

PES UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MASTERS OF TECHNOLOGY

I SEMESTER (2020– 2022 BATCH)

| Sl. No. | Course Code | Course Title | Hours / week | | | | Credits | Tools/Languages | Course Type |
|-----------------------|-------------|--|--------------|----------|----------|-----------|-----------|---|-------------|
| | | | L | T | P | S | | | |
| 1. | UE20CS501 | Computer Systems for Programmers | 4 | 0 | 0 | 4 | 4 | C/C++/ Python/java based IDEs and Instruction set Simulator for pipelined multicore processors. | CC |
| 2. | UE20CS502 | Advanced Data Structures | 4 | 0 | 0 | 4 | 4 | C,C++,Python,Java. | CC |
| 3. | UE20CS503 | Fundamentals of Scalable Computing | 4 | 0 | 0 | 4 | 4 | AWS, PostMan, Flask, Docker, Hadoop. | CC |
| 4. | UE20CS504 | Stochastic models and Machine Learning | 4 | 0 | 0 | 4 | 4 | Python 3.5 or above, Tensor flow 2.0, using Keras API. | CC |
| 5. | UE20CS505 | Cyber Security Essentials | 4 | 0 | 0 | 4 | 4 | Nmap, Wireshark, Claynet. | CC |
| 6. | UE20CS506A | Special Topic - I | 2 | 0 | 0 | 2 | 2 | | ST |
| Total | | | 22 | 0 | 0 | 22 | 22 | | |
| Pre-requisites | | | Nil | | | | | | |

SPECIALIZATION FOR CORE SUBJECTS

| Sl. No. | SPECIALIZATION | SUBJECT | SUBJECT CODE |
|---------|----------------------|-----------|--|
| 1. | Cloud Computing | UE20CS503 | Cloud Computing. |
| 2. | Machine Intelligence | UE20CS504 | Stochastic models and Machine Learning |
| 3. | Cyber Security | UE20CS505 | Cyber Security Essentials |

M. Tech II SEMESTER COMPUTER SCIENCE & ENGINEERING:(BATCH : 2020-2022)

| Sl. No. | Course Code | Course Title | Hours / week | | | | Credits | Tools/Languages | Course Type |
|-----------------------|-------------|---|--------------|----------|----------|-----------|-----------|---|-------------|
| | | | L | T | P | S | | | |
| 1. | UE20CS551 | Topics in Advanced Algorithms * | 4 | 0 | 0 | 4 | 4 | C,C++ | CC |
| 2. | UE20CS552 | Distributed Computing | 4 | 0 | 0 | 4 | 4 | Wireshark/ C Compiler with Network Libraries | CC |
| 3. | UE20CS56X | Elective –I | 4 | 0 | 0 | 4 | 4 | | EC |
| 4. | UE20CS57X | Elective –II | 4 | 0 | 0 | 4 | 4 | | EC |
| 5. | UE20CS58X | Elective –III | 4 | 0 | 0 | 4 | 4 | | EC |
| 6. | UE20CS553A | Special Topics - II | 2 | 0 | 0 | 2 | 2 | | ST |
| Total | | | 22 | 0 | 0 | 22 | 22 | | - |
| Elective – I | | | | | | | | | |
| 1. | UE20CS561 | Million Way Parallelism | 4 | 0 | 0 | 4 | 4 | OpenMP CUDA | EC |
| 2. | UE20CS562 | Speech and Natural Language Processing | 4 | 0 | 0 | 4 | 4 | CoreNLP,NLTK,TextBlob,Gensim,SpaCy,PyTorch, OpenNLK | EC |
| 3. | UE20CS563 | Topics in Computer and Network Security | 4 | 0 | 0 | 4 | 4 | Wireshark, Python,Seed Ubuntu 16 version, Netwox, C, Scapy | EC |
| Elective – II | | | | | | | | | |
| 1. | UE20CS571 | Advanced Cloud Computing and Security | 4 | 0 | 0 | 4 | 4 | Google Oauth, Gvisor/Firecracker-Secure Container.Nginx Dos Protection. | EC |
| 2. | UE20CS572 | Virtual Reality and its applications | 4 | 0 | 0 | 4 | 4 | Unity3D, React VR. | EC |
| 3. | UE20CS573 | Software Security% | 4 | 0 | 0 | 4 | 4 | Claynet and Wireshark | EC |
| Elective – III | | | | | | | | | |
| 1. | UE20CS581 | Advanced Big Data Analytics | 4 | 0 | 0 | 4 | 4 | Apache, Hadoop Hive, Spark, Solr, R, Google Cloud Platform, IBM Watson. | EC |
| 2. | UE20CS582 | Deep Learning Theory and Practices | 4 | 0 | 0 | 4 | 4 | Tensorflow 1.15, Keras 2.3.1, Python 3.7 | EC |
| 3 | UE20CS583 | Cryptography | 4 | 0 | 0 | 4 | 4 | Seed Virtual Machine Environment | EC |
| Pre-requisites | | *UE20CS502, % UE20CS505, | | | | | | | |

| ELECTIVES TO BE OPTED FOR SPECIALIZATION | | | | |
|--|----------------------|--------------|---------------|----------------|
| Sl. No. | SPECIALIZATION | ELECTIVE – I | ELECTIVE – II | ELECTIVE – III |
| 1. | Cloud Computing | UE20CS561 | UE20CS571 | UE20CS581 |
| 2. | Machine Intelligence | UE20CS562 | UE20CS572 | UE20CS582 |
| 3. | Cyber Security | UE20CS563 | UE20CS573 | UE20CS583 |

M. Tech. III SEMESTER COMPUTER SCIENCE & ENGINEERING(BATCH : 2019-2021)

| Sl. No. | Course Code | Course Title | Hours / week | | | | Credits | Course Type |
|----------------|--------------------|----------------------|---------------------|----------|-----------|----------|----------------|--------------------|
| | | | L | T | P | S | | |
| 1. | UE19CS601 | Project Work Phase I | 0 | 0 | 20 | 0 | 10 | PW |
| 2. | UE19CS602 | Special Topic-III | 2 | 0 | 0 | 0 | 2 | ST |
| Total | | | 2 | 0 | 20 | 0 | 12 | - |

M. Tech. IV SEMESTER COMPUTER SCIENCE & ENGINEERING(BATCH : 2019-2021)

| Sl. No. | Course Code | Course Title | Hours / week | | | | Credits | Course Type |
|----------------|--------------------|-----------------------|---------------------|----------|-----------|----------|----------------|--------------------|
| | | | L | T | P | S | | |
| 1. | UE19CS651 | Project Work Phase II | 0 | 0 | 20 | 0 | 10 | PW |
| 2. | UE19CS652 | Special Topic-IV | 2 | 0 | 0 | 0 | 2 | ST |
| Total | | | 2 | 0 | 20 | 0 | 12 | - |