

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MOOC FOR MINORS AND HONOURS - 2020 SCHEME BTECH CSE

MOOC FOR MINORS:

BASKET I SOFTWARE ENGINEERING

| Sl. No. | Course | Course Code | Course Type | Duration | Offering Platform | B.Tech Regulation | Institution Offering the Course | Remarks |
|---------|---|-------------|-------------|----------|-------------------|---------------------------|---------------------------------|--|
| 1 | Programming in Java | CSMC00W | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing <i>CS0M20A OBJECT ORIENTED PROGRAMMING</i> offered in <i>Semester 3</i> |
| 2 | Software Engineering | CSMC00Z | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing <i>CS0M30A CONCEPTS IN SOFTWARE ENGINEERING</i> offered in <i>Semester 5</i> |
| 3 | Software Testing | CSMC01A | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Bangalore | Replacing <i>CS0M30A INTRODUCTION TO SOFTWARE TESTING</i> offered in <i>Semester 6</i> |
| 4 | Object Oriented System Development using UML, Java and Patterns | CSMC00T | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | |

BASKET II MACHINE LEARNING

| Sl. No. | Course | Course Code | Course Type | Duration | Offering Platform | B.Tech Regulation | Institution Offering the Course | Remarks |
|---------|---|-------------|-------------|----------|-------------------|------------------------|---------------------------------|---|
| 1 | Essential Mathematics for Machine Learning | CSMC00I | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Roorkee | Replacing the course CS0M20E MATHEMATICS FOR MACHINE LEARNING offered in <i>Semester 4</i> . |
| 2 | Linear Algebra in AI and ML | CSMC00P | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing the course CS0M20E MATHEMATICS FOR MACHINE LEARNING offered in <i>Semester 4</i> . |
| 3 | Machine Learning for Engineering and Science Applications | CSMC00R | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Madras | Replacing CS0M30B CONCEPTS IN MACHINE LEARNING offered in <i>Semester 5</i> |
| 4 | Introduction to Machine Learning | CSMC00N | MOOC | 8 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing CS0M30B CONCEPTS IN MACHINE LEARNING offered in <i>Semester 5</i> |
| 5 | Introduction to Machine Learning | CSMC00O | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Madras | Replacing CS0M30B CONCEPTS IN MACHINE LEARNING offered in <i>Semester 5</i> |
| 6 | Deep Learning | CSMC00G | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing CS0M30E CONCEPTS IN DEEP LEARNING offered in <i>Semester 6</i> |
| 7 | Deep Learning | CSMC00H | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Ropar | Replacing CS0M30E CONCEPTS IN DEEP LEARNING offered in <i>Semester 6</i> |

BASKET III
NETWORKING

| Sl. No. | Course | Course Code | Course Type | Duration | Offering Platform | B.Tech Regulation | Institution Offering the Course | Remarks |
|---------|--|-------------|-------------|----------|-------------------|------------------------|---------------------------------|--|
| 1 | Introduction to Computer Networks and Internet protocols | CSMC00K | MOOC | 15 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | Gujarat University Ahmedabad | Replacing CS0M20F INTRODUCTION TO COMPUTER NETWORKS offered in <i>Semester 4</i> |
| 2 | Advanced Computer Networks | CSMC00B | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Gandhinagar | Replacing CS0M20F INTRODUCTION TO COMPUTER NETWORKS offered in <i>Semester 4</i> |
| 3 | Cloud Computing | CSMC00C | MOOC | 12 weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing CS0M30C CLIENT SERVER SYSTEMS offered in <i>Semester 5</i> |
| 4 | Computer Networks and Internet Protocol | CSMC00D | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | |
| 5 | Introduction to Internet of Things | CSMC00M | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing CS0M30F WIRELESS NETWORKS AND IOT APPLICATIONS offered in <i>Semester 6</i> |

MOOC FOR HONOURS:**BASKET I SECURITY IN COMPUTING**

| Sl. No. | Course | Course Code | Course Type | Duration | Offering Platform | B.Tech Regulation | Institution Offering the Course | Remarks |
|---------|---|-------------|-------------|----------|-------------------|------------------------|---------------------------------------|--|
| 1 | A basic course in Number Theory | CSMC00A | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Bombay | Replacing <i>CS1H20A NUMBER THEORY</i> offered in <i>Semester 4</i> |
| 2 | Cryptography and Network Security | CSMC00E | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing <i>CS1H30A CRYPTOGRAPHIC ALGORITHMS</i> offered in <i>Semester 5</i> |
| 3 | Cyber Security and Privacy | CSMC00F | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Madras | Replacing <i>CS1H30D NETWORK SECURITY</i> offered in <i>Semester 6</i> |
| 4 | Introduction to Cyber Security | CSMC00L | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | Uttarakhand Open University, Haldwani | Replacing <i>CS1H30D NETWORK SECURITY</i> offered in <i>Semester 6</i> |
| 5 | Privacy and Security in Online Social Media | CSMC00V | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIIT Hyderabad | |

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| 6 | Ethical Hacking | CSMC00J | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | |
| 7 | Secure Computation Part 1 | CSMC00Y | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Bangalore | Replacing CSIH40A CYBER FORENSICS offered in <i>Semester 7</i> |

BASKET II MACHINE LEARNING

| Sl. No. | Course | Course Code | Course Type | Duration | Offering Platform | B.Tech Regulation | Institution Offering the Course | Remarks |
|---------|--|-------------|-------------|----------|-------------------|---------------------------|---------------------------------|---|
| 1 | Essential Mathematics for Machine Learning | CSMC00I | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Roorkee | Replacing CSIH20B COMPUTATIONAL FUNDAMENTALS FOR MACHINE LEARNING offered in <i>Semester 4</i> |
| 2 | Deep Learning | CSMC00G | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | Replacing CSIH30B NEURAL NETWORKS AND DEEP LEARNING offered in <i>Semester 5</i> |
| 3 | Deep Learning | CSMC00H | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Ropar | Replacing CSIH30B NEURAL NETWORKS AND DEEP LEARNING offered in <i>Semester 5</i> |

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| 4 | Machine Learning and Deep Learning - Fundamentals and Applications | CSMC00Q | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Guwahati | Replacing <i>CS1H30E ADVANCED TOPICS IN MACHINE LEARNING</i> offered in <i>Semester 6</i> |
| 5 | Optimization for machine learning: Theory and Implementation | CSMC00U | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Kharagpur | |
| 6 | Reinforcement Learning | CSMC00X | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | IIT Madras | Replacing <i>CS1H40B REINFORCEMENT LEARNING</i> offered in <i>Semester 7</i> |

BASKET III FORMAL METHODS

| Sl. No. | Course | Course Code | Course Type | Duration | Offering Platform | B.Tech Regulation | Institution Offering the Course | Remarks |
|---------|----------------|-------------|-------------|----------|-------------------|---------------------------|--------------------------------------|---|
| 1 | Model Checking | CSMC00S | MOOC | 12 Weeks | NPTEL/ SWAYAM | B.Tech Regulation 2020 | Chennai Mathematical Institute | Replacing <i>CS1H30C PRINCIPLES OF MODEL OF CHECKING</i> offered in <i>Semester 5</i> |