

## Major Courses and Text Books

### Level – 4, Term – 2

| Course No | Course Title            | Credit Hour | Text Book and Author   |
|-----------|-------------------------|-------------|--|
| CSE409    | Computer Graphics       | 3.00        | [1] J. D. Foley, A. v. Dam, S. K. Feiner and J. F. Hughes, <i>Computer Graphics Principles and Practice</i> , 2e, Pearson Education (Singapore) Pte. Ltd., 1995.<br>[2] F. S. Hill, Jr., <i>Computer Graphics Using OpenGL</i> , 2e, Prentice-Hall of India Private Ltd., 2000.<br>[3] D. Shreiner, M. Woo, J. Neider and T. Davis, <i>OpenGL Programming Guide</i> , 4e, Pearson Education (Singapore) Pte. Ltd., 1999. |
| CSE411    | VLSI Design             | 3.00        | [1] L. E. M. Brackenbury, <i>Design of VLSI Systems</i> , McMillan Education Ltd., 1987.<br>[2] J. P. Uyemura, <i>Introduction to VLSI Circuits and Systems</i> , John Wiley & Sons, Inc., 2001.   |
| CSE435    | Basic Multimedia Theory | 3.00        | [1] Z. N. Li and M. S. Drew, <i>Fundamentals of Multimedia</i> , Pearson Education, 2004.  |

### Level – 4, Term – 1

| Course No | Course Title               | Credit Hour | Text Book and Author   |
|-----------|----------------------------|-------------|--|
| CSE401    | Computer Networks          | 3.00        | [1] A. S. Tanenbaum, <i>Computer Networks</i> , 4e, Pearson Education (Singapore) Pte. Ltd., 2002.<br>[2] J. F. Kurose and K. W. Ross, <i>Computer Networking - A Top Down Approach Featuring the Internet</i> , 2e, Pearson Education (Singapore) Pte. Ltd., 2003.                        |
| CSE403    | Digital System Design      | 3.00        | [1] M. Mano, <i>Digital Logic and Computer Design</i> , Prentice-Hall of India Private Limited, 1979.<br>[2] J. P. Hayes, <i>Computer Architecture and Organization</i> , 2e, McGraw-Hill Book Company, 1988.  |
| CSE405    | System Analysis and Design | 3.00        | [1] J. L. Whitten, L. D. Bentley and K. C. Dittman, <i>System Analysis and Design Methods</i> , 6e, Irwin McGraw-Hill, 2004.<br>[2] S. Bennett, S. McRobb and R. Farmer, <i>Object Oriented System Analysis and Design Using UML</i> , 2e, Tata McGraw-Hill Publishing Company Ltd., 2005. |
| CSE407    | Computer Interfacing       | 3.00        | [1] D. V. Hall, <i>Microprocessors and Interfacing Programming and Hardware</i> , 2e, Tata McGraw-Hill Publishing Company Ltd., 1991.<br>[2] B. M. Cook and N. H. White, <i>Computer Peripherals</i> , 3e, Edward Arnold., 1995.   |
| CSE425    | Machine Learning           | 3.00        | [1] T. M. Mitchel, <i>Machine Learning</i> , The McGraw-Hill Companies, Inc., 1997.  |

### Level – 3, Term – 2

| Course No | Course Title                         | Credit Hour | Text Book and Author  |
|-----------|--------------------------------------|-------------|---|
| CSE313    | Operating System                     | 3.00        | [1] A. S. Tanenbaum, <i>Modern Operating Systems</i> , 2e, Prentice-Hall of India Private Ltd., 2001.<br>[2] M. J. Bach, <i>The Design of the Unix Operating System</i> , Prentice-Hall of India., 1986.<br>[3] B. W. Kernighan and R. Pike, <i>The UNIX Programming Environment</i> , Pearson Education (Singapore) Pte. Ltd., 1984.<br>[4] S. Prata, <i>Advanced UNIX - A Programmer's Guide</i> , BPB Publications., 1985. |
| CSE315    | Microprocessors and Microcontrollers | 3.00        | [1] B. B. Brey, <i>The Intel Microprocessors - Architecture, Programming, and Interfacing</i> , 6e, Pearson Education (Singapore) Pte. Ltd., 2003.<br>[2] M. Rafiquzzaman, <i>Microprocessors and Microcomputer-Based System Design</i> , 2e, CRC Press., 1995.   |
| CSE317    | Artificial Intelligence              | 3.00        | [1] S. J. Russell and P. Norvig, <i>Artificial Intelligence - A Modern Approach</i> , 2e, Pearson Education (Singapore) Pte. Ltd., 2002.<br>[2] L. Sterling, E. Shapiro, <i>The Art of Prolog - Advanced Programming Techniques</i> , 2e, Prentice-Hall of India Private Ltd., 1994.<br>[3] C. Townsend, <i>Introduction to Turbo Prolog</i> , BPB Publications., 1987.   |
| CSE319    | Pattern Recognition                  | 3.00        | [1] S. Theodoridis and K. Koutroumbas, <i>Pattern Recognition</i> , 2e, Elsevier Academic Press., 2003.   |
| CSE321    | Communication Engineering            | 3.00        | [1] W. Stallng, <i>Data and Computer Communication</i> , 7e, Prentice-Hall of India Private Ltd., 2003.   |

### Level – 3, Term – 1

| Course No | Course Title                               | Credit Hour | Text Book and Author  |
|-----------|--|-------------|---|
| CSE301    | Mathematical Analysis for Computer Science | 3.00        | [1] S. M. Ross, <i>Introduction to Probability Models</i> , 8e, Academic Press, An Imprint of Elsevier., 2002.<br>[2] R. L. Graham, D. E. Knuth and O. Patashnik, <i>Concrete Mathematics, A Foundation for Computer Science</i> , 2e, Addison-Wesley, An Imprint of Pearson Education, Inc., 1994. |
| CSE303    | Database                                   | 3.00        | [1] A. Silberschatz, H. F. Korth and S. Sudarshan, <i>Database System Concepts</i> , 4e, McGraw-Hill Book Company, 2001.<br>[2] K. Loney, G. Koch and the Experts at TUSC, <i>Oracle 9i: The Complete Reference</i> , Tata McGraw-Hill Publishing Company Ltd., 2002.                               |

| Course No | Course Title          | Credit Hour | Text Book and Author   |
|-----------|-----------------------|-------------|--|
| CSE305    | Computer Architecture | 3.00        | [1] D. A. Patterson and J. L. Hennessy, <i>Computer Organization and Design, the Hardware/Software Interface</i> , 3e, Morgan Kaufmann Publishers, An Imprint of Elsevier., 2007.                                    |
| CSE307    | Software Engineering  | 3.00        | [1] R. S. Pressman, <i>Software Engineering, A Practitioner's Approach</i> , 6e, McGraw-Hill Book Company., 2004.<br>[2] C. Larman, <i>Applying UML and Patterns</i> , 2e, Pearson Education (Singapore) Ltd., 2001. |
| CSE309    | Compiler              | 3.00        | [1] A. V. Aho, R. Sethi and J. D. Ullman, <i>Compilers: Principles, Techniques and Tools</i> , Addison-Wesley, An Imprint of Pearson Education., 1986.   |
| CSE311    | Data Communication    | 3.00        | [1] S. Haykin, <i>Communication Systems</i> , 4e, John Wiley & Sons, Inc., 2000.   |

## Level – 2, Term – 2

| Course No | Course Title                           | Credit Hour | Text Book and Author   |
|-----------|--|-------------|--|
| CSE207    | Algorithms                             | 3.00        | [1] T. H. Cormen, C. E. Leiserson, R. L. Rivest and C. Stein, <i>Introduction to Algorithms</i> , 2e, Prentice-Hall of India Private Ltd., 2001.<br>[2] E. Horowitz, S. Sahni and S. Rajasekaran, <i>Fundamentals of Computer Algorithms</i> , Galgotia Publications Private Ltd., 2007. |
| CSE209    | Digital Electronics & Pulse Techniques | 3.00        | [1] H. Taub and D. Schilling, <i>Digital Integrated Electronics</i> , McGraw-Hill Book Company, 1977.<br>[2] J. Millman and H. Taub, <i>Pulse, Digital and Switching Waveforms</i> , Tata McGraw, 1965.  |
| CSE211    | Theory of Computation                  | 2.00        | [1] J. E. Hopcroft, R. Motwani and J. D. Ullman, <i>Introduction to Automata Theory, Languages, and Computation</i> , Pearson Education (Singapore) Pte. Ltd., 1979.   |
| CSE214    | Assembly Language Programming          | 1.50        | [1] Y. Yu and C. Marut, <i>Assembly Language Programming and Organization of IBM PC</i> , Mitchell McGraw-Hill., 1992.<br>[2] K. R. Irvine, <i>Assembly Language for Intel-Based Computers</i> , 3e, Prentice-Hall international., 1998.   |

## Level – 2, Term – 1

| Course No | Course Title         | Credit Hour | Text Book and Author   |
|-----------|----------------------|-------------|--|
| CSE201    | Numerical Methods    | 3.00        | [1] S. C. Chapra and R. P. Canale, <i>Numerical Methods for Engineers</i> , 4e, Tata McGraw-Hill Publishing Company Ltd. Oxford & IBH Publishing Co. Pvt. Ltd., 2001.<br>[2] J. B. Scarborough, <i>Numerical Mathematical Analysis</i> , 1e., 1966.<br>[3] S. B. Rao and C. K. Shantha, <i>Numerical Methods - with Programs in Basic, Fortran and Pascal</i> , Universities Press (India) Ltd., 1993. |
| CSE203    | Data Structures      | 3.00        | [1] E. M. Reingold and W. J. Hansen, <i>Data Structures</i> , Little, Brown & Company Ltd., 1983.<br>[2] M. T. Goodrich and R. Tamassia, <i>Data Structures and Algorithms in Java</i> , 2e, John Wiley & Sons, Inc., 2000   |
| CSE205    | Digital Logic Design | 3.00        | [1] M. Mano, <i>Digital Design</i> , 3e, Pearson Education (Singapore) Pte. Ltd., 2001.<br>[2] T. L. Floyd, <i>Digital Fundamentals</i> , 8 Pearson Education, Inc., 2002.<br>[3] E. L. Johnson and M. A. Karim, <i>Digital Design – A Pragmatic Approach</i> , PWS-KENT Publishing Company. 1987.   |

## Level – 1, Term – 2

| Course No | Course Title                         | Credit Hour | Text Book and Author   |
|-----------|--------------------------------------|-------------|--|
| CSE103    | Discrete Mathematics                 | 3.00        | [1] D. F. Stanat and D. F. McAllister, <i>Discrete Mathematics in Computer Science</i> , 1e, Prentice-Hall International, Inc., 1977.<br>[2] K. H. Rosen, <i>Discrete Mathematics and Its Application</i> , 4e, WCB McGraw-Hill., 1998.  |
| CSE105    | Object Oriented Programming Language | 2.00        | [1] H. Schildt, <i>Teach Yourself C++</i> , 3e, Tata McGraw-Hill Publishing Company Ltd., 1997.<br>[2] H. Schildt, <i>Java 2: The Complete Reference</i> , 5e, Tata McGraw-Hill Publishing Company Ltd., 2002.<br>[3] H.M. Deitel and P.J. Deitel, <i>Java How to Program</i> , 3e, Pearson Education, Inc., 1999. |

## Level – 1, Term – 1

| Course No | Course Title            | Credit Hour | Text Book and Author   |
|-----------|-------------------------|-------------|--|
| CSE101    | Programming Languages-I | 3.00        | [1] B. W. Kernighan and D. M. Ritchie, <i>The C Programming Language</i> , 2e, Prentice-Hall of India Private Ltd., 1988.<br>[2] H. Schildt, <i>Teach Yourself C</i> , 3e, Osborne McGraw-Hill., 1997. |

## Mathematical Courses

| Course No | Course Title   | Credit Hour | Text Book and Author  |
|-----------|--|-------------|---|
| MATH141   | Mathematics 1: Diff. Calculus & Co-ordinate Geometry       | 3.00        | [1] Ashraf, <i>Differential Calculus</i> .<br>[2] Rahman, <i>Co-ordinate Geometry</i>   |
| MATH143   | Mathematics 2: Integral Cal. & Ordinary Partial Diff. Eqn. | 4.00        | [1] Hazra, <i>Integral Calculus</i><br>[2] Piazzio, <i>Differential Equation</i>  |
| MATH243   | Mathematics IV: Matrices, Vec. And Fourier Analysis        | 3.00        | [1] Hazra, <i>Matrix</i><br>[2] Hazra, <i>Vector</i>  |
| MATH241   | Complex Variable, Laplace trans & Stat.                    | 4.00        | [1] Churchill, <i>Operational Mathematics</i> , 3e, McGraw-Hill Companies, 1971.<br>[2] Churchill, <i>Complex Variables</i><br>[3] Gupta, <i>Statistics</i> |

## Other Courses

| Course No | Course Title                                   | Credit Hour | Text Book and Author         |
|-----------|--|-------------|------------------------------|
| EEE163    | Introduction to Electrical Engineering         | 3.00        | Cochran, Boylestead, Johnson |
| EEE263    | Electrical Devices and Circuits                | 3.00        | Theraza, Boylestead, Millman |
| EEE269    | Electrical Drives & Instrumentation            | 3.00        | Misc                         |
| ME160     | Mechanical Engineering Drawing - I             | 1.50        | Misc                         |
| ME165     | Basic Mechanical Engineering                   | 3.00        | Vasandani, Khurmi            |
| PHY109    | Heat & Therm. Struc. Of Mat. Waves & Osc.      | 4.00        | Resnick and Halliday         |
| CHEM101   | Chemistry - I: Inorganic Quantitative Analysis | 3.00        | Voegl<br>Misc                |
| IPE493    | Industrial Management                          | 3.00        | Misc                         |
| HUM175    | English  | 3.00        | Misc                         |
| HUM275    | Economics                                      | 3.00        | Misc                         |
| HUM371    | Financial and Managerial Accounting            | 3.00        | Gupta                        |
| HUM211    | Sociology                                      | 3.00        | Misc                         |