

Course Offering UG 2nd Year and Rest Winter Semester (AY 2020-21)

| S.No.                                     | Course Code                     | Course Name   | Instructor                | Acronym | Credits | On Offer for                                       | Also Open for                             | Anti-Requisite          |
|---|---------------------------------|---|---------------------------|---------|---------|--|---|-------------------------|
| <b>IIInd Year Courses</b>                 |                                 |   |                           |         |         |  |   |                         |
| 1   | BIO221                          | Practical Bioinformatics                            | Tavpritesh Sethi          | PB      | 4       | CSB-Core   |   |                         |
| 2   | BIO213                          | Introduction to Quantitative Biology                | Jaspreet Kaur Dhanjal     | IQB     | 4       | CSB-Core, CSE,ECE,CSAM-Sci/Bio Elective            |   |                         |
| 3   | CSE202                          | Fundamentals of Database Systems                    | Mukesh Mohania            | DBMS    | 4       | CSE,CSB,CSSS,CSD-Core, CSAI-Elective               |   |                         |
| 4   | CSE222                          | Analysis and Design of Algorithms                   | Syamantak Das             | ADA     | 4       | CSE,CSAM,CSSS,CSAI, CSD(one of ADA/ADA(B))-Core    |   | CSE223                  |
| 5   | CSE223                          | Analysis and Design of Algorithms(B)                | Jatin Batra               | ADA(B)  | 4       | CSB, CSD(one of ADA/ADA(B))-Core                   |   | CSE222                  |
| 6   | CSE322                          | Theory of Computation                               | Debajyoti Bera            | TOC     | 4       | CSAM-Core, CSE,CSD,CSAI-Elective                   | UG/PG Elective                            |                         |
| 7   | CSE342/CSE542                   | Statistical Machine Learning                        | A V Subramanyam           | SML     | 4       | CSAI Core  | UG/PG Elective                            |                         |
| 8   | ECO221                          | Econometrics I                                      | Gaurav Arora              | ECOI    | 4       | CSSS Core  | UG Elective                               | ECO321                  |
| 9   | MTH377/MTH577                   | Convex Optimization                                 | Rakesh Chaturvedi         | COO     | 4       | CSSS,CSAI Core                                     | UG/PG Elective                            |                         |
| 10  | ECE214                          | Integrated Electronics                              | Mohammad S Hashmi         | IE      | 4       | ECE-Core   |   |                         |
| 11  | ECE230                          | Fields and Waves                                    | Sayak Bhattacharya        | FW      | 4       | ECE-Core   |   |                         |
| 12  | ECE240                          | Principles of Communication Systems                 | Ranjitha Prasad           | PCS     | 4       | ECE-Core, CSE,CSAM-Sci/Bio Elective, CSAI-Elective |   |                         |
| 13  | MTH204                          | Maths IV - ODE/PDE                                  | Ashish Kumar Pandey       | MIV     | 4       | ECE,CSAM-Core, CSE, CSD,CSAI-Elective              |   |                         |
| 14  | MTH212                          | Abstract Algebra I                                  | Sneha Chaubey             | AAI     | 4       | CSAM-Core  |   |                         |
| 15  | MTH300                          | Introduction to Mathematical logic                  | Sankha S Basu             | IML     | 4       | CSAI-Elective,CSE,ECE,CSAM-Elective                | UG/PG Elective                            |                         |
| 16  | MTH310                          | Graph Theory  | Samaresh Chatterji(V)     | GT      | 4       | CSE,CSSS,CSAI-Elective                             | UG/PG Elective                            |                         |
| 17  | MTH372                          | Statistical Inference                               | Monika Arora              | SI      | 4       | CSAI-Elective                                      | CSAM IIIrd year core, Elective for others | Statistical Computation |
| 18  | DES204                          | Human Computer Interaction                          | Grace Eden                | HCI     | 4       | CSD-Core, CSE,CSSS-Elective                        |   |                         |
| 20  | DES205                          | Design of Interactive Systems(New)                  | Aman Pamami               | DIS     | 4       | CSD-Core   |   |                         |
| <b>UG IIIrd, IVth Year and PG Courses</b> |                                 |   |                           |         |         |  |   |                         |
| 1   | BIO522                          | Algorithms in Computational Biology                 | Debarika Sengupta         | ACB     | 4       | UG/PG  |   |                         |
| 2   | BIO531                          | Introduction to Mathematical Biology                | Sriram K                  | IMB     | 4       | UG/PG  |   |                         |
| 3   | BIO534                          | Introduction to Computational Neuroscience          | Sriram K                  | ICN     | 4       | UG/PG  |   |                         |
| 4   | BIO541                          | Data Sciences for Genomics                          | Vibhor Kumar              | DSG     | 4       | UG/PG  |   |                         |
| 5   | BIO543                          | Big Data Mining in Healthcare                       | G P S Raghava             | BDMH    | 4       | UG/PG  |   |                         |
| 6   | BIO545                          | Biostatistics                                       | Gaurav Ahuja              | BStats  | 4       | UG/PG  |   |                         |
| 7   | BIO563                          | Computer Aided Drug Design                          | Arjun Ray                 | CADD    | 4       | UG/PG  |   |                         |
| 8   | CSE343/ECE363/<br>ECE563        | Machine Learning                                    | Saket Anand               | ML      | 4       | UG/PG  |   | CSE543                  |
| 9   | CSE344/CSE544/<br>ECE344/ECE544 | Computer Vision                                     | Koteswar Rao Jerripothula | CV      | 4       | UG/PG  |   |                         |
| 10  | CSE354/CSE554                   | Networks and System Security II (New)               | Sambuddho Chakravarty     | NSSII   | 4       | UG/PG  |   |                         |
| 11  | CSE502                          | Foundations of Parallel Programing                  | Vivek Kumar               | FPP     | 4       | UG/PG  |   |                         |
| 12  | CSE504                          | Decision Procedures                                 | Rahul Purandare           | DP      | 4       | UG/PG  |   |                         |
| 13  | CSE508                          | Information Retrieval                               | Rajiv Ratn Shah           | IR      | 4       | UG/PG  |   |                         |
| 14  | CSE516/ECE559                   | Theories of Deep Learning(New)                      | Vinayak Abrol             | TDL     | 4       | UG/PG  |   |                         |
| 15  | CSE528                          | Introduction to Blockchain and Cryptocurrency (New) | Donghoon Chang            | IBC     | 4       | UG/PG  |   |                         |
| 16  | CSE535                          | Mobile computing                                    | Mukulika Maity            | MC      | 4       | UG/PG  |   |                         |
| 17  | CSE538/ECE538                   | Wireless Network                                    | Arani Bhattacharya        | WN      | 4       | UG/PG  |   |                         |
| 18  | CSE557                          | Big Data analytics                                  | Vikram Goyal              | BDA     | 4       | UG/PG  |   |                         |
| 19  | CSE559                          | Mining Large Networks                               | Tanmoy Chakraborty        | MLN     | 4       | UG/PG  |   |                         |
| 20  | CSE560                          | GPU Computing                                       | Ojaswa Sharma             | GPU     | 4       | UG/PG  |   |                         |
| 21  | CSE561                          | Probabilistic Graphical Methods                     | Anubha Gupta              | PGM     | 4       | UG/PG  |   |                         |
| 22  | CSE583                          | Software Development using Open Source              | Pankaj Jalote             | SDOS    | 4       | UG/PG  |   |                         |
| 23  | CSE609                          | Statistical Computation                             | Vibhor Kumar              | Scomp   | 4       | UG/PG  |   |                         |
| 24  | CSE631                          | Advanced Operating Systems                          | Piyus Kedia               | AOS     | 4       | UG/PG  |   |                         |
| 25  | CSE640                          | Collaborative Filtering                             | Angshul Majumadar         | CF      | 4       | UG/PG  |   |                         |
| 26  | CSE641                          | Deep Learning                                       | Md. Shad Akhtar           | DL      | 4       | UG/PG  |   |                         |
| 27  | CSE648                          | Privacy and Security in Online Social Media         | Ponnuramgum Kumaraguru    | PSOSM   | 4       | UG/PG  |   |                         |
| 28  | CSE655                          | Network Science                                     | Ganesh Bagler             | NS      | 4       | UG/PG  |   | BIO571                  |
| 29  | CSE660                          | Trustworthy AI Systems (New)                        | C Anantram (V)            | TAIS    | 4       | UG/PG  |   | CSE660A                 |
| 30  | CSE661/DES507                   | Affective Computing                                 | Jainendra Shukla          | AFC     | 4       | UG/PG  |   |                         |
| 31  | CSE663A                         | Meta-learning(New)                                  | Gautam Shroff             | MEL     | 2       | UG/PG  |   |                         |

|    |               |   |                                 |       |   |   |  |  |
|----|---------------|---|---------------------------------|-------|---|---|--|--|
| 32 | DES302        | Animations & Graphics   | Manohar Khushlani               | AG    | 4 | UG/PG                                       |  |  |
| 33 | DES502        | Introduction to 2D Animation  | Anoop Ratnv (V)                 | I2D   | 4 | UG/PG                                       |  |  |
| 34 | DES503        | Introduction to 3D Character Animation  | Anoop Ratnv (V)                 | I3D   | 4 | UG/PG                                       |  |  |
| 35 | DES504        | Narratives in Visual Communication (New)  | Indrani De Parker (V)           | NVC   | 4 | UG/PG                                       |  |  |
| 36 | DES506        | Advanced Topics in Human-Centered Computing                                     | Pushpendra Singh                | ATHCC | 4 | UG/PG                                       |  |  |
| 37 | DES512        | Game Design and Development   | Aman Samuel (V)                 | GDD   | 4 | UG/PG                                       |  |  |
| 38 | DES521        | Fundamentals of Video for Engineers(New)  | Angshu Das (V)                  | FVE   | 4 | UG/PG                                       |  |  |
| 39 | ECE412/ECE612 | Mixed Signal Design   | G S Visweswaran(V)              | MSD   | 4 | UG/PG                                       |  |  |
| 40 | ECE432/ECE632 | Radar Systems   | Shobha Sundaram                 | RS    | 4 | UG/PG                                       |  |  |
| 41 | ECE452/ECE552 | Statistical Signal Processing   | Pravesh Biyani                  | SSP   | 4 | UG/PG                                       |  |  |
| 42 | ECE513        | VLSI Design Flow  | Sneh Saurabh                    | VDF   | 4 | UG/PG                                       |  |  |
| 43 | ECE520        | Low Voltage Circuit Design  | S S Jamuar                      | LVCD  | 4 | UG/PG                                       |  |  |
| 44 | ECE532        | Next Generation Optical Networks(New)   | Abhijit Mitra(V)                | NGON  | 4 | UG/PG                                       |  |  |
| 45 | ECE533        | Satellite Navigation and Sensor Fusion  | Sanat K Biswas                  | SNSF  | 4 | UG/PG                                       |  |  |
| 46 | ECE534        | Optical Communications Systems  | Anand Srivastava                | OCS   | 4 | UG/PG                                       |  |  |
| 47 | ECE537        | Wireless Communication: Evolution from 3G to 5G                                 | Vivek Bohara                    | WCE   | 4 | UG/PG                                       |  |  |
| 48 | ECE541        | Modeling and Analysis of Random 5G Network                                      | Gourab Ghatak                   | 5GN   | 4 | UG/PG                                       |  |  |
| 49 | ECE573        | Advanced Embedded Logic Design  | Sumit Darak                     | AELD  | 4 | UG/PG                                       |  |  |
| 50 | ECE577        | Machine Learning Techniques for Real Time Control                               | Sayan Basu Roy                  | MLRC  | 4 | UG/PG                                       |  |  |
| 51 | ECE611        | Memory Design and Test  | Anuj Grover                     | MDT   | 4 | UG/PG                                       |  |  |
| 52 | ECO312/ECO512 | Industrial Organization   | Kiriti Kanjilal                 | IO    | 4 | UG/PG                                       |  |  |
| 53 | ECO332        | Valuation and Portfolio Management  | Pankaj Vajpayee (V)             | VPM   | 4 | UG/PG                                       |  |  |
| 54 | ENG599s       | Research Methods  | Sanat K Biswas                  | RM    | 2 | PG  |  |  |
| 55 | ENT413        | Entrepreneurial Finance (New)   | Pankaj Vajpayee (V)             | EF    | 4 | UG/PG                                       |  |  |
| 56 | ENT414        | Relevance of Intellectual Property for Startups (New)                           | Amit Shukla (G)                 | RIPS  | 4 | UG/PG                                       |  |  |
| 57 | ENT415        | New Venture Planning (New)  | Priyank Narayan (G)             | NVP   | 4 | UG/PG                                       |  |  |
| 58 | ENT416/ENT516 | Creativity, Innovation, and Inventive Problem Solving (New)                     | Anuj Grover+Anupam Soranwala(V) | CIIPS | 4 | UG/PG                                       |  |  |
| 59 | MTH311        | Combinatorics and its applications  | Samrith Ram                     | CIA   | 4 | UG  |  |  |
| 60 | MTH374/MTH574 | Linear Optimization   | Subhashree Mohapatra            | LO    | 4 | CSAM IIIrd yr-Core, Elective for all others |  |  |
| 61 | MTH510        | Advanced Linear Algebra   | Debika Banerjee                 | ALA   | 4 | UG/PG                                       |  |  |
| 62 | MTH513        | Abstract Algebra-II   | Anuradha Sharma                 | AAII  | 4 | UG/PG                                       |  |  |
| 63 | MTH544        | Calculus on R^n with Applications   | Kaushik Kalyanaraman            | CRN   | 4 | UG/PG                                       |  |  |
| 64 | MTH599        | Variational Calculus and their Applications in Control Theory and Nanomechanics | Sarthok Sircar                  | VCA   | 4 | UG/PG                                       |  |  |
| 65 | MTH546        | Measure and Probability Theory(New)   | Shilpak Banerjee                | MPT   | 4 | UG/PG                                       |  |  |
| 66 | PSY301        | Cognitive Psychology  | Sonia Baloni Ray                | CP    | 4 | UG/PG                                       |  |  |
| 67 | PSY302        | Social Psychology   | Venkata Ratnadeep Suri          | SP    | 4 | UG/PG                                       |  |  |
| 68 | PSY306        | Learning and Memory   | Mrinmoy Chakrabarty             | LM    | 4 | UG/PG                                       |  |  |
| 69 | SOC207        | Information Technology and Society  | Amrit Srinivasan (V)            | ITS   | 4 | UG  |  |  |
| 70 | SOC312/SOC502 | Advanced Sociological Theory (New)  | Gayatri Nair                    | AST   | 4 | UG/PG                                       |  |  |
| 71 | SOC313/SOC503 | Sociology of India: Themes and Perspectives(New)                                | Smriti Singh                    | SoI   | 4 | UG/PG                                       |  |  |
| 72 | SSH224        | Computer, Information Ethics and Society  | Shweta Singh (L)                | CIES  | 4 | UG  |  |  |
| 73 | SSH321        | Applied Ethics  | Manohar Kumar                   | AE    | 4 | UG/PG                                       |  |  |
| 74 | SSH324        | Philosophy of Mind (New)  | Nishad Patnaik                  | PM    | 4 | UG/PG                                       |  |  |

#### Online Courses

| S.No. | Course Code | Course Name   | Instructor    | Credits | Link to the course  | Remarks   |
|-------|-------------|---|---------------|---------|---|---|
| 1     | ESC999A     | Aircraft Design   | Gourab Ghatak | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_ae04/preview">https://onlinecourses.nptel.ac.in/noc21_ae04/preview</a> | 1. For these courses, registration on SWAYAM portal and appearing for exams conducted by SWAYAM is compulsory.<br>2. PG students can take these courses only as Independent Study |
| 2     | ESC999A2    | Lighter than Air Systems  |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_ae07/preview">https://onlinecourses.nptel.ac.in/noc21_ae07/preview</a> |   |
| 3     | BIO999B     | BioPhotonics  |               | 1       | <a href="https://onlinecourses.nptel.ac.in/noc21_ge13/preview">https://onlinecourses.nptel.ac.in/noc21_ge13/preview</a> |   |
| 4     | CSE999A     | Cloud Computing and Distributed Systems   |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_cs15/preview">https://onlinecourses.nptel.ac.in/noc21_cs15/preview</a> |   |
| 5     | CSE999A2    | Randomized Methods in Complexity  |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_cs53/preview">https://onlinecourses.nptel.ac.in/noc21_cs53/preview</a> |   |
| 6     | CSE999B     | Software Testing  |               | 1       | <a href="https://onlinecourses.nptel.ac.in/noc21_cs13/preview">https://onlinecourses.nptel.ac.in/noc21_cs13/preview</a> |   |
| 7     | DES999A     | Design, Technology and Innovation   |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_de03/preview">https://onlinecourses.nptel.ac.in/noc21_de03/preview</a> |   |
| 8     | ECE999A     | Sensors and Actuators   |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_ee32/preview">https://onlinecourses.nptel.ac.in/noc21_ee32/preview</a> |   |
| 9     | ECE999A2    | Fundamental of Power Electronics  |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_ee01/preview">https://onlinecourses.nptel.ac.in/noc21_ee01/preview</a> |   |
| 10    | ECE999A3    | Applied Linear Algebra for Signal Processing, Data Analytics and Machine Learning |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_ee33/preview">https://onlinecourses.nptel.ac.in/noc21_ee33/preview</a> |   |
| 11    | ESC999A3    | Quantum Mechanics I   |               | 2       | <a href="https://onlinecourses.nptel.ac.in/noc21_ph04/preview">https://onlinecourses.nptel.ac.in/noc21_ph04/preview</a> |   |

**B.Tech. 2nd Year - Winter Semester (AY 2020-21)**

| Day   | 9-9.30                           | 9.30-10 | 10-10.30 | 10.30-11                      | 11-11.30 | 11.30-12 | 12-12.30                         | 12.30-1 | 1-1.30 | 1.30-2                           | 2-2.30 | 2.30-3          | 3-3.30                           | 3.30-4 | 4-4.30         | 4.30-5  | 5-5.30 | 5.30-6 | 6-6.30 | 6.30-7 |  |          |
|-------|----------------------------------|---------|----------|-------------------------------|----------|----------|----------------------------------|---------|--------|----------------------------------|--------|-----------------|----------------------------------|--------|----------------|---|--------|--------|--------|--------|--|----------|
| Mon   | Tut M-IV ~                       |         |          | PCS ~<br>DIS ~<br>Tut ADA Gp1 |          |          | Tut IE Gp1/2 ~<br>PB ~<br>HCI ~  |         |        | <b>L<br/>U<br/>N<br/>C<br/>H</b> |        | F&W ~<br>DBMS ~ |                                  |        | IML ~<br>AST ~ |   |        |        |        |        |  |          |
| Tue   | TOC ~<br>IE ~<br>LM ~            |         |          | ADA ~<br>ADA(B) ~<br>Tut PCS  |          |          | M-IV ~                           |         |        |                                  |        |                 | IQB ~<br>EcoI ~<br>SML ~<br>SP ~ |        |                | SI ~<br>GT ~<br>Tut ADA(B) Gp2<br>Tut ADA Gp2 |        |        |        |        |  |          |
| Wed   | COO ~<br>AAI ~<br>Tut ADA(B) Gp1 |         |          | PCS ~<br>DIS ~                |          |          | Tut F&W Gp 1/2 ~<br>Tut AAI ~    |         |        |                                  |        |                 | Tut IML ~<br>Tut TOC ~           |        |                | Seminar                                       |        |        |        |        |  | Tut DBMS |
| Thurs | TOC ~<br>IE ~<br>LM ~            |         |          | Tut GT ~                      |          |          | PB ~<br>HCI ~<br>Lab IE Gp 1/2 ~ |         |        |                                  |        |                 | F&W ~<br>DBMS ~                  |        |                | IML ~<br>AST ~                                |        |        |        |        |  |          |
| Fri   | COO ~<br>AAI ~                   |         |          | ADA ~<br>ADA(B) ~             |          |          | M-IV ~                           |         |        |                                  |        |                 | IQB ~<br>EcoI ~<br>SML ~<br>SP ~ |        |                | SI ~<br>GT ~                                  |        |        |        |        |  |          |
| Day   | 9-9.30                           | 9.30-10 | 10-10.30 | 10.30-11                      | 11-11.30 | 11.30-12 | 12-12.30                         | 12.30-1 | 1-1.30 | 1.30-2                           | 2-2.30 | 2.30-3          | 3-3.30                           | 3.30-4 | 4-4.30         | 4.30-5  | 5-5.30 | 5.30-6 | 6-6.30 | 6.30-7 |  |          |

*Duration of the Lectures will be 50 mins and 80 mins*

| Course No.         | Course Name   | Instructor             | Acronym | Credits | On offer for   |
|--------------------|---|------------------------|---------|---------|--|
| BIO213             | Introduction to Quantitative Biology  | Jaspreet Kaur Dhanjal  | IQB     | 4       | CSB-Core, CSE,ECE,CSAM-Sci/Bio Elective                          |
| BIO221             | Practical Bioinformatics  | Tavpritesh Sethi       | PB      | 4       | CSB-Core   |
| CSE202             | Fundamentals of Database Systems  | Mukesh Mohania         | DBMS    | 4       | CSE,CSB,CSSS,CSD-Core, CSAI-Core Elective,CSAM-Elective          |
| CSE222             | Analysis and Design of Algorithms   | Syamantak Das          | ADA     | 4       | CSE,CSAM,CSSS,CSAI-Core, CSD-Core Elective                       |
| CSE223             | Analysis and Design of Algorithms(B)  | Jatin Batra            | ADA(B)  | 4       | CSB-Core, CSD-Core Elective                                      |
| CSE322             | Theory of Computation   | Debajyoti Bera         | TOC     | 4       | CSAM-Core, CSE,CSD,CSAI-Core Elective                            |
| CSE342             | Statistical Machine Learning  | A V Subramanyam        | SML     | 4       | CSAI Core  |
| DES204             | Human Computer Interaction  | Grace Eden             | HCI     | 4       | CSD-Core, CSE-Core Elective,CSSS-Elective                        |
| DES205             | Design of Interactive Systems   | Aman Parnami           | DIS     | 4       | CSD-Core   |
| ECE214             | Integrated Electronics  | Mohammad S Hashmi      | IE      | 4       | ECE-Core   |
| ECE230             | Fields and Waves  | Sayak Bhattacharya     | FW      | 4       | ECE-Core   |
| ECE240             | Principles of Communication Systems   | Ranjitha Prasad        | PCS     | 4       | ECE-Core, CSE,CSAM-Sci/Bio Elective                              |
| ECO221             | Econometrics 1  | Gaurav Arora           | ECOI    | 4       | CSSS Core, CSD-SSH Elective                                      |
| MTH204             | Maths IV - ODE/PDE  | Ashish Kumar Pandey    | MIV     | 4       | ECE,CSAM-Core, CSE,CSD,CSAI-Core Elective                        |
| MTH212             | Abstract Algebra I  | Sneha Chaubey          | AAI     | 4       | CSAM-Core, CSE-Sci/Bio Elective                                  |
| MTH300             | Introduction to Mathematical logic  | Sankha Basu            | IML     | 4       | CSAI-Core Elective,CSE,ECE,CSAM-Sci/Bio Elective                 |
| MTH310             | Graph Theory  | Samaresh Chatterji     | GT      | 4       | CSE,CSAI-Core Elective,CSSS-Elective, CSAM, ECE-Sci/Bio Elective |
| MTH372             | Statistical Inference   | Monika Arora           | SI      | 4       | CSAI-Core Elective   |
| MTH377             | Convex Optimization   | Rakesh Chaturvedi      | COO     | 4       | CSSS,CSAI Core   |
| PSY302             | Social Psychology   | Venkat Ratandeeep Suri | SP      | 4       | CSD-SSH Elective   |
| PSY306             | Learning and Memory   | Mrinmoy Chakrabarty    | LM      | 4       | CSD-SSH Elective   |
| SOC312             | <b>Advanced Sociological Theory (New)</b>   | Gayatri Nair           | AST     | 4       | CSD-SSH Elective   |
| Core:              | These courses are the mandatory courses   |                        |         |         |  |
| Core Electives:    | These courses are such courses where students have a choice to choose from a set of courses |                        |         |         |  |
| Sci/Bio Electives: | These courses are Sci/Bio electives from which students are required to one course          |                        |         |         |  |
| Electives:         | These courses are elective courses  |                        |         |         |  |
| SSH Electives:     | These courses are SSH elective courses  |                        |         |         |  |

**Note: To have a better understanding about branch specific core and elective courses, please check the program specific regulations before registering the courses on ERP.**

**B.Tech. 3rd & 4th Year, M.Tech 1st & 2nd year, Ph.D - Winter Semester (AY 2020-21)**

| Day   | 9-9:30  | 9.30-10 | 10-10.30 | 10.30-11   | 11-11.30 | 11.30-12 | 12-12.30                                     | 12.30-1 | 1-1.30 | 1:30-2 | 2-2.30 | 2.30-3  | 3-3.30 | 3.30-4 | 4-4.30   | 4.30-5 | 5-5.30 | 5:30-6 | 6-6:30 | 6:30-7 |  |
|-------|---|---------|----------|--|----------|----------|--|---------|--------|--------|--------|---|--------|--------|--|--------|--------|--------|--------|--------|--|
| Mon   | DSG<br>MPT<br>ML<br>IO<br>EF                      |         |          | BDMH<br>DP<br>Scomp<br>ATHCC<br>SSP<br>RIPS<br>CP      |          |          | RM   |         |        |        |        | WN<br>DL<br>LVCD<br>CIES<br>RS<br>CADD                                  |        |        | MC<br>PGM<br>MSD<br>5GN<br>LO<br>AST<br>IML<br>NSSII |        |        |        |        |        |  |
| Tue   | TOC<br>IR<br>NS<br>FVE<br>OCS<br>LM<br>ICN<br>IBC |         |          | ACB<br>AE<br>PSOSM<br>AG<br>MDT<br>CRN<br>AAII<br>TAIS |          |          | VCA<br>CV<br>SDOS<br>I2D<br>PM<br>Sol        |         |        |        |        | BStats<br>SP<br>NVP<br>GDD<br>SNSF<br>MLRC<br>MLN<br>SML<br>AOS<br>Ecol |        |        | GT<br>SI<br>IMB<br>I3D<br>FPP<br>AELD<br>VPM         |        |        |        |        |        |  |
| Wed   | GPU<br>AFC<br>VDF<br>ALA<br>COO<br>NGON           |         |          | DSG<br>MPT<br>ML<br>IO<br>EF                           |          |          | CF<br>BDA<br>NVC<br>WCE<br>CIA<br>ITS<br>TDL |         |        |        |        |   |        |        | Seminar Slot   |        |        |        |        |        |  |
| Thurs | TOC<br>IR<br>NS<br>FVE<br>OCS<br>LM<br>ICN<br>IBC |         |          | BDMH<br>DP<br>Scomp<br>ATHCC<br>SSP<br>RIPS<br>CP      |          |          | VCA<br>CV<br>SDOS<br>I2D<br>PM<br>Sol        |         |        |        |        | WN<br>DL<br>LVCD<br>CIES<br>RS<br>CADD                                  |        |        | MC<br>PGM<br>MSD<br>5GN<br>LO<br>AST<br>IML<br>NSSII |        |        |        |        |        |  |
| Fri   | GPU<br>AFC<br>VDF<br>ALA<br>COO<br>NGON           |         |          | ACB<br>AE<br>PSOSM<br>AG<br>MDT<br>CRN<br>AAII<br>TAIS |          |          | CF<br>BDA<br>NVC<br>WCE<br>CIA<br>ITS<br>TDL |         |        |        |        | BStats<br>SP<br>NVP<br>GDD<br>SNSF<br>MLRC<br>MLN<br>SML<br>AOS<br>Ecol |        |        | GT<br>SI<br>IMB<br>I3D<br>FPP<br>VPM                 |        |        |        |        |        |  |
| Sat   |   |         |          |  |          |          |  |         |        |        |        | CIIPS   |        |        |  |        |        |        |        |        |  |
|       |   |         |          |  |          |          |  |         |        |        |        |   |        |        |  |        |        |        |        |        |  |

**L  
U  
N  
C  
H**

*Duration of the Lectures will be 50 mins and 80 mins*

| Course No. | Course Name                         | Instructor       | Acronym | Credits | On offer for |
|------------|-------------------------------------|------------------|---------|---------|--------------|
| BIO522     | Algorithms in Computational Biology | Debarka Sengupta | ACB     | 4       | UG/PG        |

|                    |   |                           |        |   |       |
|--------------------|---|---------------------------|--------|---|-------|
| BIO531             | Introduction to Mathematical Biology                | Sriram K                  | IMB    | 4 | UG/PG |
| BIO534             | Introduction to Computational Neuroscience          | Sriram K                  | ICN    | 4 | UG/PG |
| BIO541             | Data Sciences for Genomics                          | Vibhor Kumar              | DSG    | 4 | UG/PG |
| BIO543             | Big Data Mining in Healthcare                       | G P S Raghava             | BDMH   | 4 | UG/PG |
| BIO545             | Biostatistics                                       | Gaurav Ahuja              | BStats | 4 | UG/PG |
| BIO563             | Computer Aided Drug Design                          | Arjun Ray                 | CADD   | 4 | UG/PG |
| CSE322             | Theory of Computation                               | Debajyoti Bera            | TOC    | 4 | UG/PG |
| CSE343/ECE363/ ECE | Machine Learning                                    | Saket Anand               | ML     | 4 | UG/PG |
| CSE342/CSE542      | Statistical Machine Learning                        | A V Subramanyam           | SML    | 4 | UG/PG |
| CSE344/CSE544/ ECE | Computer Vision                                     | Koteswar Rao Jerripothula | CV     | 4 | UG/PG |
| CSE354/CSE554      | Networks and System Security II (New)               | Sambuddho Chakravarty     | NSSII  | 4 | UG/PG |
| CSE502             | Foundations of Parallel Programing                  | Vivek Kumar               | FPP    | 4 | UG/PG |
| CSE504             | Decision Procedures                                 | Rahul Purandare           | DP     | 4 | UG/PG |
| CSE508             | Information Retrieval                               | Rajiv Ratn Shah           | IR     | 4 | UG/PG |
| CSE516/ECE559      | Theories of Deep Learning (New)                     | Vinayak Abrol             | TDL    | 4 | UG/PG |
| CSE528             | Introduction to Blockchain and Cryptocurrency (New) | Donghoon Chang            | IBC    | 4 | UG/PG |
| CSE535             | Mobile computing                                    | Mukulika Maity            | MC     | 4 | UG/PG |
| CSE538/ECE538      | Wireless Network                                    | Arani Bhattacharya        | WN     | 4 | UG/PG |
| CSE557             | Big Data analytics                                  | Vikram Goyal              | BDA    | 4 | UG/PG |
| CSE559             | Mining Large Networks                               | Tanmoy Chakraborty        | MLN    | 4 | UG/PG |
| CSE560             | GPU Computing                                       | Ojaswa Sharma             | GPU    | 4 | UG/PG |
| CSE561             | Probabilistic Graphical Methods                     | Anubha Gupta              | PGM    | 4 | UG/PG |
| CSE583             | Software Development using Open Source              | Pankaj Jalote             | SDOS   | 4 | UG/PG |
| CSE609             | Statistical Computation                             | Vibhor Kumar              | Scomp  | 4 | UG/PG |
| CSE631             | Advanced Operating Systems                          | Piyus Kedia               | AOS    | 4 | UG/PG |
| CSE640             | Collaborative Filtering                             | Angshul Majumadar         | CF     | 4 | UG/PG |
| CSE641             | Deep Learning                                       | Md. Shad Akhtar           | DL     | 4 | UG/PG |
| CSE648             | Privacy and Security in Online Social Media         | Ponnurangam Kumaraguru    | PSOSM  | 4 | UG/PG |
| CSE655             | Network Science                                     | Ganesh Bagler             | NS     | 4 | UG/PG |
| CSE660             | Trustworthy AI Systems (New)                        | C Anantram(V)             | TAIS   | 4 | UG/PG |
| CSE661/DES507      | Affective Computing                                 | Jainendra Shukla          | AFC    | 4 | UG/PG |
| CSE663A            | Meta-learning                                       | Gautam Shroff(G)          | MEL    | 2 | UG/PG |
| DES302             | Animations & Graphics                               | Manohar Khushlani         | AG     | 4 | UG/PG |
| DES502             | Introduction to 2D Animation                        | Anoop Ratn (V)            | I2D    | 4 | UG/PG |
| DES503             | Introduction to 3D Character Animation              | Anoop Ratn (V)            | I3D    | 4 | UG/PG |
| DES504             | Narratives in Visual Communication (New)            | Indrani De Parker (V)     | NVC    | 4 | UG/PG |
| DES506             | Advanced Topics in Human-Centered Computing         | Pushpendra Singh          | ATHCC  | 4 | UG/PG |
| DES512             | Game Design and Development                         | Aman Samuel (V)           | GDD    | 4 | UG/PG |
| DES521             | Fundamentals of Video for Engineers(New)            | Angshu Das (V)            | FVE    | 4 | UG/PG |
| ECE412/ECE612      | Mixed Signal Design                                 | G S Visweswaran           | MSD    | 4 | UG/PG |
| ECE432/ECE632      | Radar Systems                                       | Shobha Sundaram           | RS     | 4 | UG/PG |
| ECE452/ECE552      | Statistical Signal Processing                       | Pravesh Biyani            | SSP    | 4 | UG/PG |
| ECE513             | VLSI Design Flow                                    | Sneh Saurabh              | VDF    | 4 | UG/PG |
| ECE520             | Low Voltage Circuit Design                          | S S Jamuar                | LVCD   | 4 | UG/PG |
| ECE532             | Next Generation Optical Networks(New)               | Abhijit Mitra(V)          | NGON   | 4 | UG/PG |
| ECE533             | Satellite Navigation and Sensor Fusion              | Sanat K Biswas            | SNSF   | 4 | UG/PG |
| ECE534             | Optical Communications Systems                      | Anand Srivastava          | OCS    | 4 | UG/PG |
| ECE537             | Wireless Communication: Evolution from 3G to 5G     | Vivek Bohara              | WCE    | 4 | UG/PG |
| ECE541             | Modeling and Analysis of Random 5G Network          | Gourab Ghatak             | 5GN    | 4 | UG/PG |
| ECE573             | Advanced Embedded Logic Design                      | Sumit Darak               | AELD   | 4 | UG/PG |
| ECE577             | Machine Learning Techniques for Real Time Control   | Sayan Basu Roy            | MLRC   | 4 | UG/PG |

Course will commence from 15 Feb, 21

|               |   |                                 |       |   |                                      |
|---------------|---|---------------------------------|-------|---|--------------------------------------|
| ECE611        | Memory Design and Test  | Anuj Grover                     | MDT   | 4 | UG/PG                                |
| ECO221        | Econometrics I  | Gaurav Arora                    | ECOI  | 4 | UG                                   |
| ECO312/ECO512 | Industrial Organization   | Kiriti Kanjilal                 | IO    | 4 | UG/PG                                |
| ECO332        | Valuation and Portfolio Management  | Pankaj Vajpayee (V)             | VPM   | 4 | UG/PG                                |
| ENG599s       | Research Methods  | Sanat K Biswas                  | RM    | 2 | PG                                   |
| ENT413        | Entrepreneurial Finance (New)   | Pankaj Vajpayee (V)             | EF    | 4 | UG/PG                                |
| ENT414        | Relevance of Intellectual Property for Startups (New)                           | Amit Shukla (G)                 | RIPS  | 4 | UG/PG                                |
| ENT415        | New Venture Planning (New)  | Priyank Narayan (G)             | NVP   | 4 | UG/PG                                |
| ENT416/ENT516 | Creativity, Innovation, and Inventive Problem Solving (New)                     | Anuj Grover+Anupam Soranwala(V) | CIIPS | 4 | UG/PG                                |
| MTH300        | Introduction to Mathematical logic  | Sankha S Basu                   | IML   | 4 | UG/PG                                |
| MTH310        | Graph Theory  | Samresh Chatterji               | GT    | 4 | UG/PG                                |
| MTH311        | Combinatorics and its applications  | Samrith Ram                     | CIA   | 4 | UG/PG                                |
| MTH372        | Statistical Inference   | Monika Arora                    | SI    | 4 | CSAM IIIrd year core, UG/PG Elective |
| MTH374/MTH574 | Linear Optimization   | Subhashree Mohapatra            | LO    | 4 |                                      |
| MTH377/MTH577 | Convex Optimization   | Rakesh Chaturvedi               | COO   | 4 | UG/PG                                |
| MTH510        | Advanced Linear Algebra   | Debika Banerjee                 | ALA   | 4 | UG/PG                                |
| MTH513        | Abstract Algebra-II   | Anuradha Sharma                 | AAII  | 4 | UG/PG                                |
| MTH544        | Calculus on $R^n$ with Applications   | Kaushik Kalyanaraman            | CRN   | 4 | UG/PG                                |
| MTH599        | variational Calculus and their Applications in Control theory and Nanomechanics | Sarthok Sircar                  | VCA   | 4 | UG/PG                                |
| MTH546        | Measure and Probability Theory(New)   | Shilpak Banerjee                | MPT   | 4 | UG/PG                                |
| PSY301        | Cognitive Psychology  | Sonia Baloni Ray                | CP    | 4 | UG/PG                                |
| PSY302        | Social Psychology   | Venkata Ratnadeep Suri          | SP    | 4 | UG/PG                                |
| PSY306        | Learning and Memory   | Mrinmoy Chakrabarty             | LM    | 4 | UG/PG                                |
| SOC207        | Information Technology and Society  | Amrit Srinivasan (V)            | ITS   | 4 | UG                                   |
| SOC312/SOC502 | Advanced Sociological Theory (New)  | Gayatri Nair                    | AST   | 4 | UG/PG                                |
| SOC313/SOC503 | Sociology of India: Themes and Perspectives(New)                                | Smriti Singh                    | SoI   | 4 | UG/PG                                |
| SSH224        | Computer, Information Ethics and Society  | Shweta Singh (L)                | CIES  | 4 | UG                                   |
| SSH321        | Applied Ethics  | Manohar Kumar                   | AE    | 4 | UG/PG                                |
| SSH324        | Philosophy of Mind (New)  | Nishad Patnaik                  | PM    | 4 | UG/PG                                |

**Note: To have a better understanding about branch specific core and elective courses, students are requested to check their program specific regulations before registering the courses on ERP.**