
Name: Dr. Nirmal Yadav
Paper Code: 911610, (VI.1)
Course: B.Tech. (IT & MI), Sem. VI
Links of books or material to be shared:

📄 **172-Operations-Research-An-Introduction-Hamdy-A...**
📄 **405_01_Thie_An_Introduction_to-linear-programmi...**

Paper name: Computer Graphics and Visualization Architecture
Name of faculty member: Neeraj Kohli
Paper code: 911611, VI.2
Course: B.Tech. (IT&MI), Sem. VI
Links of books or material to be shared:
Computer Graphics by Hearn & Baker

https://drive.google.com/open?id=1iCWnVgRbq-DnoSzFcXifB_sHkmKX0fvJ
Computer Graphics Schaum's Series
https://drive.google.com/open?id=1t-WLwgoXNpIZNU13qoaWz7iiXtYoVM98

Paper name: Advanced Algorithms Design
Name of faculty member: Neeraj Kohli
Paper code: 911612, VI.3
Course: B.Tech (IT&MI), Sem. VI
Links of books or material to be shared:
Randomized Algorithms by Motwani etc
https://drive.google.com/open?id=1SQE7AX1IwxuE2N84GWBtzGfPuS-sgPIv
Algorithms by Cormen et al
https://drive.google.com/open?id=16Wku5jfu9wrWyJoiNWR6PUrTUuAU-VJA
Approximation Algos for NP hard problems Hocbaum et al
https://drive.google.com/open?id=1a2HwZ0hv3UqwxelvXEvBHUN72abg99YQ
For search heuristics
https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-034-artificial-intelligence-fall-2010/lecture-videos/lecture-5-search-optimal-branch-and-bound-a/
For fibonacci heaps
http://hscc.cs.nthu.edu.tw/~sheujp/lecture_note/11algorithm/chapter19-1.pdf
http://hscc.cs.nthu.edu.tw/~sheujp/lecture_note/11algorithm/chapter19-2.pdf

Paper name: Art & Design
Name of faculty member: Prof. B. Biswal
Paper code: 911613, VI.4
Course: B.Tech. (IT&MI), Sem. VI
Links of books or material to be shared:
https://vernonpress.com/file/3783/a4cd57c64639592392b67c59a845f385/1493034322.pdf

https://dschool-old.stanford.edu/sandbox/groups/designresources/wiki/36873/attachments/74b3d/ModeGuideBOOTCAMP2010L.pdf

http://www.visual-arts-cork.com/art-definition.htm

Paper name: Handling Money - Finance Management
Name of faculty member: Nishant Sapra
Paper code: 911614, VI.5.1
Course: B.Tech. (IT & MI), Sem. VI
Links of books or material to be shared:
http://www.crectirupati.com/sites/default/files/lecture_notes/finance%20notes.pdf
http://www.eiilmuniversity.co.in/downloads/Financial-Management.pdf
http://www.sasurieengg.com/e-course-material/MBA/I-Year-Sem-2/BA7202%20FINANCIAL%20MANAGEMENT.pdf

Paper name: Embedded system studio-II
Name of faculty member: Parveen
Paper code: 911615, VI.5.2
Course: B. Tech. (IT & MI), Sem. VI
Links of books or material to be shared:
http://vhdl-manual.narod.ru/books/programming_by_example.pdf
http://www.pld.ttu.ee/~alsu/Pedroni_2010_Circuit%20Design%20and%20Simulation%20with%20VHDL.pdf
https://www.arl.wustl.edu/~jst/cse/260/ddc.pdf

Name of faculty member: Dr. Jogeswar S Purohit
Paper name: Biodefense and Bioengineering
Paper code: 911616, VI. 5.3
Course: B. Tech. (IT & MI), Sem. VI
Links of books or material to be shared:
1. Overview of the Immune Response doi:10.1016/j.jaci.2009.12.980
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=2ahUKEwjl25yQyqnpAhUY73MBHWmLA8gQFjACegQIAhAB&url=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpmc%2Farticles%2FPMC2923430%2F&usg=AOvVaw1CEsRa91XBYfBklpCl6pGn
2. Polyclonal Antibodies https://www.researchgate.net/publication/251845366
3. Monoclonal Antibodies DOI: 10.22271/ed.book04.a03
   https://www.researchgate.net/publication/322853339
4. Immunolocalization http://www.as-botanicalstudies.com/content/55/1/63
5. antibody structure.
   https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=20&cad=rja&uact=8&ved=2ahUKEwiS8P7QzKnpAhVg4nMBHcMVCE0QFjATegQIBRAB&url=https%3A%2F%2Fwww.wiley-vch.de%2Fbooks%2Fsample%2F3527333177_c01.pdf&usg=AOvVaw2WSPQLZoGdoIY_zVw-tTHA

Paper name: E-Business: Organization and Strategy
Name of faculty member: Dr. Subhash Kumar
Paper Number: 911617, (VI. 6.1)
Course: B.Tech. (IT & MI), Semester VI
Links of books or material to be shared:
*Reference Book: A. Afuah and C. L. Tucci (2003) *Internet Business Models and Strategies: Text and Cases*, McGraw-Hill.
https://drive.google.com/file/d/1lCajzGQ1Ra0Hl-M3tdaAj_fqPRhYVNzR/view?usp=sharing

Paper name: Control Systems
Name of faculty member: Dr. Harendra Pal Singh
Paper code: 911618, (VI.6.2)
Course: B.Tech. (IT&MI), VI Semester

Links of books or material to be shared:
https://dademuchconnection.files.wordpress.com/2017/07/control-systems-engineering-norman-nise.pdf
https://www.kau.edu.sa/Files/0060757/Subjects/2%20Simulink%20Basics%20Tutorial.pdf
http://www.silviosimani.it/simulink_for_beginners.pdf

Paper name: *in silico* Biology
Name of faculty member: Dr. Asani Bhaduri and Dr. Mahima Kaushik
Paper code: 911619, VI.6.3
Course: B. Tech. (IT&MI), Sem. VI
Links of books or material to be shared:
a. Google drive folder "Crazy Bio" (Shared with students attending the course).
b. https://www.ncbi.nlm.nih.gov/books/NBK550339/?term=bioinformatics
c. https://www.academia.edu/41704027/Introduction_to_Bioinformatics_by_Arthur_M._Lesk
d. https://www.e-booksdirectory.com/details.php?ebook=2584
e. https://www.e-booksdirectory.com/details.php?ebook=4481
f. https://www.ncbi.nlm.nih.gov/books/NBK1732/

Engineering Kitchen Activities [Laboratory]:
1. Sequence analysis (BLAST, FASTA). Database (NCBI, DDBJ, EMBL).
https://blast.ncbi.nlm.nih.gov/Blast.cgi
https://www.ddbj.nig.ac.jp/index-e.html
https://www.ebi.ac.uk/ena
2. Motif and Promoter searches (e.g. CD-Search, SMART, SignalP).
https://www.youtube.com/watch?v=5DWnCooAmb8
https://www.youtube.com/watch?v=83omZV8Bk3w
3. Phylogenetic analysis (PHYLIP, MEGA).
https://www.youtube.com/watch?v=wPRCLnF2NYk
https://www.youtube.com/watch?v=gc7dcShYBvE
4. Protein interaction (STRING, BioGRID).
https://www.youtube.com/watch?v=8-IPJqXYQ3Q
https://www.youtube.com/watch?v=lvX24gvZYDs
5. Protein structure, Function (PROSITE programs, Chimera.)
https://www.youtube.com/watch?v=4RCfMD0fFYs
https://www.youtube.com/watch?v=YJo2-1PDJtI&list=PL9hsubGPISJFDk_YFRr65rtLjsXvd0-2r
6. Gene expression, function (GEA, Gene card, OMIM).
https://www.youtube.com/watch?v=8AtGxxkcic8
https://www.youtube.com/watch?v=hNea0XlSYOo
https://www.youtube.com/watch?v=QIZ8QH6JcC8&t=248s
https://www.youtube.com/watch?v=QvavxKazmsY