OFFICE OF THE REGISTRAR
MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019/2708 **6th May 2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Electronics and Communication Engineering

The Board of Studies for the Department of Electronics and Communication Engineering is reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1) Prof. (Dr.) Tanveer Ahmed Kazi, Dean of Engineering - Chairman
2) Prof. (Dr.) Archana Agarwal, - External Member
3) Mr. JitendraVaswani, Assistant Professor - Internal Member
4) Mr. Sayed Arif Ali, Assistant Professor - Internal Member
5) Mr. Gaurav Sharma, Head & Assistant Professor - Convener

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as a special invitee if it is considered his association will contribute to the task of the meeting with the approval of the President/Vice-Chancellor.

The Convener of the Meeting is advised to hold the meeting of the BOS seeking the convenience of the Chairman in the first week of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.

The External Members shall be entitled to TA/DA and sitting fees as per the norms prescribed by the Mewar University.

Registrar
Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

- PS to Hon'ble Chairperson (for kind information)
- PS to Hon'ble President (for kind information)
- PS to Hon'ble Pro-President (for kind information)
- All concerned Deans/Directors/HoD's (for kind information & necessary action)
- Accounts/Examination/Library/Store/Warden/Security/IT Head.
- Coordinator, IQAC Cell.
- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

DATE: 06/06/2019

Minutes of Meeting of Board of Studies

Minutes of the BOS of the Department of Electronics and Communication Engineering meeting held on 06-06-2019 at 11.30 AM.

The following members were present: **(Annexure 1)**

1) Prof. (Dr.) Tanveer Ahmed Kazi, Dean of Engineering - Chairman
2) Prof. (Dr.) Archana Agarwal, - External Member
3) Mr. JitendraVaswani, Assistant Professor - Internal Member
4) Mr. Sayed Arif Ali, Assistant Professor - Internal Member
5) Mr. Gaurav Sharma, Head & Assistant Professor - Convener

Mr. Gaurav Sharma, Head, Electronics & Communication Engineering, warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 15-06-2018

Resolution: Minutes of the previous BOS of the Electronics & Communication Engineering department held on 15-06-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Mr. Gaurav Sharma, (Head, Electronics & Communication Engineering) presented a departmental activity report mentioning all the activities conducted related to curricular development, research and development, faculty development, and Industrial collaboration.

Agenda 3: Review of Existing Programmes/Courses

Resolution: The Committee reviewed the scheme and syllabus of the B. Tech (ECE) and M. Tech (DC) programme and approved the scheme and syllabus for the session 2019-20. **(Annexure 2)**

Agenda 4: Introduction of New Programme/Course

Resolution:

1. As per the recommendation of members of the BOS committee, it is decided that M. Tech (VLSI) a new programme will be introduced in the upcoming session 2019-20. The scheme and syllabus are attached here. **(Annexure 3)**

06/06/19

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

2. The BOS Committee approved the syllabus of two new courses in M. Tech. (Digital Communication) for PG students from session 2019-20 are mentioned below. **(Annexure 4)**

- Digital Communication System
- Antenna Theory And Techniques

3. The BOS Committee members also approved the syllabus of five new courses in B. Tech. (Electronics & Communication Engineering) for UG students from session 2019-20 are mentioned below. **(Annexure 5)**

- Mixed Signal Design
- Wireless Sensor Networks
- High-Speed Electronics
- Nanoelectronics
- CMOS Design

Agenda 5: Any other suggestions by BOS Committee

Resolution: Suggestion regarding subject scheme and syllabus-

1. The importance and possibilities of departmental research activities were discussed and suggestions were given for the up-gradation of the syllabus.
2. In the future, the courses and programs should be designed and developed according to today's demand so that it will be a good opportunity to attract students and industries also.
3. New programs should be introduced e.g. PG Diploma in IoT and B.Sc. in Electronic Science as per the industrial requirement for the next session 2019-2020.

Agenda 6: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

06/06/19

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

DATE: 06/06/2019

Annexure 1: Attendance Sheet

S.NO.	Name& Designation	Designation in BOS	Signature
1	Prof. (Dr.)Tanveer Ahmed Kazi, Dean Engg.	Chairman	6/6/2019
2	Prof (Dr.) Archana Agarwal	External Member	6/6/2019
3	Mr. JitendraVaswani, Assistant Professor, Electronics & Comm. Engg.	Internal Member	6/6/19
4	Mr. SayedArif Ali, Assistant Professor, Electronics & Comm. Engg.	Internal Member	Syed 6/6/2019
5	Mr. Gaurav Sharma, Head, Electronics & Comm. Engg.	Convener	6/6/2019

DIGITAL COMMUNICATION SYSTEM

Characterization of communication signals, signal space representation, equalisation, matched filtering, binary PSK, QPSK, FSK, QAM & M-Ary modulation techniques and their representation. Coherent & non coherent detection, carrier & symbol synchronization, bits vs symbol error probability, bandwidth efficiency, Spread spectrum modulation: Pseudo noise sequences, DS & FH spread spectrum.

BOOKS

- Analog And Digital Communication,Hwei Hsu, Debjani Mitra , ,Tmh
- Digital Commnunication,Amitabha Bhattacharya, ,Tmh
- Schaums Outline And Digital Communication,Hwei Hsu, ,Tmh
- Taub's Principles Of Communication Systems,Taub & Schilling, ,Tmh
- Electronic Communication Systems,Kennedy, ,Tmh
- Analog And Digital Communication,Sudakshina Kundu, ,Pearson
- Digital Communication,Sklar & Ray, ,Pearson

6/6/2019

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ANTENNA THEORY AND TECHNIQUES

Review of the theory of electromagnetic radiation. Introduction to various antenna types wire, loop and helical antennas, analysis using assumed current distribution.
Aperture antennas: slot, wave guide, horn, and reflector antennas. Analysis using field equivalence principle and Fourier transform methods. Linear arrays. Traveling wave & broadband antennas. Antenna measurements. Printed antennas: Feeding methods, transmission line & cavity models, analysis and design of rectangular & circular microstrip antenna. Arrays: pattern synthesis, planar arrays, phased arrays. Active antennas and arrays.
Paraboloidal reflector antenna, different feed configurations, shaped beam antennas, lens antenna. Antennas for biomedical applications. Smart antennas for mobile communications. Antenna for infrared detectors.

BOOKS

- Antennas,John Kraus, Ronald Marhefka,Tmh
- Electromagnetic Waves And Radiating Systems,E.C. Jordan And K.G. Balmain, ,Phi
- Antenna Theory: Analysis And Design,Constantine A. Balanis , John Wiley & Sons
- Antenna Theory & Design,Robert S. Elliott, John Wiley & Sons
- Antennas And Wave Propagation,G. S. N. Raju , Pearson

6/6/2019

MEWAR UNIVERSITY
Mewar University
Knowledge to Wisdom
Chittorgarh - 312901 (Raj.)

Mixed Signal Design (Syllabus)

Unit1- Analog and discrete-time signal processing, introduction to sampling theory;Analog continuous
time filters: passive and active filters; Basics of analog discrete-time filters and Z-transform.

Unit2- Switched-capacitor filters- Nonidealities in switched-capacitor filters; Switched-capacitor filter
architectures; Switched-capacitor filter applications.
Basics of data converters; Successive approximation ADCs, Dual slope ADCs,Flash ADCs, Pipeline ADCs, Hybrid ADC structures, High-resolution ADCs, DACs.

Unit3. Mixed-signal layout, Interconnects and data transmission; Voltage-mode signalingand data
transmission; Current-mode signaling and data transmission.

Unit4. Introduction to frequency synthesizers and synchronization; Basics of PLL,Analog PLLs; Digital
PLLs; DLLs.

6/6/2019

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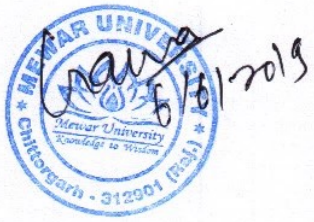
Wireless Sensor Networks (Syllabus)

Unit1. Introduction to Sensor Networks, unique constraints and challenges, Advantage of Sensor
Networks, Applications of Sensor Networks, Types of wireless sensor networks

Unit2. Mobile Ad-hocNetworks (MANETs) and Wireless Sensor Networks, Enabling technologies for
Wireless Sensor Networks. Issues and challenges in wireless sensor networks

Unit3- Routing protocols, MAC protocols: Classification of MAC Protocols, S-MAC Protocol, B-MAC
protocol, IEEE 802.15.4 standard and ZigBee,.

Unit4. Dissemination protocol for large sensor network. Data dissemination, data gathering, and data
fusion; Quality of a sensor network; Real-time traffic support and security protocols.



High Speed Electronics (Syllabus)

Unit1- Transmission line theory (basics) crosstalk and nonideal effects; signal integrity: impact of
packages, vias, traces, connectors; non-ideal return current paths, high frequency powerdelivery,
methodologies for design of high speed buses; radiated emissions and minimizing system noise;
Noise Analysis: Sources, Noise Figure, Gain compression, Harmonic distortion,
Intermodulation,Cross-modulation, Dynamic range
Unit2- Devices: Passive and active, Lumped passive devices (models), Active (models,lowvs highfrequency) RF Amplifier Design, Stability, Low Noise Amplifiers, Broadband Amplifiers (and Distributed)
Power Amplifiers, Class A, B, AB and C, D E Integrated circuit realizations, Cross-over distortion Efficiency RF power output stages
Unit3- Mixers –UpconversionDownconversion, Conversion gain and spurious response.Oscillators
Principles.PLL Transceiver architectures
Unit4- Printed Circuit BoardAnatomy, CAD tools for PCB design, Standard fabrication, Microvia
Boards. Board Assembly: Surface Mount Technology, Through Hole Technology, Process Control and Design challenges.

6/6/2019

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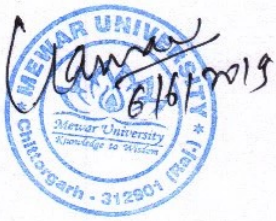
Nano electronics (Syllabus)

Introduction to nanotechnology, mesostructures,Basics of Quantum Mechanics: Schrodinger equation, Density of States. Particle in a box Concepts, Degeneracy.Band Theory of Solids. Kronig-Penny Model. Brillouin Zones.

Shrink-down approaches: Introduction, CMOS Scaling, The nanoscale MOSFET, Finfets, Vertical MOSFETs, limits to scaling, system integration limits (interconnect issues etc.), Resonant Tunneling Diode, Coulomb dots, Quantum blockade, Single electron

transistors,Carbon nanotube electronics, Bandstructure and transport, devices, applications, 2D semiconductors and electronic devices, Graphene, atomistic simulation



CMOS Design (Syllabus)

Review of MOS transistor models, Non-ideal behavior of the MOS Transistor.Transistor as a switch. Inverter characteristics, Integrated Circuit Layout: Design Rules, Parasitics. Delay: RC Delay model, linear delay model, logical path efforts. Power, interconnect and Robustness in CMOS circuit layout. Combinational Circuit Design: CMOS logic families including static, dynamic and dual rail logic. Sequential Circuit Design: Static circuits. Design of latches and Flip-flops.

6/6/2019

OFFICE OF THE REGISTRAR

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019/1953-A **15th January 2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Computer Applications

The Board of Studies for the Department of Computer Applicationsis reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1) Dr. Tanveer Ahmad Kazi, Dean, Faculty of Computer Science & System Studies - Chairman

2) Dr. DilendraHiran, Director, Pacific College of Computer Application Pacific University, Udaipur, Rajasthan - External Member

3) Mr. Devraj Singh Chouhan, IT Dept., RSWM Limited, Kanyakheri Unit, Bhilwara - External Member

4) Mr. M. Rashid, Assistant Professor: - Internal Member

5) Mr. Shiv Kumar, Assistant Professor, CSE Dept., - Internal Member

6) Monika Tailor, Dwarkadhish Inst. of Mgmt& Science Paratpara, Bhilwara - Alumni

7) Mr. RavindraVerma, Assistant Professor: - Convener

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.
The Chairman of the Board of Studies may associate any member in the meeting, as a special invitee if it is considered his association will contribute to the task of the meeting with the approval of the President/Vice-Chancellor.
The Convener of the Meeting is advised to hold the meeting of the BOS seeking the convenience of the Chairman in the month of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.
The External Members shall be entitled for TA/DA and sitting fees as per the norms prescribed by Mewar University.

Registrar

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

- PS to Hon'ble Chairperson (for kind information)
- PS to Hon'ble President (for kind information)
- PS to Hon'ble Pro-President (for kind information)
- All concerned Deans/Directors/HoDs (for kind information & necessary action)
- Accounts/Examination/Library/Store/Warden/Security/IT Head.
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- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF COMPUTER APPLICATIONS

DATE: **17.06.2019**

Minutes of Meeting of Board of Studies

The Board of Studies Meeting of the Department of Computer Application was held on 17th June 2019 in Room No. 135 at 11:00 am onwards to approve the new/changes in curriculum and Syllabus revision for session 2019-20.

The following members were present: **(Annexure 1)**

1) Dr. Tanveer Ahmad Kazi, Dean, Faculty of Computer Science & System Studies - Chairman

2) Dr. Dilendra Hiran, Director, Pacific College of Computer Application Pacific University, Udaipur, Rajasthan - External Member

3) Mr. Devraj Singh Chouhan, IT Dept., RSWM Limited, Kanyakheri Unit, Bhilwara- External Member

4) Mr. M. Rashid, Assistant Professor: - Internal Member

5) Mr. Shiv Kumar, Assistant Professor, CSE Dept., - Internal Member

6) Monika Tailor, Dwarkadhish Inst. of Mgmt& Science Paratpara, Bhilwara - Alumni

7) Mr. RavindraVerma, Assistant Professor: - Convener

Mr. RavindraVerma (Head of the Department of Computer Application) warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 12-06-2018

Resolution: Minutes of the previous BOS of the Computer Application Department held on 12-06-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Mr. RavindraVerma (Head, Computer Applications) presented a departmental activity report mentioning all the activities conducted related to curricular development, research and development, faculty development, and Industrial collaboration.

Agenda 3: Revision of Existing Programmes/Courses

Resolution:

- The existing course BCA presented for review for Session 2019-20.
- The existing course BCA-MCA (Integrated) is presented for review for Session 2019-20.
- The existing course MCA presented for review for Session 2019-20.

17/6/19

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Agenda 4: Introduction of New Programmes/Courses

Resolution:

1. Suggestionsreceived from previous BOS committee members, three new courses will be introduced for the upcoming session 2019-20 for BCA students. The courses are mentioned below **(Annexure 2)**
    - Cyber Security
    - Business Ethics and Corporate Governance
    - Programming using MATLAB
2. Suggestionsreceived from previous BOS committee members, three new courses will be introduced for the upcoming session 2019-20 for MCA students. The courses are mentioned below **(Annexure 3)**
    - Big Data Analytics
    - Cloud Computing
    - Deep Learning
3. Suggestionsreceived from previous BOS committee members, three new courses will be introduced for the upcoming session 2019-20 for BCA-MCA students. The courses are mentioned below **(Annexure 4)**
    - Internet Security
    - Business Ethics and Corporate Governance
    - Programming using MATLAB

Agenda 5: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the revised syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

17/6/19

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF COMPUTER APPLICATIONS

DATE: **17.06.20**

Annexure 1: Attendance Sheet

S.NO.	Name & Designation	Designation in BOS	Signature
1	Dr. Tanveer Ahmad Kazi, Computer Science & System Studies	Chairman	17.06.2019
2	Dr. Dilendra Hiran, Director, Pacific University, Udaipur, Rajasthan	External Member	12.6.2019
3	Mr. Devraj Singh Chouhan, IT Dept., RSWM Limited, Kanyakheri Unit, Bhilwara	External Member	
4	Mr. M. Rashid, Assistant Professor	Internal Member	
5	Mr. Shiv Kumar, Assistant Professor, CSE Dept	Internal Member	12/06/20
6	Monika Tailor, Dwarkadhish inst. of mang and Science Paratpara, Bhilwara	Alumni	
7	Mr. Ravindra Verma, Assistant Professor	Convener	17/06/19
		Special Invitee (if any)	

CYBER SECURITY

UNIT -I

Introduction to Cyber Security: Basic Cyber Security Concepts, layers of security, Vulnerability, threat, Harmful acts, Internet Governance – Challenges and Constraints, Computer Criminals, CIA Triad, Assets and Threat, motive of attackers, active attacks, passive attacks, Software attacks, hardware attacks, Cyber Threats-Cyber Warfare, Cyber Crime, Cyber terrorism, Cyber Espionage, etc., Comprehensive Cyber Security Policy.

UNIT - II

Cyberspace and the Law & Cyber Forensics: Introduction, Cyber Security Regulations, Roles of International Law. The INDIAN Cyberspace, National Cyber Security Policy. Introduction, Historical background of Cyber forensics, Digital Forensics Science, The Need for Computer Forensics, Cyber Forensics and Digital evidence, Forensics Analysis of Email, Digital Forensics Lifecycle, Forensics Investigation, Challenges in Computer Forensics

UNIT - III

Cybercrime: Mobile and Wireless Devices: Introduction, Proliferation of Mobile and Wireless Devices, Trends in Mobility, Credit card Frauds in Mobile and Wireless Computing Era, Security Challenges Posed by Mobile Devices, Registry Settings for Mobile Devices, Authentication service Security, Attacks on Mobile/Cell Phones, Organizational security Policies and Measures in Mobile Computing Era, Laptops.

UNIT- IV

Cyber Security: Organizational Implications: Introduction, cost of cybercrimes and IPR issues, web threats for organizations, security and privacy implications, social media marketing: security risks and perils for organizations, social computing and the associated challenges for organizations

UNIT - V

Privacy Issues: Basic Data Privacy Concepts: Fundamental Concepts, Data Privacy Attacks, Datalinking and profiling, privacy policies and their specifications, privacy policy languages, privacy in different domains- medical, financial, etc

Cybercrime: Examples and Mini-Cases

Examples: Official Website of Maharashtra Government Hacked, Indian Banks Lose Millions of Rupees, Parliament Attack, Pune City Police Bust Nigerian Racket, e-mail spoofing instances. Mini-Cases: The Indian Case of online Gambling, An Indian Case of Intellectual Property Crime, Financial Frauds in Cyber Domain.

TEXT BOOKS:

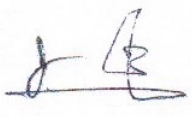
1. Nina Godbole and SunitBelpure, Cyber Security Understanding Cyber Crimes,Computer Forensics and Legal Perspectives,Wiley

2. B.B.Gupta,D.P.Agrawal,HaoxiangWang,ComputerandCyberSecurity:Principles, Algorithm, Applications, and Perspectives, CRC Press, ISBN 9780815371335,2018.

REFERENCES:

1. Cyber Security Essentials, James Graham, Richard Howard and Ryan Otson, CRCPress.

2. Introduction to Cyber Security, Chwan-Hwa(john) Wu,J. David Irwin, CRC Press T&FGroup.



Business Ethics and Corporate Governance

Unit-I

Ethics and Business Ethics, Concepts Values and Ethics.

Unit-II

Ethical Corporate Behaviour, Its Development, Ethical Leadership.

Unit-III

Ethical Decision-making, Ethical Dilemmas in Organization, Social Responsibility of Business and Corporate Governance.

Unit-IV

Ethic in Functional Area, Marketing, Finance, Human Resource and Information Technology.

Unit-V

Environmental Ethics, Corruption and Gender Issues—Gender Ethics, Sexual Harassment and Discrimination

REFERENCES

Unit 1: Introduction to Ethics (Pages 3-25)

Unit 2: Organizational Ethics (Pages 27-40)

Unit 3: Ethical Decisions (Pages 41-111)

Unit 4: Ethical Issues in the Functional Area (Pages 113-131)

Unit 5: Environmental Ethics, Corruption and Gender Issues (Pages 133-141)

. UNIT-I: Introduction to MATLAB

MATLAB Interactive Sessions, Menus and the toolbar, computing with MATLAB, Script files and the Editor Debugger, MATLAB Help, System, Programming in MATLAB.

UNIT-II:

Arrays

Arrays, Multidimensional Arrays, Element by Element Operations, Polynomial Operations Using Arrays, Cell Arrays, Structure Arrays.

. UNIT-III: Functions & Files

Elementary Mathematical Functions, User Defined Functions, Advanced Function Programming, Working with Data Files.

UNIT-IV: Programming Techniques

Program Design and Development, Relational Operators and Logical Variables, Logical Operators and Functions, Conditional

Statements, Loops, the Switch Structure, Debugging Mat Lab Programs. Plotting :XY- plotting functions, Subplots and Overlay plots,

Special Plot types, Interactive plotting, Function Discovery, Regression, 3-D plots.

. UNIT-V:Linear Algebraic Equations

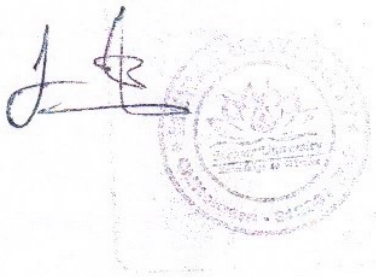
Elementary Solution Methods, Matrix Methods for (Linear Equations), Cramer's Method, Undet- ermined Systems, Order Systems.

TEXT BOOKS:

1. G. H. Golub and C. F. Van Loan, Matrix Computations, 3rd Ed., Johns Hopkins University Press, 1996.

2. B. N. Datta, Numerical Linear Algebra and Applications, Brooks/Cole, 1994 (out of print) 3. L. Elden, Matrix Methods in Data Mining and

Pattern Recognition, SIAM Press, 2007



BIG DATA Analytics

UNIT I :

INTRODUCTION TO BIG DATA AND HADOOP Types of Digital Data, Introduction to Big Data, Big Data Analytics, History of Hadoop, Apache Hadoop, Analysing Data with Unix tools, Analysing Data with Hadoop, Hadoop Streaming, Hadoop Echo System, IBM Big Data Strategy, Introduction to Infosphere BigInsights and Big Sheets.

UNIT II :

HDFS(Hadoop Distributed File System) The Design of HDFS, HDFS Concepts, Command Line Interface, Hadoop file system interfaces, Data flow, Data Ingest with Flume and Scoop and Hadoop archives, Hadoop I/O: Compression, Serialization, Avro and File-Based Data structures.

UNIT III :

Map Reduce Anatomy of a Map Reduce Job Run, Failures, Job Scheduling, Shuffle and Sort, Task Execution, Map Reduce Types and Formats, Map Reduce Features.

Unit IV :

Hadoop Eco System Pig : Introduction to PIG, Execution Modes of Pig, Comparison of Pig with Databases, Grunt, Pig Latin, User Defined Functions, Data Processing operators. Hive : Hive Shell, Hive Services, Hive Metastore, Comparison with Traditional Databases, HiveQL, Tables, Querying Data and User Defined Functions. Hbase : HBasics, Concepts, Clients, Example, Hbase Versus RDBMS. Big SQL : Introduction

UNIT V :

Data Analytics with R Machine Learning : Introduction, Supervised Learning, Unsupervised Learning, Collaborative Filtering. Big Data Analytics with BigR.

Text Books

• Tom White " Hadoop: The Definitive Guide" Third Edit on, O'reily Media, 2012.

• Seema Acharya, Subhasini Chellappan, "Big Data Analytics" Wiley 2015.

References

• Michael Berthold, David J. Hand, "Intelligent Data Analysis", Springer, 2007.

• Jay Liebowitz, "Big Data and Business Analytics" Auerbach Publications, CRC press (2013)

• Tom Plunkett, Mark Hornick, "Using R to Unlock the Value of Big Data: Big Data Analytics with Oracle R

Enterprise and Oracle R Connector for Hadoop", McGraw-Hill/Osborne Media (2013), Oracle press.

• Anand Rajaraman and Jef rey David Ulman, "Mining of Massive Datasets", Cambridge University Press,

2012.

• Bill Franks, "Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics", John Wiley & sons, 2012.

• Glen J. Myat, "Making Sense of Data", John Wiley & Sons, 2007 • Pete Warden, "Big Data Glossary", O'Reily, 2011.

• Michael Mineli, Michele Chambers, Ambiga Dhiraj, "Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses", Wiley Publications, 2013.

• ArvindSathi, "BigDataAnalytics: Disruptive Technologies for Changing the Game", MC Press, 2012

• Paul Zikopoulos ,Dirk DeRoos , Krishnan Parasuraman , Thomas Deutsch , James Giles , David Corigan ,

Cloud Computing

UNIT-I	Introduction: Cloud-definition, benefits, usage scenarios, History of Cloud Computing - Cloud Architecture Types of Clouds - Business models around Clouds – Major Players in Cloud Computing - issues in Clouds - Eucalyptus - Nimbus – Open Nebula, Cloud Sim.
UNIT-II	Cloud Services: Types of Cloud services: Software as a Service - Platform as a Service – Infrastructure as a Service - Database as a Service - Monitoring as a Service – Communication as services. Service providers- Google, Amazon, Microsoft Azure, IBM, Sales force Collaborating Using Cloud Services: Email Communication over the Cloud – CRM Management - Project Management-Event Management - Task Management – Calendar - Schedules - Word Processing – Presentation Spreadsheet - Databases – Desktop – Social Networks and Groupware
UNIT-III	Virtualization For Cloud: Need for Virtualization – Pros and cons of Virtualization – Types of Virtualization –System Vm, Process VM, Virtual Machine monitor – Virtual machine properties - Interpretation and Binary translation, HLL VM - Hypervisors – Xen, KVM, VMWare, Virtual Box, Hyper-V.
UNIT-IV	Security, Standards And Applications: Security in Clouds: Cloud security challenges – Software as a Service Security, Common Standards: The Open C loud Consortium – The Distributed management Task Force – Standards for application Developers – Standards for Messaging – Standards for Security End user access to cloud computing, Mobile Internet devices and the cloud.
Reference Books	Explain the Cloud Like I'm 10 Cloud Computing For Dummies Cloud Computing: Concepts, Technology & Architecture Infrastructure as Code

DEEP LEARNING

UNIT I INTRODUCTION TO DEEP LEARNING Introduction to machine learning - Linear models (SVMs and Perceptron's, logistic regression)- Introduction to Neural Nets: What are a shallow network computes- Training a network: loss functions, back propagation and stochastic gradient descent- Neural networks as universal function approximates

UNIT II INTRODUCTION TO DEEP LEARNING History of Deep Learning- A Probabilistic Theory of Deep Learning- Backpropagation and regularization, batch normalization- VC Dimension and Neural Nets-Deep Vs Shallow Networks Convolutional Networks- Generative Adversarial Networks (GAN), Semi-supervised Learning

UNIT III DIMENTIONALITY REDUCTION Linear (PCA, LDA) and manifolds, metric learning - Auto encoders and dimensionality reduction in networks - Introduction to Convnet - Architectures – AlexNet, VGG, Inception, ResNet - Training a Convnet: weights initialization, batch normalization, hyperparameter optimization.

Reference Books:

1. B. Yegnanarayana, "Artificial Neural Networks" Prentice Hall Publications.

2. Simon Haykin, "Artificial Neural Networks", Second Edition, Pearson Education.

3. Laurene Fausett, "Fundamentals of Neural Networks, Architectures, Algorithms and Applications", Prentice Hall publications.

4. Cosma Rohilla Shalizi, Advanced Data Analysis from an Elementary Point of View, 2015.

5. 2. Deng & Yu, Deep Learning: Methods and Applications, Now Publishers, 2013.

6. 3. Ian Goodfellow, Yoshua Bengio, Aaron Courville, Deep Learning, MIT Press, 2016.

7. 4. Michael Nielsen, Neural Networks and Deep Learning, Determination Press, 2015.

INTERNET SCURITY

Unit 1

Security problem in computing The meaning of Secure, Attacks, vulnerabilities, threats, control methods opportunities and motive, Security goals and vulnerabilities, Types of computer criminals from armature to career criminals, Defense methods

Unit 2

Program security & Trusted OS Secure Programs, Finding faults, unexpected behavior, Types of Flaws,Non malicious program errors, buffer overflow, incomplete mediation,time related errors, combination of non-malicious program flaws What is a trusted system, Military and commercial security policies, models of security, multilevel security?

Unit 3

Database security and Threats in networks Integrity requirements, Element integrity, auditability, access control, user authentication, Integrity, confidentiality, availability, Network vulnerabilities, who attacks networks, Reconnaissance, threats intransit, protocol flaws, integrity and confidentiality threats, website and other vulnerabilities, complex attacks

Unit 4

Administrative Security Security planning, members, commitment, incident response, business continuity, Risk analysis, organization security policies, characteristics of good policy, examples

Unit 5

Privacy in computing & Protecting programs and data Privacy concepts, computer related privacy problems, US and non US privacy policies, Identity theft, authentication and privacy Copy rights, patents, trade secrets, protection of computer objects.

Text Book:

Security in computing, Charles P, Pfleeger, Shari Lawrence Pfleeger, 4th edition, PHI

Reference book:

Information security fundamentals by Thomas R Peltier, Justine Peltier Johm Blackley, Special

Indian Edition, Auerbach

Business Ethics and Corporate Governance

Unit-I

Ethics and Business Ethics, Concepts Values and Ethics.

Unit-II

Ethical Corporate Behaviour, Its Development, Ethical Leadership.

Unit-III

Ethical Decision-making, Ethical Dilemmas in Organization, Social Responsibility of Business and Corporate Governance.

Unit-IV

Ethic in Functional Area, Marketing, Finance, Human Resource and Information Technology.

Unit-V

Environmental Ethics, Corruption and Gender Issues—Gender Ethics, Sexual Harassment and Discrimination

REFERENCES

Unit 1: Introduction to Ethics (Pages 3-25)

Unit 2: Organizational Ethics (Pages 27-40)

Unit 3: Ethical Decisions (Pages 41-111)

Unit 4: Ethical Issues in the Functional Area (Pages 113-131)

Unit 5: Environmental Ethics, Corruption and Gender Issues (Pages 133-141)

. UNIT-I: Introduction to MATLAB

MATLAB Interactive Sessions, Menus and the toolbar, computing with MATLAB, Script files and the Editor Debugger, MATLAB Help, System, Programming in MATLAB.

UNIT-II:

Arrays

Arrays, Multidimensional Arrays, Element by Element Operations, Polynomial Operations Using Arrays, Cell Arrays, Structure Arrays.

. UNIT-III: Functions & Files

Elementary Mathematical Functions, User Defined Functions, Advanced Function Programming, Working with Data Files.

UNIT-IV: Programming Techniques

Program Design and Development, Relational Operators and Logical Variables, Logical Operators and Functions, Conditional

Statements, Loops, the Switch Structure, Debugging Mat Lab Programs. Plotting :XY- plotting functions, Subplots and Overlay plots,

Special Plot types, Interactive plotting, Function Discovery, Regression, 3-D plots.

. UNIT-V:Linear Algebraic Equations

Elementary Solution Methods, Matrix Methods for (Linear Equations), Cramer's Method, Undet- ermined Systems, Order Systems.

TEXT BOOKS:

1. G. H. Golub and C. F. Van Loan, Matrix Computations, 3rd Ed., Johns Hopkins University Press, 1996.

2. B. N. Datta, Numerical Linear Algebra and Applications, Brooks/Cole, 1994 (out of print) 3. L. Elden, Matrix Methods in Data Mining and

Pattern Recognition, SIAM Press, 2007

OFFICE OF REGISTRAR

MEWAR UNIVERSITY, GANGRAR CHITTORGARH RAJ

Ref. No.: MU/RO/2019/2380-A **01st April 2019**

OFFICE ORDERS

Sub: Reconstitution of Board of Studies for Departments of Electrical Engineering

The Board of studies for Department of Electrical Engineering is reconstituted as per rule 12 of the Statutes of Mewar University, as under:

1) Prof. (Dr.) Tanveer Ahmed Kazi (Dean of Engineering) -Chairman
2) Prof. (Dr.) Vinesh Agarwal, Sangam university, Bhilwara -External Member
3) Mr. Shafik Ahmed, AGM, Secure Meters Udaipur -External Member
4) Mr. Mantosh Kumar, Assistant Professor -Internal Member
5) Mr. Rajkiran B, Assistant Professor - Internal Member
6) Mr. Deepak Kumar Joshi, Assistant Professor - Internal Member
7) Mr. V. Siva Brahmaiah Rama(HOD,EE) -Convener

The terms of reference for the Board of Studies are as provide in rule 12 of the Statutes.

The chairman of the Board of Studies may associate any member in the meeting, as special invitee if it is that considered his/her association will contribute in the task of the meeting, with the approval of the President/ Vise Chancellor.

The Convener of the meeting is advised to hold the meeting of the BOS seeking Convenience of the Chairman before the end of June, 2019. The proceeding of the meeting may send to the VC/ Registrar as early as possible.

The External Member shall be entitled for TA/DA and sitting fees as per the norms prescribed by the Mewar University.

Registrar

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy To:

1) Ps To Hon'ble Chairperson for kind information
2) Secretary, MES & Member, BOM for kind information
3) To President for kind information
4) Ps To Pro President for kind information
5) Dean/HODs/COE/Research/Stores/it/etc

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF ELECTRICAL ENGINEERING

DATE: 06.06.2019

Minutes of Meeting of Board of Studies

Minutes of the BOS of the Department of Electrical Engineering meeting held on 06-06-2019 in Room No. 211 at 11.30 AM.

The following members were present: **(Annexure 1)**

1) Prof. (Dr.) Tanveer Ahmed Kazi (Dean of Engineering) - Chairman
2) Prof. (Dr.) Vinesh Agarwal, Sangam University, Bhilwara - External Member
3) Mr. Shafik Ahmed, AGM, Secure Meters Udaipur - External Member
4) Mr. Mantosh Kumar, Assistant Professor - Internal Member
5) Mr. Rajkiran B, Assistant Professor - Internal Member
6) Mr. Deepak Kumar Joshi - Internal Member
7) Mr. V. Siva Brahmaiah Rama(HOD, EE) - Convener

Mr. V. Siva Brahmaiah Rama, Head of the Department of Electrical Engineering, warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 22-08-2018

Resolution: Minutes of the previous BOS of the Electrical Engineering Department held on 22-08-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Dr. V. Siva Brahmaiah (Head, Electrical Engineering) presented a departmental activity report mentioning all the activities conducted related to the curricular development such as the lecture plan, two-way teaching theory in the form of ACP, seminars, workshops, guest lectures, research and development, faculty development and industrial collaboration.

Agenda 3: Review of Existing Programmes/Courses

Resolution: The Committee reviewed the scheme and syllabus of B. Tech (Electrical Engineering) for the session 2019-20. **(Annexure 2)**

6/6/2019

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Agenda 4: Introduction of New Programmes/ Course

Resolution:

1. The BOS Committee approved the syllabus of five new courses in B. Tech. Electrical Engineering from session 2019-20 is mentioned below. **(Annexure 3)**
   - Line-Commutated And Active Pwm Rectifiers
   - Electrical And Hybrid Vehicles
   - Power System Economics, Monitoring & Control
   - Power System Protection
   - Power Quality And Facts
2. Addition of a New Department Elective Course in M.Tech (Renewable Energy and Power System Engineering). **(Annexure 4)**

S.No.	Program Code	Course Name
1	M.Tech-RE	Energy Auditing Instrumentation
2	M.Tech-RE	Power Sources For Electric Vehicles
3	M.Tech-PSE	Advanced Control System

3. As per the recommendation of the previous BOS committee members, it is decided to offer a new Program " M.Tech in Power Electronics & Drives" from the upcoming session 2019-20. The scheme and course are attached here. **(Annexure 5)**
   - M.Tech – Power Electronics and Drives

Agenda 5: Any other suggestions by BOS Committee

Resolution: Further based on suggestions of Dr. Vinesh Agarwal, Professor (Sangam University) & Mr. Shafik Ahmed AGM, Secure Meter, Udaipur, it is decided to include some Value Added Certificate Course Like Energy Management/Solar/PLC SCADA/CAD/Automation/Electric Vehicle Should be added in the Syllabus.

Agenda 6: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the revised syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

R.V.S.

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH

(RAJ.)DEPARTMENT OF ELECTRICAL ENGINEERING

DATE: 06.06.2019

Annexure I Attendance Sheet

SN	Name	Designation	Post	Signature
1	Prof.(Dr.) Tanveer Ahmed Kazi	Dean of Engineering & Technology	Chairman	6/6/2019
2	Dr. Vinesh Agarwal	Head of Dept. of Electrical Engineering (Sangam University, Bhilwara)	External Member	6/6/19
3	Mr. Shafik Ahmed	AGM, Secure Meter, Udaipur	External Member	
4	Mr. Mantosh Kumar	Assistant Professor	Internal Member	6/6/2019
5	Mr. Rajkiran B	Assistant Professor	Internal Member	6/6/2019
6	Mr. Deepak Kumar Joshi	Assistant Professor	Internal Member	6/6/2019
7	Dr. V. Siva Brahmaiah	Assistant Professor &HOD	Convener	6/6/19

LINE-COMMUTATED AND ACTIVE PWM RECTIFIERS

Course Outcomes:

At the end of this course, students will demonstrate the ability to

- Analyse controlled rectifier circuits.
- Understand the operation of line-commutated rectifiers – 6 pulse and multi-pulse configurations.
- Understand the operation of PWM rectifiers – operation in rectification and regeneration modes and lagging, leading and unity power factor mode.1

Module 1: Diode rectifiers with passive filtering

Half-wave diode rectifier with RL and RC loads; 1-phase full-wave diode rectifier with L, C and LC filter; 3-phase diode rectifler with L, C and LC filter; continuous and discontinuous conduction, input current wave shape, effect of source inductance; commutation overlap.

Module 2: Thyristor rectifiers with passive filtering

Half-wave thyristor rectifier with RL and RC loads; 1-phase thyristor rectifier with L and LC filter; 3- phase thyristor rectifier with L and LC filter; continuous and discontinuous conduction, input current wave shape.

Module 3: Multi-Pulse converter

Review of transformer phase shifting, generation of 6-phase ac voltage from 3-phase ac, 6-pulse converter and 12-pulse converters with inductive loads, steady state analysis, commutation overlap, notches during commutation.

Module 4: Single-phase ac-dc single-switch boost converter

Review of dc-dc boost converter, power circuit of single-switch ac-dc converter, steady state analysis, unity power factor operation, closed-loop control structure.

Module 5: Ac-dc bidirectional boost converter

Review of 1-phase inverter and 3-phase inverter, power circuits of 1-phase and 3-phase ac-dc boost converter, steady state analysis, operation at leading, lagging and unity power factors. Rectification and regenerating modes. Phasor diagrams, closed-loop control structure.

Module 6: Isolated single-phase ac-dc flyback converter

Dc-dc flyback converter, output voltage as a function of duty ratio and transformer turns ratio. Power circuit of ac-dc flyback converter, steady state analysis, unity power factor operation, closed loop control structure.

Text/ References:

1. G. De, "Principles of Thyristorised Converters", Oxford & IBH Publishing Co, 1988.
2. J.G. Kassakian, M. F. Schlecht and G. C. Verghese, "Principles of Power Electronics", Addison-Wesley, 1991.
3. L. Umanand, "Power Electronics: Essentials and Applications", Wiley India, 2009.
4. N. Mohan and T. M. Undeland, "Power Electronics: Converters, Applications and Design", John Wiley & Sons, 2007.
5. R. W. Erickson and D. Maksimovic, "Fundamentals of Power Electronics", Springer Science & Business Media, 2001.

Head
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Electrical Engineering
Mewar University, Chittorgarh (Raj.)

2. K. R. Padiyar, "FACTS Controllers in Power Transmission and Distribution", New Age International (P) Ltd. 2007.
3. T. J. E. Miller, "Reactive Power Control in Electric Systems", John Wiley and Sons, New York, 1983.
4. R. C. Dugan, "Electrical Power Systems Quality", McGraw Hill Education, 2012.

Head
Department of
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Mewar University, Chittorgarh (Raj.)

ELECTRICAL AND HYBRID VEHICLES

Course Outcomes:

At the end of this course, students will demonstrate the ability to

- Understand the models to describe hybrid vehicles and their performance.
- Understand the different possible ways of energy storage.
- Understand the different strategies related to energy storage systems.

Module 1: Introduction

Conventional Vehicles: Basics of vehicle performance, vehicle power source characterization, transmission characteristics, and mathematical models to describe vehicle performance.

Introduction to Hybrid Electric Vehicles: History of hybrid and electric vehicles, social and environmental importance of hybrid and electric vehicles, impact of modern drive-trains on energy supplies.

Hybrid Electric Drive-trains: Basic concept of hybrid traction, introduction to various hybrid drivetrain topologies, power flow control in hybrid drive-train topologies, fuel efficiency analysis.

Module 3: Electric Trains

Electric Drive-trains: Basic concept of electric traction, introduction to various electric drive train topologies, power flow control in electric drive-train topologies, fuel efficiency analysis.

Electric Propulsion unit: Introduction to electric components used in hybrid and electric vehicles, Configuration and control of DC Motor drives, Configuration and control of Induction Motor drives, configuration and control of Permanent Magnet Motor drives, Configuration and control of Switch Reluctance Motor drives, drive system efficiency.

Module 4: Energy Storage

Energy Storage: Introduction to Energy Storage Requirements in Hybrid and Electric Vehicles, Battery based energy storage and its analysis, Fuel Cell based energy storage and its analysis, Super Capacitor based energy storage and its analysis, Flywheel based energy storage and its analysis, Hybridization of different energy storage devices. Sizing the drive system: Matching the electric machine and the internal combustion engine (ICE), Sizing the propulsion motor, sizing the power electronics, selecting the energy storage technology, Communications, supporting subsystems

Module 5: Energy Management Strategies

Energy Management Strategies: Introduction to energy management strategies used in hybrid and electric vehicles, classification of different energy management strategies, comparison of different energy management strategies, implementation issues of energy management strategies.

Case Studies: Design of a Hybrid Electric Vehicle (HEV), Design of a Battery Electric Vehicle (BEV).

Text / References:

1. C. Mi, M. A. Masrur and D. W. Gao, "Hybrid Electric Vehicles: Principles and Applications with Practical Perspectives", John Wiley & Sons, 2011.
2. S. Onori, L. Serrao and G. Rizzoni, "Hybrid Electric Vehicles: Energy Management Strategies", Springer, 2015.
3. M. Ehsani, Y. Gao, S. E. Gay and A. Emadi, "Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory, and Design", CRC Press, 2004.
4. T. Denton, "Electric and Hybrid Vehicles", Routledge, 2016.

POWER SYSTEM ECONOMICS, MONITROING & CONTROL

Course Outcomes:

At the end of this course, students will demonstrate the ability to

- Use numerical methods to analyse a power system in steady state.
- Understand stability constraints in a synchronous grid.
- Understand methods to control the voltage, frequency and power flow.
- Understand the monitoring and control of a power system.
- Understand the basics of power system economics.

Module 1: Power Flow Analysis

Review of the structure of a Power System and its components. Analysis of Power Flows: Formation of Bus Admittance Matrix. Real and reactive power balance equations at a node. Load and Generator Specifications. Application of numerical methods for solution of non-linear algebraic equations – Gauss Seidel and Newton-Raphson methods for the solution of the power flow equations. Computational Issues in Large-scale Power Systems.

Module 2: Stability Constraints in synchronous grids

Swing Equations of a synchronous machine connected to an infinite bus. Power angle curve. Description of the phenomena of loss of synchronism in a single-machine infinite bus system following a disturbance like a three--phase fault. Analysis using numerical integration of swing equations (using methods like Forward Euler, Runge-Kutta 4th order methods), as well as the Equal Area Criterion. Impact of stability constraints on Power System Operation. Effect of generation rescheduling and series compensation of transmission lines on stability.

Module 3: Control of Frequency and Voltage

Turbines and Speed-Governors, Frequency dependence of loads, Droop Control and Power Sharing. Automatic Generation Control. Generation and absorption of reactive power by various components of a Power System. Excitation System Control in synchronous generators, Automatic Voltage Regulators. Shunt Compensators, Static VAR compensators and STATCOMs. Tap Changing Transformers.

Power flow control using embedded dc links, phase shifters and

Module 4: Monitoring and Control

Overview of Energy Control Centre Functions: SCADA systems. Phasor Measurement Units and Wide-Area Measurement Systems. State-estimation. System Security Assessment. Normal, Alert, Emergency, Extremis states of a Power System. Contingency Analysis. Preventive Control and Emergency Control.

Module 5: Power System Economics and Management

Basic Pricing Principles: Generator Cost Curves, Utility Functions, Power Exchanges, Spot Pricing. Electricity Market Models (Vertically Integrated, Purchasing Agency, Whole-sale competition, Retail Competition), Demand Side-management, Transmission and Distributions charges, Ancillary Services. Regulatory framework.

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POWER SYSTEM PROTECTION

Course Outcomes: At the end of this course, students will demonstrate the ability to

- Understand the different components of a protection system.
- Evaluate fault current due to different types of fault in a network.
- Understand the protection schemes for different power system components.
- Understand the basic principles of digital protection.
- Understand system protection schemes, and the use of wide-area measurements.

Module 1: Introduction and Components of a Protection System

Principles of Power System Protection, Relays, Instrument transformers, Circuit Breakers

Module 2: Faults and Over-Current Protection

Review of Fault Analysis, Sequence Networks. Introduction to Overcurrent Protection and overcurrent relay co-ordination.

Module 3: Equipment Protection Schemes

Directional, Distance, Differential protection. Transformer and Generator protection. Bus bar Protection, Bus Bar arrangement schemes.

Module 4: Digital Protection

Computer-aided protection, Fourier analysis and estimation of Phasors from DFT. Sampling, aliasing issues.

Module 5: Modeling and Simulation of Protection Schemes

CT/PT modeling and standards, Simulation of transients using Electro-Magnetic Transients (EMT) programs. Relay Testing.

Module 6: System Protection

Effect of Power Swings on Distance Relaying. System Protection Schemes. Under-frequency, Undervoltage and df/dt relays, Out-of-step protection, Synchro-phasors, Phasor Measurement Units and Wide-Area Measurement Systems (WAMS). Application of WAMS for improving protection systems.

Text/References

1. J. L. Blackburn, "Protective Relaying: Principles and Applications", Marcel Dekker, New York, 1987.
2. Y. G.Paithankar and S. R. Bhide, "Fundamentals of power system protection", Prentice Hall, India, 2010.
3. A. G. Phadke and J. S. Thorp, "Computer Relaying for Power Systems", John Wiley & Sons, 1988.
4. A. G. Phadke and J. S. Thorp, "Synchronized Phasor Measurements and their Applications", Springer, 2008.
5. D. Reimert, "Protective Relaying for Power Generation Systems", Taylor and Francis, 2006.

POWER QUALITY AND FACTS

Course Outcomes:

At the end of this course, students will demonstrate the ability to

- Understand the characteristics of ac transmission and the effect of shunt and series reactive compensation.
- Understand the working principles of FACTS devices and their operating characteristics.
- Understand the basic concepts of power quality.
- Understand the working principles of devices to improve power quality.

Module 1: Transmission Lines and Series/Shunt Reactive Power Compensation

Basics of AC Transmission. Analysis of uncompensated AC transmission lines. Passive Reactive Power Compensation. Shunt and series compensation at the mid-point of an AC line. Comparison of Series and Shunt Compensation.

Module 2: Thyristor-based Flexible AC Transmission Controllers (FACTS)

Description and Characteristics of Thyristor-based FACTS devices: Static VAR Compensator (SVC), Thyristor Controlled Series Capacitor (TCSC), Thyristor Controlled Braking Resistor and Single Pole Single Throw (SPST) Switch. Configurations/Modes of Operation, Harmonics and control of SVC and TCSC. Fault Current Limiter.

Module 3: Voltage Source Converter based (FACTS) controllers

Voltage Source Converters (VSC): Six Pulse VSC, Multi-pulse and Multi-level Converters, Pulse-Width Modulation for VSCs. Selective Harmonic Elimination, Sinusoidal PWM and Space Vector Modulation.

STATCOM: Principle of Operation, Reactive Power Control: Type I and Type II controllers, Static Synchronous Series Compensator (SSSC) and Unified Power Flow Controller (UPFC): Principle of Operation and Control. Working principle of Interphase Power Flow Controller. Other Devices: GTO Controlled Series Compensator. Fault Current Limiter.

Module 4: Application of FACTS

Application of FACTS devices for power-flow control and stability improvement. Simulation example of power swing damping in a single-machine infinite bus system using a TCSC. Simulation example of voltage regulation of transmission mid-point voltage using a STATCOM.

Module 5: Power Quality Problems in Distribution Systems

Power Quality problems in distribution systems: Transient and Steady state variations in voltage and frequency. Unbalance, Sags, Swells, Interruptions, Wave-form Distortions: harmonics, noise, notching, dc-offsets, fluctuations. Flicker and its measurement. Tolerance of Equipment: CBEMA curve.

Module 6: DSTATCOM

Reactive Power Compensation, Harmonics and Unbalance mitigation in Distribution Systems using DSTATCOM and Shunt Active Filters. Synchronous Reference Frame Extraction of Reference Currents. Current Control Techniques in for DSTATCOM.

Module 6: Dynamic Voltage Restorer and Unified Power Quality Conditioner

Voltage Sag/Swell mitigation: Dynamic Voltage Restorer – Working Principle and Control Strategies. Series Active Filtering. Unified Power Quality Conditioner (UPQC): Working Principle. Capabilities and Control Strategies.

Text/References

1. N. G. Hingorani and L. Gyugyi, "Understanding FACTS: Concepts and Technology of FACTS Systems", Wiley-IEEE Press, 1999.

Head
Department of Electrical Engineering
Mewar University, Chittorgarh (Raj.)

ENERGY AUDITING INSTRUMENTATION

Unit I Instrument classification, Characteristics of Instruments - Static and dynamic, experimental error analysis, systematic and random errors, Statistical analysis, Uncertainty, Experimental planning and selection of measuring instruments, Reliability of instruments.

Unit II Data logging and acquisition, use of intelligent instruments for error reduction, element of micro-computer interfacing, intelligent instruments in use.

Unit III Measurement of thermo-physical properties, instruments for measuring temperature, pressure and flow, use of intelligent instruments for the physical variables. Electrical measurement – Power analyzer – harmonic analyzer – power factors

Unit IV Techniques, shadow graph, Schifrin, interferometer, Laser Doppler anemometer, heat flux measurement, Telemetry in engines.

Unit V Chemical, thermal, magnetic and optical gas analysers, measurement of smoke, dust and moisture, gaschromatography, spectrometry, measurement of pH, Review of basic measurement techniques.

References:

1. Holman, J.P., Experimental methods for engineers, McGraw-Hill, 1988.

2. Barney, Intelligent Instrumentation, Prentice Hall of India, 1988.

3. Prebrashensky, V., Measurements and Instrumentation in Heat Engineering, Vol.1 and 2, MIR Publishers,1980.

4. Raman, C.S., Sharma, G.R., Mani, V.S.V., Instrumentation Devices and systems, Tata McGraw Hill, NewDelhi, 1983.

5. Doeblin, Measurements System Application and Design, McGraw Hill, 1978. 6. Morris. A.S, Principles of Measurements and Instrumentation, Prentice Hall of India, 1998.

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POWER SOURCES FOR ELECTRIC VEHICLES

The Electric Vehicle Debate, Primary Energy Sources and Alternative Fuels for Transportation, History of Electric Vehicles, Electrochemical Power Sources – Secondary Batteries and Fuel Cells

Sources- Aqueous Electrolyte Batteries –Lead Acid, Nickel – Iron, Nickel – Zinc, Metal – Air Zinc – Halogen

Non Aqueous Electrolyte Batteries- High Temperature Batteries, Organo Electrolyte and Solid State Batteries

Overview of Performances of Candidate Secondary Battery Systems-Fuel Cells - Acid Systems, Direct Methanol / Air Systems , Alkaline Systems-Overview of Performances of candidate Fuel Cell Systems, Battery / Fuel cell / Internal Combustion Engine Hybrid Electric Vehicles, Laboratory Test of Electric Vehicle Batteries, Vehicle tests with Electric Vehicle Batteries, Future of Electric Vehicles

TEXT BOOK:

1. Power Sources for Electric Vehicles, Edited by B.D. McNicol and D.A.J. Rand, Elsevier Publications.1998

2. Lithium Batteries for Hybrid Cars By John Voelcker, IEEE Spectrum, 1990

REFERENCES:

1. Hand Book of Batteries and Fuel cells, 3rd Edition, Edited by David Linden and Thomas. B. Reddy, McGraw Hill Book Company, N.Y. 2002.

2.Fuel Cells, Principles and Applications, Viswanathan, B. and Scibioh, Aulice M, Universities Press, 2006.

3.The Essential Hybrid Car Handbook: A Buyer's Guide (Paperback)by Nick Yost, The Lyons Press, N.Y. 2006.

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Advanced Control System

Overview of Control Systems: LTI Motion Control System; Temperature & Voltage Regulators; Modeling of Servo-motors, Hydraulic & pneumatic actuators. Computation of Relative stability using Bode plot and Nyquist method. Hierachical Control Of Power System; System Control; Load scheduler and Optimiser; Real Reactive power Flow Control; AVR and Turbine Speed governor set points.

Control System Performance: Improvement of System Performance through Compensation; Design of lag; Lead and Lag load Compensators; PI, PD & PID control; PID Controller Design and tuning; Disturbance rejection; System Uncertainty and performance Robustness.

Analysis in state space: State model for SISO & MIMO Systems; State Diagram; Solution of state equation; State Transformations; Jacobian Linearization Technique; Stability; Controllability & Observability; Perspective on State-Space design; Full-State Feedback Design of continuous time control system; Full Order observer System.

Digital Control system: Configuration of Digital Control System; Supervisory Control; Direct digital control; Single-Loop Digital controllers; Sampling Process; Sampling theorem; Data reconstruction; Digital transfer function & System response; Stability Tests ; Mapping between s-plane & z-plane; Bilinear transformation; Error constants; Pole assignment design based on full state feedback; Compensator design in w-plane using Bode plot.

Non-linear System: Common non-linearities ; Methods of Analysis; Linearization; Phase Plane method; Describing function Analysis; Limit Cycles; Relay with dead-zone and hysteresis; Stability analysis by Lyapunov's methods.

Optimal Control: Characteristics of optimal control problems; Linear optimal Control with quadratic performance index; Selection of performance measure; State and Output regulators; Optimal state regulator problem with matrix Ricatti equation.

Reference books:

1. Ogata, k – modern control engineering, p.h learning.

2. Kuo, b.c – automatic control systems, prentic hall.

3. Roy chowdhury, d – modern control engineering, prentic hall.

4. Nagrath i.j, gopal m – control system engineering, new age publishing.

5. Gopal, m – digital control and state variable methods, tata mcgraw -hill.

6. Kuo, b.c. – digital control system, oxford university press.

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Mewar University, Chittorgarh (Raj.)

OFFICE OF THE REGISTRAR

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019/2738-A **10th August 2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Computer Science & Engineering

The Board of Studies for the Department of Computer Science & Engineering is reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1. Prof. (Dr.) Tanveer Ahmed Kazi, Professor & Dean - Chairman
2. Mrs. Jyoti Totla, Assistant Professor & HOD - Convener
3. Prof. S. C. Jain, CSE Department, Kota - External Member 1
4. Prof. (Dr.) Prasun Chakrabarti, Sr. Chair Professor, Techno India NJR, Udaipur - External Member 2
5. Mr. Awanit Kumar, MITRP, Alwar - Alumni
6. Mr. D. R. Yadav, Dy. G.M. (IT), BSL. LTD. Bhilwara - Member from Industry
7. Mr. Firdos Sheikh, Assistant Professor - Internal Member 1
8. Mr. Anil Dangi, Assistant Professor - Internal Member 2

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.
The Chairman of the Board of Studies may associate any member in the meeting, as a special invitee if it is considered his association will contribute to the task of the meeting with the approval of the President/Vice-Chancellor.
The Convener of the Meeting is advised to hold the meeting of the BOS seeking the convenience of the Chairman on 11th Sep. 2019.

. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.
The External Members shall be entitled to TA/DA and sitting fees as per the norms prescribed by Mewar University.

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

- PS to Hon'ble Chairperson (for kind information)
- PS to Hon'ble President (for kind information)
- PS to Hon'ble Pro-President (for kind information)
- All concerned Deans/Directors/HoD's (for kind information & necessary action)
- Accounts/Examination/Library/Store/Warden/Security/IT Head.
- Coordinator, IQAC Cell.
- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF Computer Science & Engineering

DATE: 11th Sept. 2019

Minutes of Meeting of Board of Studies

The Board of Studies Meeting of the Department of Computer Science & Engineering is held on 11th September 2019 in Room No. 135 at 10:30 am onwards to approve the new/changes in curriculum and syllabus revision for session 2019-20.

The following members were present: **(Annexure 1)**

1. Prof. (Dr.) Tanveer Ahmed Kazi, Professor & Dean - Chairman
2. Mrs. Jyoti Totla, Assistant Professor & HOD - Convener
3. Prof. S. C. Jain, CSE Department, Kota - External Member 1
4. Prof. (Dr.) Prasun Chakrabarti, Sr. Chair Professor, Techno India NJR, Udaipur - External Member 2
5. Mr. Awanit Kumar, MITRP, Alwar - Alumni
6. Mr. D. R. Yadav, Dy. G.M. (IT), BSL. LTD. Bhilwara - Member from Industry
7. Mr. Firdos Sheikh, Assistant Professor - Internal Member 1
8. Mr. Anil Dàngi, Assistant Professor - Internal Member 2

Mrs. JyotiTotla (Head of the Department of Computer Science & Engineering) warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 20-08-2018

Resolution: Minutes of the previous BOS of the Computer Science & Engineering department held on 20-08-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Mrs. JyotiTotla (Head, Computer Science & Engineering) presented a departmental activity report mentioning all the activities conducted related to curricular development, research and development, faculty development and Industrial collaboration.

Jyoti
11/9/19

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Agenda 3: Revision of Existing Programmes/ Courses (B. TECH. (CSE) & M. TECH. (CSE))

Resolution: It was resolved to revise the syllabus & scheme forthe coming session 2019-20 in B.Tech CSE &M.Tech CSE Programmes.

Agenda 4: Introduction of New Programme/Course

Resolution:

1. As per the suggestionsreceived from previous BOS committee members, five new courses will be introduced for the upcoming session 2019-20 in B.Tech CSE. The courses are mentioned below**(Annexure 3)**
    - Web Stack Technology
    - Distributed Data Base
    - Computational Geometry
    - Simulation And Modeling
    - Data Engineering
2. Suggestionsreceived from previous BOS committee members, one new course will be introduced for the upcoming session 2019-20 in M.Tech CSE. The courses are mentioned below **(Annexure 4)**

- Block Chain Technology

Agenda 5: Any other suggestions by BOS Committee

Resolution: Based on the feedback of Alumni of the department, It was recommended to make Minor Project Mandatory in place of a Minor Project/ dissertation Phase-1 based on hardware if possible

Agenda 6: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the revised syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

Jyoti
11/9/19

MEWAR UNIVERSITY
Chittorgarh-312901 (Raj.)

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

DATE: 11th September 20

Annexure 1: Attendance Sheet

SN	Name	Designation	Post	Signature
1	Prof. (Dr.) Tanveer Ahmed Kazi	Professor & Dean	Dean-Chairman	11/09/2019
2	Mrs. JyotiTotla	Assistant Professor&HOD	HOD-Convener	Jyoti 11/09/19
3	Prof. S. C. Jain	CSE Department, Kota,	External Member 1	
4	Prof. (Dr.)PrasunChakrabarti	Sr. Chair Professor, Techno India NJR, Udaipur	External Member 2	11/9/2019
5	Mr. Awanit Kumar	MITRP, Alwar	Alumni	
6	Mr. D. R. Yadav	Dy. G.M. (IT), BSL. LTD. Bhilwara	Member from Industry	11/09/19
7	Mr. Firdos Sheikh	Assistant Professor	Internal Member 1	
8	Mr. Anil Dangi	Assistant Professor	Internal Member 2	11 Sep 2019

JAVA BASED WEB STACK TECHNOLOGY

UNIT-1

Client & server side programming. Enterprise architecture styles: Single tier , 2-tier , 3-tier, n-tier; Relative comparison of the different layers of architectures.

MVC Architecture: Explanation, Need, Drawbacks, J2EE WEB SERVICES, Different components & containers.

UNIT-2

Servlet: Introduction, Advantages over CGI, How it works?, Servlet life cycle, Servlet API (Different interfaces & classes of generic servlet & HTTP servlet), Accessing user information by means of Request & Response, Servlet session management techniques and relative comparison.

UNIT-3

JSP: Introduction, Comparison between JSP & servlet., Architecture/Life cycle, Different types of JSP architectures and relative comparison.; JSP tags ,Directives, Scripting elements, Actions; JSP implicit objects, Accessing user information using implicit objects.

UNIT-4

EJB :Introduction, Comparison of EJB & Java Beans , Applications, Drawbacks, Different types of enterprise beans, Services provided by EJB container.

RMI: Introduction and applications, Architecture ,Use of RMI Registry.

JNDI: Introduction and applications, Comparison between LDAP and JNDI

JDO (Java Data Objects): Introduction, Integration of EJB and JDO, JDO & RMI

UNIT-5

JINI :Introduction, Applications

JDBC: Introduction, Database driver ,Different approaches to connect an application to a database server, Establishing a database connection and executing SQL statements, JDBC prepared statements, JDBC data sources.

XML: Java & XML, XML syntax, Document type definition., Parsers, SAX parsers, DOM parsers, SAX vs. Dom, JAXP and JAXB.

Text :

1. "Professional JAVA Server Programming", Allamaraju and Buest ,SPD Publication

2. "Beginning J2EE 1.4" Ivor Horton, SPD Publication.

3. "Advanced Programming for JAVA 2 Platform" Austin and Pawlan, Pearson

Reference Books:

1. Internet & Java Programming by Krishnamoorthy & S. Prabhu(New Age Publication)

Distributed Database

Module I

Distributed DBMS features and needs. Reference architecture. Levels of distribution transparency, replication. Distributed database design - fragmentation, allocation criteria.

Module II

Storage mechanisms. Translation of global queries. / Global query optimisation. Query execution and access plan. Concurrency control - 2 phases locks. Distributed deadlocks. Time based and quorum based protocols. Comparison. Reliability- non-blocking commitment protocols.

Module III

Partitioned networks. Checkpoints and cold starts. Management of distributed transactions- 2 phase unit protocols. Architectural aspects. Node and link failure recoveries.

Module IV

Distributed data dictionary management. Distributed database administration. Heterogeneous databases-federated database, reference architecture, loosely and tightly coupled. Alternative architecture. Development tasks, Operation- global task management. Client server databases-SQL server, open database connectivity. Constructing an application.

Books:

1. Database System Concepts, Silberschatz Korth, Sudarshan, MH

2. Distributed Database, Tannenbaum, Pearson

3. Principles of Distributed Database Systems, M. Tamerozsu Patrick Valduriez, Pearson

3. Database Management Systems,Ramakrishnan, MH

4. Beginning SQL Server 2000 programming, Dewson,SPD/WROX

6. Database Management Systems, Leon, VIKAS

Computational Geometry

Module I

Introduction - historical perspective, algorithmic background, geometric preliminaries, initial forays, Convex hulls - problem statement and lower bounds, convex hull algorithms, convex hulls in >2 dimensions, extensions and applications

Module II

Polygon approximation - triangular approximations, k-gonal approximations, restricted approximations, other criteria of approximation, Geometric searching, point-location problems, range-searching problems.

Module III

Proximity - Typical problems and lower bounds, Closest pair problem, Voronoi diagrams, Minimum spanning trees, Triangulations.Miscellaneous problems - (More) Art gallery problems, Intersections, Pattern recognition, Parallel computational geometry.

Books:

1. Laszlo, Computational Geometry, PHI

2. M.de Berg, Computational Geometry-algorithms & applications,Springer India

Modeling & Simulation Simulation

Module I

The notion of system, model, simulation. Types of simulations. Illustrative examples. Conceptual and computer models. Verification and validation of models. Simulation experiment. Simulation project life cycle. Description of simulation models. Structure vs. behaviour models. Classification of tasks solved within the modeling and simulation process. Detailed example introduction: database server as a typical queuing system. Description of discrete-event systems behaviour. Modeling of time. The notion of status, event, activity, process and their interdependencies. Object-oriented model design. Simulation time, control of time advancement, event list. Event driven simulation algorithm. Detailed example: implementation of the database server as a queuing system. Random numbers in simulation. Random variables with discrete and continuous probability distribution. Pseudo-random generators. Multiplicative and additive congruential method. Nonuniform random numbers.

Module II

Testing of pseudo-random generators. Monte Carlo method. Precision. Queueing systems. Entities: queues, service facilities, storages. Properties of input and output stream. Kendall classification of queueing systems. Entity behaviour and statistical data sampling during the simulation run. Discrete and continuous Markov model. Birth -Death processes. Steady-state queueing systems of types M/M/1; M/M/? , M/M/m, M/Er/1, Er/M/1 and their variants.

Module III

Models M/G/1, G/M/1, G/M/m, G/G/1, G/D/1, M+D/D/1. Closed systems and queueing networks. Simulation languages for discrete-event systems. Case study and comparison: Simscript, GPSS, SOL,

Module IV

Case study and comparison: Simula 67. Object oriented design and implementation of simulation models. Persistence of objects in C++, case studies. Application in a simulation system. Simulation experiments. Preparation and pre-processing of input data. Statistical data

collected during the simulation run. Time dependency of statistics. Histograms. Evaluation and interpretation of results. Model validation and verification.

Simulation of digital systems. Abstractions levels of digital system description. Models of signals and functions. Structure vs. behaviour. Models of components. Models of delays. Digital systems simulators - methods of implementation. Flow of simulation time. Synchronous and asynchronous algorithm of digital systems simulation. Acceleration of simulation run. Register-transfer level simulation. Simulation languages of HDL type. VHDL language and tools. Implementation of concurrent statements and processes in VHDL. Modeling of time and event list.

Text books:

1.Law, A.M., Kelton, W.D.: Simulation Modeling and Analysis. McGraw-Hill, New York, 2-nd edition, 1991. ISBN 0-07-100803-9.

2. Basmadjian, Mathematical Modeling of Physical Systems, OUP

3. Brewmaud, Markov Chains; With Gibbs Field , Monte Carlo Simulation & Ques, Springer Verlag

4.Hoover,S.V., Perry,R.F.: Simulation: a Problem-Solving Approach. Addison - Wesley, 1990. ISBN 0-20116880-4.

5.Zeigler,B.P.: Theory of Modeling and Simulation. John Wiley, New York,1976. Re-published Krieger Publ., Malabar, 1985.

6.Fishwick,P.A.: Simulation Model Design and Execution: Building Digital Worlds. Prentice Hall, Englewood Cliffs,1995.

7.Kleinrock, L.: Queuing Systems Vol.I, Vol.II, Wiley & Sons, London, 1975.

8. First Course in Mathematical Modeling, Giordano, Vikas

BLOCK CHAIN TECHNOLOGY

MODULE 1: INTRODUCTION TO BLOCKCHAIN

Distributed DBMS – Limitations of Distributed DBMS, Introduction to Block chain – History, Definition, Distributed Ledger, Blockchain Categories – Public, Private, Consortium, Blockchain Network and Nodes, Peer-to-Peer Network, Mining Mechanism, Generic elements of Blockchain, Features of Blockchain, and Types of Blockchain.

MODULE 2: BLOCKCHAIN ARCHITECTURE

Operation of Bitcoin Blockchain, Blockchain Architecture – Block, Hash, Distributer P2P, Structure of Blockchain- Consensus mechanism: Proof of Work (PoW), Proof of Stake (PoS), Byzantine Fault Tolerance (BFT), Proof of Authority (PoA) and Proof of Elapsed Time (PoET)

MODULE 3: BLOCKCHAIN-BASED FUTURES SYSTEM

Project presentation- Futures smart contract: Blockchain oracles- Web3j: Setting up the Web3J- Installing web3j- Wallet creation, Java client: The wrapper generator- Initializing web3j- Setting up Ethereum accounts- Deploying the contract.

MODULE 4: BLOCKCHAINS IN BUSINESS AND CREATING ICO

Public versus private and permissioned versus permission less blockchains- Privacy and anonymity in Ethereum- Why are privacy and anonymity important? - The Ethereum Enterprise Alliance- Blockchainas-a-Service- Initial Coin Offering (ICO): Project setup for ICO implementation- Token contracts- Token sale contracts-Contract security and testing the code.

DISTRIBUTED STORAGE IPFS AND SWARM

Ethereum Virtual Machine- Swarm and IPFS: Installing IPFS, Hosting our frontend: Serving your frontend using IFPS, Serving your frontend using Swarm, IPFS file uploader project: Project setup the web page

TEXT BOOKS

Imran Bashir, "Mastering Blockchain: Distributed Ledger Technology, decentralization, and smart contracts explained", 2nd

Edition, Packt Publishing Ltd, March 2018.

Bellaj Badr, Richard Horrocks, Xun (Brian) Wu, "Blockchain By Example: A developer's guide to creating decentralized

applications using Bitcoin, Ethereum, and Hyperledger", Packt Publishing Limited, 2018.

REFERENCE BOOKS

Andreas M. Antonopoulos , "Mastering Bitcoin: Unlocking Digital Cryptocurrencies", O'Reilly Media Inc, 2015

Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder, "Bitcoin and Cryptocurrency

Technologies: A Comprehensive Introduction", Princeton University Press, 2016.

E BOOKS

1. https://www.velmie.com/practical-blockchain-study

MOOC

1. https://www.udemy.com/course/build-your-blockchain-az/

OFFICE OF REGISTRAR
MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No. MU/RO/2019/2331-A **06th June 2019**

OFFICE ORDER

Sub: Reconstitution of Board of Studies for Department of Civil Engineering.

The Board of Studies for the Department of Civil Engineering is reconstituted as per rule 12 of the statutes of Mewar University, as under:

SN	Name	Designation	Post
1	Dr. Tanveer Ahmed Kazi	Professor & Dean, Faculty of Engg& Technology	Chairman
2	Mr. ShashivendraDulawat	Assistant Professor	Internal Member 1
3	Mr. Himanshu Kumar Sadhya	Assistant Professor	Internal Member 2
4	Prof. (Dr.) Manish Verma	Professor, CTAE, Udaipur	External Member
5	Mr. Mohd Nizamuddin Mansuri	Senior Engineer, BCE, Chanderia	Member from Industry
6	Mr. Tuphail Ahmad Bhat	PMGSY, J&k	Alumni Member
7	Dr. Esar Ahmad	Assistant Professor &HOD	Convener

The term of reference for the Board of Studies is as provided in rule 12 of the statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as a special invitee if it is that considered his/her association will contribute to the task of the meeting, with the approval of the President/Vice-Chancellor.

The Convener of the meeting is advised to hold a meeting of the BOS seeking the Convenience of the Chairman in the second week of June. The proceeding of the meeting may send to the VC/Registrar as early as possible.

The External Member shall be entitled to TA/DA and sitting charges as per the norms prescribed by Mewar University.

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:
1. PS to Hon'ble Chairman (for kind inf)
2. PS to Hon'ble President/Pro-President (for kind inf)
3. All concerned Deans/Directors/HoDs (for kind inf & Necessary action)
4. Accounts/Examination/Library/Store/Warden/Security/IT Head.
5. Coordinator, IQAC Cell.
6. Record File.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF CIVIL ENGINEERING

DATE: 10-06-2019

Minutes of Meeting of Board of Studies

Minutes of the 4th BOS of the Department of Civil Engineering meeting held on 10-06-2019 at 11.30 AM.

The following members were present: **(Annexure 1)**

SN	Name	Designation	Post
1	Dr. Tanveer Ahmed Kazi	Professor & Dean, Faculty of Engg& Technology	Chairman
2	Mr. ShashivendraDulawat	Assistant Professor	Internal Member 1
3	Mr. Himanshu Kumar Sadhya	Assistant Professor	Internal Member 2
4	Prof. (Dr.) Manish Verma	Professor, CTAE, Udaipur	External Member
5	Mr. Mohd Nizamuddin Mansuri	Senior Engineer, BCE, Chanderia	Member from Industry
6	Mr. Tuphail Ahmad Bhat	PMGSY, J&k	Alumni Member
7	Dr. Esar Ahmad	Assistant Professor &HOD	Convener

At the outset, Dr. Esar Ahmad, Head of the Department of Civil Engineering, warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 17-08-2018

Resolution: Minutes of the previous BOS of the Civil Engineering Department held on 17-08-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Dr. Esar Ahmad (Head, Civil Engineering) presented a departmental activity report mentioning all the activities conducted related to curricular development, research and development, faculty development and Industrial collaboration.

Agenda 3: Revision of Existing Programmes/ Courses

Resolution: The Committee reviewed the scheme and syllabus of B. Tech (Civil Engineering) and M. Tech Programme (Transportation Engineering and Structural Engineering) and approved the scheme and syllabus of B. Tech and M. Tech Programme

(Transportation Engineering and Structural Engineering) for the session 2019-20. **(Annexure 2)**

Agenda 4: Introduction of New Programmes/ Course

Resolution:

1. The BOS Committee introduced one new programme in M.Tech Constructional Technology and Management (CTM) and approved its scheme & syllabus, for the upcoming session 2019-20. **(Annexure 3)**

- Construction Technology & Management

2. The BOS Committee approved the syllabus of four new courses in B. Tech. Civil Engineering from session 2019-20 is mentioned below. **(Annexure 4)**

- Artificial Intelligence in Civil Engineering
- Elements of Earthquake Engineering
- Building Technology and Architectural Planning
- Green Buildings

3. The BOS Committee approved the syllabus of one new courses in M. Tech. Structural Engineering from session 2019-20 is mentioned below. **(Annexure 5)**

- Stability of Structures

Agenda 5: To recommend the approved syllabus to Academic Council

Resolution: Members of the Board of Studies approved the revised syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

MEWAR UNIVERSITY * Chittorgarh - 312901 (Raj.) * Mewar University Knowledge to Wisdom

Annexure 1: Attendance Sheet

SN	Name	Designation	Post	Signature
1	Dr. Tanveer Ahmed Kazi	Professor & Dean, Faculty of Engg & Technology	Chairman	10/6
2	Mr. ShashivendraDulawat	Assistant Professor	Internal Member 1	10/6/19
3	Mr. Himanshu Kumar Sadhya	Assistant Professor	Internal Member 2	10.6.19
4	Prof. (Dr.) Manish Verma	Professor, CTAE, Udaipur	External Member	10/6/19
5	Mr. Mohd Nizamuddin Mansuri	Senior Engineer, BCE, Chanderia	Member from Industry	10/06/19
6	Mr. Tuphail Ahmad Bhat	PMGSY, J&K	Alumni Member	10/6/19
7	Dr. Esar Ahmad	Assistant Professor & HOD	Convener	10/06/19

Esar

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Mewar University

Knowledge to Wisdom

Course Scheme and Syllabus of Master of Technology
CONSTRUCTION TECHNOLOGY & MANAGEMENT
Effective from 2019-2020

FACULTY OF ENGINEERING & TECHNOLOGY
MEWAR UNIIVERSITY, GANGRAR,
CHITTORGARH (RAJASTHAN)

MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)
Faculty of Engineering and Technology Two Year
M. Tech: Construction Technology & Management

Eligibility for Admission: A candidate for being eligible for admission to the Master of Technology in **Construction Technology & Management** in the faculty of engineering and technology should have passed B.Sc. (Engg.)/ B.Tech / B.E. / or any other equivalent degree in the relevant discipline / branch from any recognized Indian or foreign University.

A candidate should have at least 55% marks or equivalent CGPA in the qualifying examination (50% marks or equivalent CGPA for Scheduled Caste/Scheduled Tribes Candidates) on the basis of which the admission is being sought.

Overview of the Program: The normal duration of program shall be four Semesters The complete program comprises of 12 theory courses (10 Core and 02 elective) and 02 Labs also dissertation with one international paper published by the student with the help of chosen suitable supervisor according to the norms of the university. Student has to obtain at least D Grade to pass the examination (both internal and external examination separately) for all the courses specified in the scheme of the program. The degree will be awarded on the basis of cumulative marks obtained in all the four semesters and the division obtained will be as under:

MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)

First Semester — **Scheme of Two Year M Tech: Construction Technology & Management**

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /Lab Record	Teachers Evaluation		
CTM -611	Infrastructure Planning & Contract Management	4	-	4	30	10	60	100
CTM -612	Project Management in Construction	4	-	4	30	10	60	100
CTM -613	Construction Methods & Equipment Management	4	-	4	30	10	60	100
CTM -614	Urban Transportation Systems Planning	4	-	4	30	10	60	100
CTM - 615/616/617	Elective I	4	-	4	30	10	60	100
CTM -618	Construction Management Software lab		2	2	10	10	30	50
Total Semester Credits=				**22**	**Total Semester Marks=**			**550**

Second Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /Lab Record	Teachers Evaluation		
CTM -621	Infrastructural Economics & Finance	4	-	4	30	10	60	100
CTM -622	Corporate Law & Arbitration	4	-	4	30	10	60	100
CTM -623	Quality & Safety Management in Construction	4	-	4	30	10	60	100
CTM -624	Modern Construction Techniques	4	-	4	30	10	60	100
CTM - 625/626/627	Elective II	4	-	4	30	10	60	100
CTM -628	Advanced Pavement Engineering Lab		2	2	10	10	30	50
Total Semester Credits=				**22**	**Total Semester Marks=**			**550**

Third Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /Lab Record	Teachers Evaluation		
CTM -631	Construction Information System	4	-	4	30	10	60	100
CTM -632	Sustainable Design & Value Analysis	4	-	4	30	10	60	100
CTM -633	Seminar		6	6	-	-	150	150
CTM -634	Minor Project		8	8	-	-	200	200
Total Semester Credits=				**22**			**Total Semester Marks=**	**550**

Fourth Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Report	Teachers Evaluation		
CTM -641	Dissertation	-	16	16	50	-	350	400
Total Semester Credits=				**16**			**Total Semester Marks=**	**400**

LIST OF ELECTIVES

ELECTIVE I

1. CTM -615- Tender Contract & specification
2. CTM -616- Maintenance & Rehabilitation of Structures
3. CTM -617- Solid & Hazardous Waste Management
4. Public Private Partnership Concept in Construction

ELECTIVE II

1. CTM -625- Transportation Economics
2. CTM -626- Principles of affordable Housing
3. CTM -627- Building Services & Maintenance Management

LIST OF DEPARTMENTAL ELECTIVES (29)
CE-421/422/423/424

- Quantity Survey and Valuation
- Prestressed Concrete Structures
- Ground Improvement Techniques
- Solid and Hazardous Waste Management
- Hydro Power Engineering
- Optimization Techniques for Civil Engineering
- Bridge Engineering
- Highway & Airfield Pavement Design
- Sustainable Construction Method
- Energy-Efficient Building Design
- Geo-synthetics and Reinforced Soil Structures
- Building Information and Modeling
- Computational Hydraulics
- Elements of Earthquake Engineering
- Green Buildings
- Finite Element Methods
- Traffic Engineering
- Environmental Pollution Control
- Hydraulic Structures
- Retrofitting and Rehabilitation of Structures
- Machine Foundations
- Rock Mechanics
- Structural Dynamics and Seismic Design
- Probability Methods in Civil Engineering
- Structural Health Monitoring (SHM)
- Computational Methods in Civil Engineering
- Environmental Impact Assessment and Management
- Artificial Intelligence in Civil Engineering
- Building Technology and Architectural Planning

LIST OF OPEN ELECTIVES (12)
OE-431/432

- Operations Management
- Advanced Engineering Mathematics
- Entrepreneurship
- Soft Computing
- Artificial Intelligence
- Remote Sensing & GIS
- Renewable Energy Sources
- Consumer Electronics
- Security in Computing
- Modeling and Simulation
- Microprocessors and Microcontrollers
- Civil Engineering Estimating & Costing

B.TECH (7th SEMESTER) CIVIL ENGINEERING
CE-421/422/423/424 ARTIFICIAL INTELLIGENCE IN CIVIL ENGINEERING

L	T	P	Cr
3	1	-	4

Internal Evaluation: 50
Marks External Examination: 50
Marks Duration of Examination: 03 Hours

Course Objective:

Understand the fundamentals of artificial intelligence (AI) and its applications in civil engineering. Develop knowledge of machine learning algorithms and their relevance to civil engineering problems. Explore the use of AI techniques for data analysis, predictive modeling, and optimization in civil engineering. Gain proficiencyin programming languages and tools commonly used in AI applications in civil engineering. Acquire skills in data preprocessing, feature engineering, and data visualization for AI-based solutions in civil engineering. Understand the ethical and social implications of AI in civil engineering, including issues related to privacy, bias, and transparency.

UNIT – I	Introduction to Artificial Intelligence in Civil Engineering. Definition, history, and applications of AI in civil engineering AI tools and techniques relevant to civil engineering, Machine Learning Fundamentals Supervised, unsupervised, and reinforcement learning Regression, classification, clustering algorithms, Evaluation metrics and model selection Data Preprocessing and Feature Engineering, Data cleaning and normalization techniques Feature selection and dimensionality reduction Handling missing data and outliers.
UNIT – II	Predictive Modeling in Civil Engineering, Regression models for predicting structural behavior, material properties, etc. Classification models for fault detection, risk assessment, etc. Time series analysis and forecasting for traffic prediction environmental monitoring, etc. Optimization Techniques in Civil Engineering Genetic algorithms, particle swarm optimization, and other optimization methods Optimization of structural designs, resource allocation, project scheduling, etc.
UNIT –III	Data Visualization and Interpretability, Techniques for visualizing and interpreting AI models and results Communicating findings effectively to stakeholders Ethical and Social Implications of AI in Civil Engineering, Privacy, security, and legal considerations Bias, fairness, and transparency in AI applications Socioeconomic impacts and ethical guidelines Analysis of real-world EIA case studies from different sectors (e.g., infrastructure, energy, mining) Review of successful and problematic EIA practices Integration of environmental considerations into project decision-making
UNIT - IV	Programming Languages and Tools for AI in Civil Engineering: Python programming language and relevant libraries (e.g., Tensor Flow, scikit-learn) Data analysis and visualization tools (e.g., pandas, matplotlib) Software packages for civil engineering applications (e.g., Finite Element Analysis software) Project Work, Design and implementation of an AI-based solution for a civil engineering problem Analysis, evaluation, and presentation of project outcomes

References

- Artificial Intelligence and Civil Engineering" by William L. McGuire and M. L. Johnson
- Artificial Intelligence Applications in Civil Engineering" by Amir H. Alavi, Siamak Talatahari, and Shahram Mahmoudi
- "Artificial Intelligence in Civil Engineering: Developments and Applications" edited byQuan Gan and Yan Xing
- Machine Learning and Data Mining in Pattern Recognition: 13th International Conference,MLDM 2017" edited by Petra Perner

B.TECH (7th SEMESTER) CIVIL ENGINEERING
CE-421/422/423/424 ELEMENTS OF EARTHQUAKE ENGINEERING

L	T	P	Cr
3	1	-	4

Internal Evaluation: 50
Marks External Examination: 50
Marks Duration of Examination: 03 Hours

Course Objective:

Understand the fundamental concepts of earthquake engineering, including the causes and effects of earthquakes on structures and the environment. Analyze and interpret seismic hazard and ground motion data to assess the potential impact of earthquakes on structures. Apply engineering principles and techniques to design earthquake-resistant structures. Evaluate and select appropriate construction materials and techniques to enhance the seismic performance of structures. Perform structural analysis and design using earthquake loadings and response spectra. Implement seismic retrofitting measures to improve the performance of existing structures. Utilize computer-based tools and software for seismic analysis and design. Develop an understanding of the seismic design codes and regulations relevant to earthquake engineering. Assess and manage the risks associated with earthquakes and their impact on structures and communities. Communicate effectively with other professionals and stakeholders regarding earthquake engineering concepts, analysis, and design.

UNIT – I	Definition of earthquake engineering, Historical earthquakes and their impact ,Causes and effects of earthquakes ,Seismic hazard and risk assessment, Seismic waves and wave propagation, Seismic sources and fault mechanisms, Seismic monitoring and data collection, Ground motion analysis and prediction
UNIT – II	Types of seismic loads, Response spectrum analysis, Design response spectra, Time history analysis, Structural Dynamics, Single-degree-of-freedom systems, Multi-degree-of-freedom systems, Modal analysis, Damping in structures, Seismic Design Principles, Design philosophy and objectives, Strength and ductility requirements, Design for different soil conditions, Seismic design codes and regulations.
UNIT – III	Behavior and design of RC beams, columns, and walls, Ductile detailing requirements, Shear and torsional design considerations, Seismic design of foundations, Seismic Design of Steel Structures, Behavior and design of steel frames and connections, Ductile design principles, Seismic design of steel braced frames, Seismic design of steel moment frames, Seismic Design of Masonry and Timber Structures, Behavior and design of masonry structures, Reinforced masonry design principles, Seismic design of timber structures, Diaphragm and shear wall design considerations.
UNIT - IV	Introduction to retrofitting techniques, Strengthening of existing structures, Seismic isolation and energy dissipation systems, Case studies of successful retrofitting projects, Earthquake-Resistant Design of Non-structural Elements, Design of partitions, ceilings, and cladding systems, Equipment anchorage and bracing, Seismic design of utilities and services, Importance of architectural features in seismic design, Earthquake Risk Assessment and Management, Risk analysis and mitigation strategies, Emergency response planning, Post-earthquake damage assessment, Social and economic implications of earthquakes, Computer Applications in Earthquake Engineering, Introduction to seismic analysis software, Modeling and analysis of structures, Interpretation of analysis results, Design optimization and parametric studies.

References

- "Earthquake Engineering: From Engineering Seismology to Performance-Based Engineering" by Yousef Bozorgnia and Vitelmo V. Bertero
- "Fundamentals of Earthquake Engineering" by Amr S. Elnashai and Luigi Di Sarno
- Earthquake Resistant Design of Structures" by Pankaj Agarwal and Manish Shrikhande

B.TECH (7th SEMESTER) CIVIL ENGINEERING
CE-421/422/423/424 BUILDING TECHNOLOGY AND ARCHITECTURAL PLANNING

L	T	P	Cr
3	1	-	4

Internal Evaluation: 50
Marks External Examination: 50
Marks Duration of Examination: 03 Hours

Course Objective:

Understand the principles and concepts of building technology and architectural planning. Analyze and evaluate the functional requirements and design considerations for various building types. Apply architectural design principles to develop innovative and sustainable building solutions. Demonstrate knowledge of construction materials, techniques, and systems used in building construction. Understand the role of building codes, regulations, and standards in architectural planning. Use appropriate software tools for architectural design, drafting, and documentation. Communicate effectively with clients, contractors, and other stakeholders in the design and construction process. Collaborate with multidisciplinary teams to integrate building technology and architectural

UNIT – I	Definition and scope of building technology, Relationship between architecture and construction, Historical perspectives on building technology and architectural planning, Role of the architect in the design and construction process, Building Design Principles, Design considerations for site selection and analysis, Functional and aesthetic aspects of architectural design, Principles of space planning and circulation, Integration of natural and artificial lighting in design, Building Systems and Services, Structural systems and load-bearing elements, Building envelope and cladding systems, Mechanical, electrical, and plumbing (MEP) systems, Fire protection and life safety systems
UNIT – II	Properties and characteristics of common construction materials, Masonry construction techniques and systems, Concrete construction techniques and formwork systems, Steel and timber construction techniques, Sustainable Design and Green Building, Principles of sustainable design and environmental stewardship, Energy-efficient design strategies and passive solar techniques, Integration of renewable energy systems in buildings, Life cycle assessment and environmental impact analysis, Building Codes and Regulations, Overview of building codes and regulations, Compliance requirements for building design and construction, Accessibility and universal design considerations, Fire safety and egress requirements.
UNIT – III	Architectural drawing types and conventions, Use of computer-aided design (CAD) software for drafting, Construction drawings and specifications, Building information modeling (BIM) concepts and applications, Building Construction and Site Management, Construction sequencing and project management, Construction contracts and procurement methods, Quality control and assurance in construction, Site planning and logistics, Building Performance and Evaluation, Building performance assessment and post-occupancy evaluation, Indoor environmental quality and occupant comfort, Thermal performance and energy analysis of buildings, Acoustic and sound insulation considerations
UNIT - IV	Analysis of notable architectural projects, Study of innovative building technologies and systems, Examination of sustainable design practices, Integration of building technology and architectural planning in real-world scenarios, Professional Practice and Ethics, Role of the architect in society, Professional ethics and responsibilities, Architect-client relationship and communication, Legal and regulatory aspects of architectural practice, Emerging Trends in Building Technology and Architectural Planning, Introduction to new materials and construction techniques, Technological advancements in building systems, Innovations in sustainable design and smart buildings, Future directions in architectural planning and construction.

References

- "Building Construction Illustrated" by Francis D.K. Ching

- Architectural Graphic Standards" by The American Institute of Architects

B.TECH (7th SEMESTER) CIVIL ENGINEERING
CE-421/422/423/424 GREEN BUILDINGS

L	T	P	Cr
3	1	-	4

Internal Evaluation: 50
Marks External Examination: 50
Marks Duration of Examination: 03 Hours

Course Objective:

Understand the principles and concepts of green buildings and sustainable design. Analyze the environmental impact of buildings and identify opportunities for sustainable design. Apply strategies and techniques for energy-efficient building design and operation. Evaluate and select appropriate materials and technologies for sustainable construction. Incorporate passive design strategies to optimize natural lighting, ventilation, and thermal comfort. Implement water conservation measures and sustainable water management systems. Assess the environmental performance of buildings using rating systems and certifications. Integrate renewable energy sources and systems into building design. Consider life cycle assessment and sustainable construction practices in building projects.

UNIT – I	Definition and principles of green buildings, Environmental impact of buildings, Benefits of sustainable design, Green building rating systems and certification, Sustainable Site Planning and Design, Site selection and orientation considerations, Sustainable landscaping and site development, Storm water management and rainwater harvesting, Urban heat island mitigation strategies, Energy Efficiency in Buildings, Building energy consumption and demand, Building envelope design and insulation, Passive solar design and shading techniques, High-efficiency HVAC systems and controls
UNIT – II	Solar energy systems and technologies, Wind energy systems and considerations, Geothermal heating and cooling systems, Integration of renewable energy sources into building design, Water Conservation and Management, Water-efficient fixtures and appliances, Rainwater harvesting and gray water recycling, Efficient irrigation systems and landscaping, On-site wastewater treatment and reuse, Sustainable Materials and Construction, Selection of environmentally friendly materials, Green building certifications for materials, Construction waste management and recycling, Indoor air quality considerations
UNIT – III	Ventilation and natural airflow design, Daylighting and artificial lighting systems, Thermal comfort and occupant satisfaction, Indoor pollutant control and low VOC materials, Green Building Economics and Life Cycle Assessment, Cost analysis of green building features, Return on investment for sustainable design, Life cycle assessment and environmental impact analysis, Economic incentives and policies for green buildings, Green Building Case Studies, Analysis of successful green building projects, Lessons learned and best practices, Innovative green building designs and technologies, Global and regional green building trends.
UNIT - IV	Overview of green building regulations and standards, Compliance with energy and environmental codes, Building certification processes and documentation, Role of government agencies in promoting green buildings, Green Building Performance Monitoring and Optimization, Building energy management systems, Occupant engagement and behaviour, Monitoring and optimizing water use, Post-occupancy evaluation and performance tracking, Future Trends and Emerging Technologies in Green Buildings, Advances in energy-efficient technologies, Smart buildings and Internet of Things (IoT), Net-zero energy and carbon-neutral buildings, Innovations in sustainable construction practices.

References

- LEED v4 BD&C Exam Guide: A Must-Have for the LEED AP BD+C Exam"
- "Green Building: Principles and Practices in Residential Construction" by Abe Kruger and Carl Seville

LIST OF ELECTIVES

ELECTIVE - I

1.	SE-711	Advanced Concrete Technology
2.	SE-713	Pre Stressed Concrete Structure
3.	SE-715	Masonry structures
4.	SE-717	Sustainable materials and construction
5.	SE-719	Stability of Structures

ELECTIVE - II

1.	SE-721	Stability Theory And Structural analysis
2.	SE-723	Soil Structure Interaction
3.	SE-725	Maintenance and Rehabilitation of Structures
4.	SE-727	Design of Offshore structures

ELECTIVE - III

1.	SE-712	Reliability based structural design
2.	SE-714	Design of Tall Building
3.	SE-716	Wind Resistance Design of Structures
4.	SE-718	Advanced Foundation Engineering

ELECTIVE - IV

1.	SE-722	Artificial Intelligence in Structural Engineering Applications
2.	SE-724	Fracture and Fatigue Mechanics
3.	SE-726	Advanced Numerical Methods
4.	SE-728	Evaluation and Retrofitting of Buildings

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

MEWAR UNIVERSITY
Department of Civil Engineering

M TECH: STRUCTURAL ENGINEERING
STABILITY OF STRUCTURES

UNIT – I

Beam Columns: Differential equations for beam columns- beam columns with concentrated loads – continuous lateral loads-couples- beam columns with built in ends – continuous beams with axial load – application of trigonometrically series – Effects of initial curvature on deflections – Determination of allowable stresses.

UNIT - II

Elastic Buckling of bars and frames: Elastic Buckling of straight columns – Effect of shear stress on buckling – Eccentrically and laterally loaded columns- Buckling of frames-large deflections of buckled bars-Energy methods- Buckling of bars on elastic foundations- Buckle line of bar with intermediate compressive forces - Buckling of bars with change in cross-section – Effect of shear force on critical load- built up columns.

UNIT - III

In Elastic Buckling: Buckle line of straight bar- Double modulus theory – Tangent modulus theory, Inelastic lateral Buckling. Experiments and design formulae: Experiments on columns – Critical stress diagram – Empirical formulae for design – various end conditions.

UNIT - IV

Torsion Buckling: Pure torsion of thin walled bars of open cross section – Non-uniform torsion of thin walled bars of open cross section- Torsional buckling – Buckling by torsion and flexure.

UNIT – V

Lateral buckling of simply supported Beams: Beams of Rectangular cross-section subjected to pure bending. Buckling of simply supported Rectangular plates: Derivation of equation of plate subjected to constant compression in one and two directions.

Reference Books:

1. Theory of elastic Stability by Timshenko & Gere-Mc Graw Hill
2. Stability of metallic structures by Blunch- Mc Graw Hill
3. Theory of Beam- Columns Vol I by Chem. & Atste Mc. Graw Hill

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

OFFICE OF REGISTRAR
MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No. MU/RO/2019/2364-A **29th March, 2019**

OFFICE ORDER

Sub: Reconstitution of Board of Studies for Department of Mechanical Engineering.

The Board of Studies for the Department of Mechanical Engineering is reconstituted as per rule 12 of the statutes of Mewar University, as under:

SN	Name	Designation	Post
1	Dr. Tanveer Ahmed Kazi	Professor & Dean, Faculty of Engg& Technology	Chairman
2	Mr. Kapil Nahar	Assistant Professor & HOD	HOD-Convener
3	Dr. Rakesh Bandhari	Professor & Dean Research Sangam University, Bhilwara	External Member
4	Mr. Upeesh Jain	Sr. Engineer, Jindal Saw Limited, Bhilwara	Member from Industry
5	Dr. Rahul Lodha	Associate Professor	Internal Member 1
6	Mr. Dinesh Kumar	Assistant Professor	Internal Member 1
7	Mr. Sunil Kumar Katheria	Assistant Professor	Internal Member 2
8	Mr. Chandersh Singh	Suncity Steel Pvt Ltd, Jodhpur	Alumni Member

The term of reference for the Board of Studies are as provide in rule 12 of the statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as special invitee if it is that considered his/her association will contribute in the task of the meeting, with the approval of the President/Vice Chancellor.

The Convener of the meeting is advised to hold meeting of the BOS seeking Convenience of the Chairman. The proceeding of the meeting may send to the VC/Registrar as early as possible.

The External Member shall be entitled for TA/DA and sitting charges as per the norms prescribed by the Mewar University.

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

1. PS to Hon'ble Chairman (for kind inf)
2. PS to Hon'ble President/Pro-President (for kind inf)
3. All concerned Deans/Directors/HoD's (for kind inf & Necessary action)
4. Accounts/Examination/Library/Store/Warden/Security/IT Head.
5. Coordinator, IQAC Cell.
6. Record File.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF MECHANICAL ENGINEERING

DATE: 06-06-2019

Minutes of Meeting of Board of Studies

Minutes of the BOS of the Department of Mechanical Engineering meeting held on 06-06-2019 at 11.30 AM.

The following members were present: **(Annexure 1)**

SN	Name	Designation	Post
1	Dr. Tanveer Ahmed Kazi	Professor & Dean, Faculty of Engg& Technology	Chairman
2	Mr. Kapil Nahar	Assistant Professor & HOD	HOD-Convener
3	Dr. Rakesh Bandhari	Professor & Dean Research Sangam University, Bhilwara	External Member
4	Mr. Upeesh Jain	Sr. Engineer, Jindal Saw Limited, Bhilwara	Member from Industry
5	Dr. Rahul Lodha	Associate Professor	Internal Member 1
6	Mr. Dinesh Kumar	Assistant Professor	Internal Member 1
7	Mr. Sunil Kumar Katheria	Assistant Professor	Internal Member 2
8	Mr. Chandersh Singh	Suncity Steel Pvt Ltd, Jodhpur	Alumni Member

At the outset, Mr. Kapil Nahar (Head, Department of Mechanical Engineering) warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 08-06-2018

Resolution: Minutes of the previous BOS of the Mechanical Engineering Department held on 08-06-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Mr. Kapil Nahar (Head, Mechanical Engineering) presented a departmental activity report mentioning all the activities conducted related to curricular development, research and development, faculty development and Industrial collaboration.

6/6/19

MEWAR UNIVERSITY * Chittorgarh - 312901 (Raj.) *

Agenda 3: Revision of Existing Programmes/ Courses

Resolution: The Committee reviewed the scheme and syllabus of B. Tech (Mechanical Engineering) and M. Tech Programme and approved the scheme and syllabus of B. Tech and M. Tech Programme for the session 2019-20.

Agenda 4: Introduction of New Programmes/ Course

Resolution:

1. As per suggestions received from the members of the previous BOS committee, four new courses were introduced in the B.Tech Mechanical Engineering for the upcoming session 2019-20 as follows. The detailed syllabus is attached as **Annexure 2.**
    - Biomedical Engineering
    - Structural Analysis and Design
    - Human Factors Engineering
    - Nanotechnology and Nanomaterials
2. As per suggestions received from the members of the previous BOS committee, one new course was introduced in the M. Tech. Manufacturing System Engineering for the upcoming session 2019-20 is as follows. The detailed syllabus is attached as **Annexure 3.**

- Advanced Materials in Manufacturing

3. As per suggestions received from the members of the previous BOS committee, one new course was introduced in the M. Tech. Thermal Engineering for the upcoming session 2019-20 is as follows. The detailed syllabus is attached as **Annexure 3.**

- Energy Storage and Conversion

4. As per the recommendation of expert members, it is decided that a new programme M.Tech Production Engineering started in the upcoming session. The detailed syllabus and scheme are enclosed as **Annexure 4.**

Agenda 5: Any other suggestions by the BOS committee

Resolution:

- The BOS Committee suggested the inclusion of the non-credited course in the future.
- As per the recommendation of the expert, it is decided to start M.Tech Production in the upcoming academic session.

Agenda 6: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the revised syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

Annexure 1: Attendance Sheet

SN	Name	Designation	Post	Signature
1	Dr. Tanveer Ahmed Kazi	Professor & Dean, Faculty of Engg& Technology	Chairman	
2	Mr. Kapil Nahar	Assistant Professor & HOD	HOD-Convener	
3	Dr. Rakesh Bandhari	Professor & Dean Research Sangam University, Bhilwara	External Member	
4	Mr. Upeesh Jain	Sr. Engineer, Jindal Saw Limited, Bhilwara	Member from Industry	
5	Dr. Rahul Lodha	Associate Professor	Internal Member 1	
6	Mr. Dinesh Kumar	Assistant Professor	Internal Member 2	
7	Mr. Sunil Kumar Katheria	Assistant Professor	Internal Member 3	
8	Mr. Chandersh Singh	Suncity Steel Pvt Ltd, Jodhpur	Alumni Member	

Biomedical Engineering

Unit 1: Introduction to Biomedical Engineering Principles and Applications
Overview of biomedical engineering: Introduction to the field, its interdisciplinary nature, and its role in healthcare.
Biomedical engineering principles: Understanding the application of engineering principles to solve healthcare challenges, including diagnostics, therapeutics, and rehabilitation.
Biomedical engineering in research and development: Exploring the role of biomedical engineers in developing new technologies and improving existing medical practices.

Unit 2: Biomedical Instrumentation and Medical Imaging
Biomedical sensors and measurements: Understanding the design and use of sensors for monitoring physiological parameters.
Medical imaging techniques: Introduction to various imaging modalities, such as X-ray, computed tomography (CT), magnetic resonance imaging (MRI), and ultrasound.
Image processing and analysis: Exploring techniques for enhancing and extracting information from medical images.

Unit 3: Biomaterials and Tissue Engineering
Biomaterials: Understanding the properties, selection, and design of materials used in medical devices, implants, and tissue scaffolds.
Biocompatibility and tissue response: Examining the interaction of biomaterials with living tissues and the body's response to implants.
Tissue engineering and regenerative medicine: Exploring strategies for creating functional tissues and organs using biomaterials, cells, and bioactive molecules.

Unit 4: Biomechanics and Rehabilitation Engineering
Biomechanics: Understanding the application of mechanical principles to study the mechanics of biological systems, such as muscles, bones, and joints.
Prosthetics and orthotics: Exploring the design and development of artificial limbs and supportive devices to enhance mobility and function.
Assistive technologies: Introduction to devices and technologies that aid individuals with disabilities in daily living activities and rehabilitation.

Unit 5: Medical Device Regulations and Ethical Considerations
Regulatory landscape in medical devices: Understanding the approval processes, standards, and regulations governing the development and commercialization of medical devices.
Quality management systems: Exploring quality assurance and control measures in the design, manufacturing, and distribution of medical devices.
Ethical considerations in biomedical engineering: Discussing ethical challenges related to patient safety, privacy, informed consent, and the responsible use of technolo[illegible]lthcare.

Structural Analysis and Design

Unit 1: Introduction to Structural Engineering Principles

Overview of structural engineering: Introduction to the field, its importance in the construction industry, and its role in ensuring safety and stability.

Structural elements and systems: Understanding the basic components of structures and their interactions.

Structural loads: Identifying and quantifying various types of loads acting on structures, including dead loads, live loads, wind loads, and seismic loads.

Unit 2: Structural Analysis Methods

Statics: Introduction to static equilibrium and the analysis of forces and moments in structures.

Dynamics: Exploring dynamic forces and their effects on structures, including vibrations and resonance.

Finite Element Analysis (FEA): Understanding the principles and applications of FEA for solving complex structural problems.

Unit 3: Design of Structural Elements

Design considerations: Factors influencing the design process, including material properties, safety factors, and serviceability requirements.

Beams and columns: Design principles for beams and columns, including sizing, load capacity, and selection of appropriate materials.

Trusses: Introduction to the analysis and design of truss structures, including determining member forces and evaluating stability.

Unit 4: Structural Stability and Load-Bearing Capacity

Structural stability: Understanding the concept of stability and its importance in preventing structural failure, including buckling and overturning.

Load-bearing capacity: Determining the maximum load that a structure or structural element can withstand while ensuring safety and performance.

Unit 5: Structural Design Codes and Standards

Building codes and regulations: Understanding the role of local building codes and regulations in guiding structural design practices.

Structural design standards: Familiarizing with internationally recognized design standards and guidelines, such as the American Concrete Institute (ACI) and the American Institute of Steel Construction (AISC).

Design optimization: Exploring strategies to optimize structural designs for factors such as material usage, cost, and environmental impact, while meeting design code requirements.

Human Factors Engineering

Unit 1: Human-Centered Design Principles

Introduction to human factors engineering: Understanding the role of human factors in the design and development of systems, products, and interfaces.

User-centered design: Incorporating user needs, preferences, and limitations throughout the design process.

Design thinking: Applying iterative and user-focused approaches to problem-solving and innovation.

Unit 2: Human-Computer Interaction and Usability Engineering

Interaction design: Principles and techniques for designing intuitive and user-friendly interfaces.

Usability testing: Conducting empirical evaluations to assess the ease of use, efficiency, and satisfaction of interactive systems.

User interface design guidelines: Understanding best practices for designing interfaces that promote efficiency, effectiveness, and user satisfaction.

Unit 3: Ergonomics and Workplace Design

Physical ergonomics: Designing workspaces, tools, and equipment to optimize comfort, safety, and efficiency.

Anthropometry and biomechanics: Applying knowledge of human body dimensions and movement capabilities to design tasks and equipment.

Environmental factors: Considering lighting, noise, temperature, and other environmental factors that affect human performance and well-being.

Unit 4: Cognitive Engineering and Decision-Making

Cognitive workload and performance: Understanding human cognitive capabilities, limitations, and factors that influence mental workload.

Situation awareness: Designing systems and interfaces to enhance operators' perception and understanding of their environment.

Decision-making and automation: Considering how automation affects human decision-making processes and the design of interfaces that support effective decision-making.

Unit 5: User Experience Research and Evaluation Methods

User research techniques: Conducting user interviews, surveys, and observations to understand user needs, goals, and preferences.

User experience evaluation: Applying methods such as usability testing, heuristic evaluation, and user feedback analysis to assess the overall user experience.

Iterative design and continuous improvement: Incorporating user feedback and data-driven insights to refine and enhance the user experience over time.

Nanotechnology and Nanomaterials

Unit 1: Properties and Behavior of Nanomaterials
Introduction to nanomaterials: Understanding the unique properties and behavior of materials at the nanoscale.
Size-dependent properties: Exploring how the properties of nanomaterials, such as optical, magnetic, and mechanical properties, change as their size decreases.
Surface phenomena: Understanding the significant role of surface effects and surface-to-volume ratio in nanomaterial behavior.

Unit 2: Nanoscale Characterization Techniques
Nanoscale imaging techniques: Introduction to imaging techniques such as scanning electron microscopy (SEM), transmission electron microscopy (TEM), and atomic force microscopy (AFM) used to visualize and analyze nanomaterials.
Spectroscopic techniques: Understanding the use of techniques such as X-ray spectroscopy, Raman spectroscopy, and Fourier-transform infrared (FTIR) spectroscopy for characterizing nanomaterials.

Unit 3: Applications of Nanotechnology in Electronics, Medicine, and Energy
Nanoelectronics: Exploring the use of nanomaterials in electronic devices, such as nanoscale transistors and memory devices.
Nanomedicine: Understanding the application of nanotechnology in medical diagnostics, drug delivery systems, and tissue engineering.
Nanotechnology in energy: Exploring the use of nanomaterials for efficient energy generation, storage, and conversion, such as solar cells and batteries.

Unit 4: Nanofabrication Methods and Nanodevices
Bottom-up fabrication methods: Understanding techniques such as chemical synthesis, self-assembly, and molecular beam epitaxy for constructing nanomaterials and nanostructures.
Top-down fabrication methods: Exploring techniques like electron beam lithography, nanoimprint lithography, and focused ion beam (FIB) for shaping and patterning nanomaterials.
Nanodevices: Introduction to nanoscale devices, such as nanosensors, nanogenerators, and nanoelectromechanical systems (NEMS), and their applications.

Unit 5: Environmental and Safety Considerations of Nanotechnology
Environmental impact assessment: Understanding the potential environmental implications of nanomaterials and nanotechnology processes, including their release and behavior in the environment.
Health and safety considerations: Exploring the potential risks associated with exposure to nanomaterials and the development of appropriate safety protocols.
Regulatory aspects: Familiarizing with regulations and guidelines for the safe handling, manufacturing, and disposal of nanomaterials.

MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)

Faculty of Engineering and Technology

Two – Year M Tech: Production Engineering

Eligibility for Admission: A candidate for being eligible for admission to the Master of Technology in Production Engineering in the faculty of engineering and technology should have passed B.Sc. (Engg.)/ B.Tech/ B.E. / or any other equivalent degree in the relevant discipline / branch from any recognized Indian or foreign University.

A candidate should have at least 55% marks or equivalent CGPA in the qualifying examination (50% marks or equivalent CGPA for Scheduled Caste/Scheduled Tribes Candidates) on the basis of which the admission is being sought.

Overview of the Programme: The normal duration of programme shall be four Semesters The complete programme comprises of 12 theory courses (10 Core and 02 elective) and 02 Labs also dissertation with one international paper published by the student with the help of chosen suitable supervisor according to the norms of the university. Student has to obtain at least D Grade to pass the examination (both internal and external examination separately) for all the courses specified in the scheme of the programme. The degree will be awarded on the basis of cumulative marks obtained in all the four semesters and the division obtained will be as under:

MEWAR UNIVERSITY CHITTORGARH (RAJASTHAN)
Scheme of Two – Year M Tech: Production Engineering

First Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /Lab Record	Teacher's Evaluation		
PE-411	Theory Of Metal Cutting	4	-	4	30	10	60	100
PE -412	Quatitative Techniques in Decision Making	4	-	4	30	10	60	100
PE -413	Theory of Metal Forming	4	-	4	30	10	60	100
PE -414	Industrial Robotics	4	-	4	30	10	60	100
PE - 511/512/513	Elective – I	4	-	4	30	10	60	100
PE -415	Theory Of Metal Cutting		2	2	10	10	30	50
Total Semester Credits=				**22**			**Total Semester Marks=**	**550**

Second Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /Lab Record	Teacher's Evaluation		
PE -421	Advanced Joining Processes	4	-	4	30	10	60	100
PE -422	Product Data Management	4	-	4	30	10	60	100
PE -423	Finite Element Method	4	-	4	30	10	60	100
PE -424	Tool Design	4	-	4	30	10	60	100
PE - 521/522/523	Elective – II	4	-	4	30	10	60	100
PE -425	Computer Integrated Manufacturing & Automation		2	2	10	10	30	50
Total Semester Credits=				**22**			**Total Semester Marks=**	**550**

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Third Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Assignments /Lab Record	Teacher's Evaluation		
PE -431	Computer Integrated Manufacturing Systems	4	-	4	30	10	60	100
PE -432	Production Planning and Control	4	-	4	30	10	60	100
PE -433	Seminar		6	6	-	-	150	150
PE -434	Minor Project		8	8	-	-	200	200
	Total Semester Credits=			**22**			**Total Semester Marks=**	**550**

Fourth Semester

Course Code	Course Title	Contact Hours Per Week		Credit Hours	Internal Assessment/Examination		External Examination /Viva-Voce	Total Marks
		L	P		Report	Teacher's Evaluation		
PE -441	Dissertation	-	16	16	50	-	350	400
	Total Semester Credits=			**16**			**Total Semester Marks=**	**400**

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

LIST OF ELECTIVES

ELECTIVE – I

1 PE -511- Materials Management

2. PE -512- Quality and Reliability Engineering

3. PE -513- Surface Treatment And Finishing

ELECTIVE – II

1. PE -521- Smart Materials And Structure

2. PE -522- Financial Management

3. PE -523 – Maintenance Engineering & Management

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Advanced Materials in Manufacturing

Unit 1: Advanced Materials Properties and Characterization
Introduction to advanced materials and their unique properties.
Techniques for characterizing and analyzing advanced materials, such as microscopy, spectroscopy, and mechanical testing.
Understanding the structure-property relationships in advanced materials.

Unit 2: Composite Materials and Manufacturing Processes
Types of composite materials and their characteristics. Manufacturing processes for composite materials, including lay-up, filament winding, and resin infusion. Design considerations and challenges in composite materials manufacturing.

Unit 3: Smart Materials and Their Applications in Manufacturing
Overview of smart materials, such as shape memory alloys, piezoelectric materials, and smart polymers. Applications of smart materials in manufacturing, including sensing, actuation, and control systems. Integration of smart materials into manufacturing processes and products.

Unit 4: Materials Selection for Specific Manufacturing Processes
Factors influencing materials selection in different manufacturing processes, such as casting, machining, and additive manufacturing. Considerations for material properties, cost, availability, and sustainability in materials selection. Case studies and examples of materials selection in various manufacturing industries.

Unit 5: Materials Testing and Quality Assurance
Techniques for testing and evaluating the mechanical, thermal, and chemical properties of advanced materials. Quality assurance methods in manufacturing processes to ensure material performance and reliability. Statistical process control and inspection techniques for monitoring and improving material quality.

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Energy Storage and Conversion

Unit 1: Advanced Energy Storage Technologies
In-depth study of battery technologies, including lithium-ion, solid-state, and flow batteries.
Exploration of fuel cell technologies, such as proton exchange membrane fuel cells (PEMFC) and solid oxide fuel cells (SOFC).
Analysis of thermal energy storage systems, including phase change materials and thermal storage technologies.

Unit 2: Energy Conversion and Storage Materials
Examination of materials used in energy storage and conversion, such as electrode materials in batteries and catalysts in fuel cells.
Investigation of advanced materials for improved energy storage capacity, efficiency, and longevity.
Characterization techniques to assess the performance and properties of energy storage materials.

Unit 3: Integration of Energy Storage Systems in Power Grids
Strategies for integrating energy storage systems into existing power grids.
Grid-scale energy storage technologies and their applications.
Analysis of the impact of energy storage on grid stability, reliability, and renewable energy integration.

Unit 4: Energy Management and Control Strategies for Storage Systems
Energy management strategies for optimal utilization of energy storage systems.
Control algorithms and algorithms for state-of-charge estimation and control.
Demand response programs and load shifting strategies using energy storage.

Unit 5: Thermal Energy Storage for Load Shifting and Demand Response
Principles and applications of thermal energy storage (TES) systems.
Various TES technologies, including sensible heat, latent heat, and thermochemical storage.
Use of TES for load shifting, demand response, and waste heat recovery.

MEWAR UNIVERSITY

OFFICE OF THE REGISTRAR

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019/2015-A **18th March 2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Paramedical Science.

The Board of Studies for the Department of Paramedical Science is reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1) Prof. (Dr.) C.K. Sharma, Dean, Faculty of Health Science - Chairman
2) Dr. K.C. Jain, Radiologist - External Member
3) Ms. Shanti Nath, Assistant Professor - Internal Member
4) Dr. S.L. Mundra, Senior Medical Officer - Internal Member
5) Mr. Mukesh Kumar, Assistant Professor - Internal Member
6) Mr. Shiraz Ahmad Mir - Alumni
7) Mrs. Jaya Bharti, Head & Assistant Professor - Convener

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as special invitee if it is considered his association will contribute in the task of the meeting with the approval of the President/Vice Chancellor.

The Convener of the Meeting is advised to hold the meeting of the BOS seeking convenience of the Chairman in the first week of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.

The External Members shall be entitled for TA/DA and sitting fees as per the norms prescribed by the Mewar University.

Registrar

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

- PS to Hon'ble Chairperson (for kind information)
- PS to Hon'ble President (for kind information)
- PS to Hon'ble Pro-President (for kind information)
- All concerned Deans/Directors/HoD's (for kind information & necessary action)
- Accounts/Examination/Library/Store/Warden/Security/IT Head.
- Coordinator, IQAC Cell.
- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF PARAMEDICAL SCIENCES

DATE: 07.06.2019

Minutes of Meeting of Board of Studies

The Board of Studies meeting of the Department of Paramedical was held on 07th June 2019 in Room No. 135 at 11:00 am onwards to approve the new curriculum and syllabus for session 2019-20.

The following members were present: **(Annexure 1)**

1) Prof. (Dr.) C.K. Sharma, Dean, Faculty of Health Science - Chairman
2) Dr. K.C. Jain, Radiologist - External Member
3) Ms. Shanti Nath, Assistant Professor - Internal Member
4) Dr. S.L. Mundra, Senior Medical Officer - Internal Member
5) Mr. Mukesh Kumar, Assistant Professor - Internal Member
6) Mr. Shiraz Ahmad Mir - Alumni
7) Mrs. Jaya Bharti, Head & Assistant Professor - Convener

Mrs. Jaya Bharti (Head, Department of Paramedical) warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 06-06-2018

Resolution: Minutes of the previous BOS of the Paramedical Department held on 06-06-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Mrs. Jaya Bharti (Head, Department of Paramedical) presented a departmental activity report mentioning all the activities conducted related to curricular development, research development, faculty development and Industrial collaboration.

Agenda 3: Reviewof Existing Programmes/Courses

Resolution: The Committee reviewed and approved the scheme and syllabus of courses for BMLT, B.Sc Cardiac Care, M.Sc MLT and BRITfor the upcoming session from 2019-20.**(Annexure 2)**

Agenda 4: Any other suggestions by BOS Committee

Resolution:

- External member of BOS committee suggested some reference books for running and new courses should be add in next session.
- As per the suggestions received from External member of BOS, it is decided that there should be a hospital facility for students which can provide practical exposure to the students.

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

Agenda 5: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF PARAMEDICAL SCIENCES

DATE: 07.06.2019

Annexure 1: Attendance Sheet

S.NO.	Name& Designation	Designation in BOS	Signature
1	Prof. (Dr.) C.K. Sharma, Dean	Chairman	7/6/19
2	Dr. K.C. Jain, Radiologist	External Member	7/6/2019
3	Mr. Mukesh Kumar	InternalMember	7/6/2019
4	Ms. Shanti Nath	Internal Member	7-6-19
5	Dr. S.L. Mundra, Senior Medical Officer	Internal Member	7/6/19
6	Mr. Shiraz Ahmad Mir	Alumni	7/6/19
7	Mrs. Jaya Bharti, Head & Assistant professor	Convener	7/6/2019

OFFICE OF THE REGISTRAR

MEWAR UNIVERSITY, GANGRAR (CHITTORGARH) RAJASTHAN

Ref. No.: MU/RO/2019/27/6-A **17th May 2019**

OFFICE ORDER

Sub: Reconstitution of Board of Studies for Department of Physiotherapy

The Board of Studies for the Department of Physiotherapy is reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1) Prof. (Dr.) C.K Sharma Dean, Faculty of Paramedical Science's	- Chairman
2) Ms. Jaya Bharti H.O.D of Paramedical Asst. Professor,	- Internal Member
3) Dr. Ajeet Kumar Saharan, Principal, Jaipur Physiotherapy College	- External Member
4) Dr. Shekhar Singh, Assistant Professor, Jaipur Physiotherapy College	- External Member
5) Ms. Shanti Nath Assistant Professor	- Internal Member
6) Dr. Sandeep Vaishnav, Head & Assistant Professor	- Convener

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.

The Chairman of the Board of Studies may associate any member in the meeting as special invitee if it is considered his association will be contribute in the task of the meeting, with the approval of President/ Vice-Chancellor.

The Convener of the Meeting is advised to hold the meeting of BOS seeking convenience of the Chairman on second week of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.

The External Members shall be entitled for TA/DA and sitting fees as per the norms prescribed by the Mewar University.

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

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- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF PHYSIOTHERAPY

DATE: 10th June 2019

Minutes of Meeting of Board of Studies

Minutes of the BOS of the Department of Physiotherapy meeting held on 10-06-2019 at 11.30 AM in room no. 135.

The following members were present: **(Annexure 1)**

1) Prof. (Dr.) C.K Sharma Dean, Faculty of Paramedical Science's - Chairman
2) Ms. Jaya Bharti H.O.D of Paramedical Asst. Professor, - Internal Member
3) Dr. Ajeet Kumar Saharan, Principal, Jaipur Physiotherapy College - External Member
4) Dr. Shekhar Singh, Assistant Professor, Jaipur Physiotherapy College - External Member
5) Ms. Shanti Nath Assistant Professor - Internal Member
6) Dr. Sandeep Vaishnav, Head & Assistant Professor - Convener

Dr. Sandeep Vaishnav (Head, Department of Physiotherapy) warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 13-09-2018

Resolution: Minutes of the previous BOS of the Physiotherapy Department held on 13-09-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Dr. Sandeep Vaishnav (Head of the Physiotherapy department) presented a departmental activity report mentioning all the activities conducted related to curricular development, research and development, faculty development and Industrial collaboration.

Agenda 3: Review of Existing Programmes/Courses

Resolution: The Committee reviewed the scheme and syllabus of BPT and approved it without any change for the session 2019-20.

MEWAR UNIVERSITY Chittorgarh - 312901 (Raj.)

Agenda 4: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF PHYSIOTHERAPY

DATE: 10 June 2019

Annexure 1: Attendance Sheet

S.NO.	Name & Designation	Designation in BOS	Signature
1	Dr C.K Sharma Dean (Faculty of Paramedical Science's)	Chairman	10/6/19
2	Dr. Ajeet Kumar Saharan (Principal, Jaipur Physiotherapy College)	External Member	10/6/19
3	Dr. Shekhar Singh (Asst. Professor, Jaipur Physiotherapy College)	External Member	
4	Ms. Jaya Bharti (H.O.D)of Paramedical Asst. Professor	Internal Member	10/6/19
6	Ms. Shanti Nath Asst. Professor	Convener Internal Member	
6	Dr. Sandeep Vaishnav (H.O.D)	Convener	

Suggestions by External Expert 1

Suggestions by External Expert 2

OFFICE OF THE REGISTRAR

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019/2332-B **7th June 2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Physics

The Board of Studies for the Department of Physics reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1. Prof. (Dr.) C. K. Sharma, Dean, Faculty of Science & Technology - Chairman
2. Prof. R K Paliwal, Retd. Professor, MLV Govt. College Bhilwara - External Member
3. Ms. Madhuri Jariya, Assistant Professor - Internal Member
4. Dr. Pramod Mehta, Assistant Professor - Internal Member
5. Mr. Narayan lal - Alumni
6. Dr. Gulzar Ahmed, Head & Associate Professor -Convener

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as special invitee if it is considered his association will contribute in the task of the meeting with the approval of the President/Vice Chancellor.

The Convener of the Meeting is advised to hold the meeting of the BOS seeking convenience of the Chairman in the month of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.

The External Members shall be entitled for TA/DA and sitting fees as per the norms prescribed by the Mewar University.

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

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- PS to Hon'ble Pro-President (for kind information)
- All concerned Deans/Directors/HoD's (for kind information & necessary action)
- Accounts/Examination/Library/Store/Warden/Security/IT Head.
- Coordinator, IQAC Cell.
- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF PHYSICS

DATE: 14.06.2019

Minutes of Meeting of Board of Studies

The Board of Studies meeting of the Department of Physics under the Faculty of Science and Technology was held on 14th June 2019 in Room No. 135 at 10:00 am onwards to approve the new curriculum and Syllabus for session 2019-20.

The following members were present: **(Annexure 1)**

1. Prof. (Dr.) C. K. Sharma, Dean, Faculty of Science & Technology - Chairman
2. Prof. R K Paliwal, Retd. Professor, MLV Govt. College Bhilwara - External Member
3. Ms. Madhuri Jariya, Assistant Professor - Internal Member
4. Dr. Pramod Mehta, Assistant Professor - Internal Member
5. Mr. Narayan lal - Alumni
6. Dr. Gulzar Ahmed, Head & Associate Professor -Convener

Dr. Gulzar Ahmed, (Head of the Physics Department) warmly welcomed all the board members.

Agenda 1: To approve minutes of the previous BOS, held on 18-06-2018

Resolution: Minutes of the previous BOS of the Physics department held on 18-06-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Dr. Gulzar Ahmed, (Head, Physics Department) presented a departmental activity report mentioning all the activities conducted related to curricular development, research development and faculty development.

Agenda 3: Review and approval of Existing Programmes/ Courses

Resolution: The BOS discussed the item of review of syllabus and approved the reviewed syllabus of P.G. programmes.

Agenda 4: Any other suggestions by BOS Committee

Resolution: The members authorized the Chairman and Head of the Dept. for the panel of examiners for practical/theory exams.

Agenda 5: To recommend the approved syllabus to Academic Council

Resolution: Members of the Board of Studies approved the revised syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF PHYSICS

DATE: 14.06.2019

Annexure 1: Attendance Sheet

S.NO.	Name & Designation	Designation in BOS	Signature
1	Prof. (Dr.) C. K. Sharma, Dean, Faculty of Science & Technology	Chairman	14/6/19
2	Prof. R K Paliwal, Retd. Professor, MLV Govt. College Bhilwara	External Member	14/6/19
3	Dr. Pramod Mehta, Assistant Professor.	Internal Member	
4	Ms. Madhuri Jariya Assistant Professor, Physics.	Internal Member	
5	Mr. Deepak Suthar	Alumni	Deepak
6	Dr. Gulzar Ahmed Head & Associate Profeesor	Convener	14/6/2019
		Special Invitee (if any)	

OFFICE OF THE REGISTRAR
MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019-20/ 2357-C **10th June 2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Law

The Board of Studies for the Department of Lawis reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1) Prof. (Dr.) P.S. Varshney, Dean, Faculty of Legal Studies - Chairman
2) Prof. (Dr.) J.L. Purohit, Professor & Head - Convener
3) Mr. Amit Dadhich, Assistant Professor - Internal Member
4) Mr. Zakiyyu Muhammad, Assistant Professor - Internal Member
5) Mr. Shirish Kumar Shukla, Assistant Professor - Internal Member
6) Ms. Lavina Chaplot, Assistant Professor - Internal Member
7) Dr. Kala Munat, Dean & Professor (Janardan Rai Nagar Rajasthan Vidyapeeth University, Udaipur) - External Member
8) Dr. M.L. Pitliya Dean & Professor (Sangam University) - External Member

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as special invitee if it is considered his association will contribute in the task of the meeting with the approval of the President/Vice Chancellor.

The Convener of the Meeting is advised to hold the meeting of the BOS seeking convenience of the Chairman in the third week of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.

The External Members shall be entitled for TA/DA and sitting fees as per the norms prescribed by the Mewar University.

Registrar

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

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- Accounts/Examination/Library/Store/Warden/Security/IT Head.
- Coordinator, IQAC Cell.
- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF LAW

DATE: 15th June 2019

Minutes of Meeting of Board of Studies

The Board of Studies meeting of the Department of Law was held on 15th June 2019 in Room No. 135 at 11:00 am onwards to approve the new/changes in curriculum and Syllabus revision for session 2019-20.

The following members were present: **(Annexure 1)**

1) Prof. (Dr.) P.S. Varshney, Dean, Faculty of Legal Studies - Chairman
2) Prof. (Dr.) J.L. Purohit, Professor & Head - Convener
3) Mr. Amit Dadhich, Assistant Professor - Internal Member
4) Mr. Zakiyyu Muhammad, Assistant Professor - Internal Member
5) Mr. Shirish Kumar Shukla, Assistant Professor - Internal Member
6) Ms. Lavina Chaplot, Assistant Professor - Internal Member
7) Dr. Kala Munat, Dean & Professor (Janardan Rai Nagar Rajasthan Vidyapeeth University, Udaipur) - External Member
8) Dr. M.L. Pitliya Dean & Professor (Sangam University) - External Member

At the outset, Prof. (Dr.) J.L. Purohit (Head, Department of Law) warmly welcomed all the board members. The head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 27-01-2018

Resolution: Minutes of the previous BOS of the Law department held on 27-01-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Prof. (Dr.) J.L. Purohit (Head, Department of Law) presented departmental proposed activity that should be conducted related to curricular development, research development, and faculty development of Law.

15/6/19

Agenda 3: Review and approval of Existing Programmes/Courses

Resolution: Prof.(Dr.) J.L Purohit (Head, Department of Law) presented the ongoing syllabus of B.A LL.B (Hons.), BBA LL.B (Hons.), LL.B and LL.M. The BOS committee reviewed and approved the scheme and syllabus in the upcoming session 2019-20 **(Annexure 2)**

Agenda 4: To recommend the approved syllabus to Academic Council

Resolution: Members of the Board of Studies approved the reviewed syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

YLL
15/6/19

MEWAR UNIVERSITY
Chittorgarh-312901 (Raj.)

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF LAW

DATE: 15th June 2019

Annexure 1: Attendance Sheet

Following members were present in the Board of Studies meeting:

S.NO.	NAME OF MEMBERS		SIGNATURE
1.	Prof. (Dr.) P.S VARSHNEY	CHAIRMAN	15/6/19
2.	Dr. Kala Munat, Dean & Professor (Janardan nagar Rajasthan Vidyapeeth University, Udaipur)	External Member	15/6/19
3.	Dr. M.L. Pitliya Dean & Professor (Sangam University)	External Member	15/6/19
4.	Prof. (Dr.) J.L. Purohit Professor	CONVENOR	15/6/19
5.	Mr. Amit Dadhich Assistant Professor	MEMBER	15/6/19
6.	Mr. Zakiyyu Muhammad Assistant Professor	MEMBER	15/6/19
7.	Mr. Shirish Kumar Shukla Assistant Professor	MEMBER	15/6/19
8.	Ms. Lavina Chaplot Assistant Professor	MEMBER	15/6/19

Annexure 1: Attendance Sheet

Prof. (Dr.) P.S. VARSHNEY

Chairman

OFFICE OF THE REGISTRAR

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019/ 2234-A **08th March, 2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Chemical Engineering

The Board of Studies for the Department of Chemical Engineering is reconstituted as per Rule 12 of the Statutes of Mewar University, as under:

1) Prof. (Dr.) Tanveer Ahmed Kazi, Dean, Engineering - Chairman
2) Prof. (Dr.) Mr. Mahesh Kumar Singla- Senior Engineer, Hindustan Zinc. - External Member
3) Prof. (Dr.) Pankaj Kumar Pandey-Amity University Jaipur - External Member
4) Mr. Dinesh Kumar, Assistant Professor - Internal Member
5) Mr. Faizan Khoker, Assistant Professor - Internal Member
6) Ms. Shalinee Gupta, Head & Assistant Profeassor - Convener

The terms of reference for the Board of Studies are as provided in Rule 12 of the Statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as special invitee if it is considered his association will contribute in the task of the meeting with the approval of the President/Vice Chancellor.

The Convener of the Meeting is advised to hold the meeting of the BOS seeking convenience of the Chairman in the first week of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.

The External Members shall be entitled for TA/DA and sitting fees as per the norms prescribed by the Mewar University.

Registrar

Registrar
Mewar University
Gangrar, (Chittorgarh)

Copy to:

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- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF CHEMICAL ENGINEERING

DATE: 05.06.2019

Minutes of Meeting of Board of Studies

The Board of Studies Meeting of the Department of Chemical Engineering, Faculty of Engineering and Technology was held on 05th June 2019 in Room No. 135 at 10:00 am onwards to approve the new/changes in curriculum and Syllabus revision for session 2019-20.

The following members were present: **(Annexure 1)**

1) Prof. (Dr.) Tanveer Ahmed Kazi, Dean, Engineering - Chairman
2) Prof. (Dr.) Mr. Mahesh Kumar Singla- Senior Engineer, Hindustan Zinc. - External Member
3) Prof. (Dr.) Pankaj Kumar Pandey-Amity University Jaipur - External Member
4) Mr. Dinesh Kumar, Assistant Professor - Internal Member
5) Mr. Faizan Khoker, Assistant Professor - Internal Member
6) Ms. Shalinee Gupta, Head & Assistant Profeassor - Convener

Ms. Shalinee Gupta (Head, Chemical Engineering) warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 1: To approve minutes of the previous BOS, held on 09-06-2018

Resolution: Minutes of the previous BOS of the Chemical Engineering Department held on 09-06-2018 were discussed and approved.

Agenda 2: Brief presentation of academic activities of the department before the BOS Committee by the convener

Resolution: Ms. Shalinee Gupta (Head, Chemical Engineering) presented departmental activities conducted related to curricular development, research development, faculty development and Industrial collaboration were presented.

Agenda 3: Review in any Programme/Course

Resolution: No changes were made to the approved scheme and syllabus of the course B. Tech. in Chemical Engineering.

Agenda 4: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was dissolved with thanks to the Chair and all the Board of Studies Members.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF CHEMICAL ENGINEERING

DATE: 05.06.2019

Annexure 1: Attendance Sheet

S.NO.	Name& Designation	Designation in BOS	Signature
1	Prof. (Dr.) Tanveer Ahmed Kazi, Dean, Engineering	Chairman	
2	Prof. (Dr.) Mr. Mahesh Kumar Singla	External Member	5/6/19
3	Prof. (Dr.) Pankaj Kumar Pandey	External Member	
4	Mr. Dinesh Kumar, Assistant Professor	Internal Member	05.06.2019
5	Mr. FaizanKhoker, Assistant Professor	Internal Member	
6	Ms. Shalinee Gupta, Head & Assistant Professor	Convener	

MEWAR UNIVERSITY Chittorgarh-312901 (Raj.)

OFFICE OF THE REGISTRAR
MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

Ref. No.: MU/RO/2019/2403-A **22-06-2019**

OFFICE ORDER

Sub.: Reconstitution of Board of Studies for Department of Pharmacy

The Board of Studies for the Department of Department of Pharmacy is reconstituted as per Rule12 of the Statutes of Mewar University, as under:

1) Dr. Kaushal Kishor Chandrul, Professor & Dean	Chairman
2) Dr. Rajesh Verma, Professor, Apex University, Jaipur	External Member 1
3) Dr. Vinesh Chaudhary, Professor, LBS College of Pharmacy, Jaipur	External Member 2
4) Rahul Kushwah, Pharmacist	Alumni
5) Mr. Amit Khandelwal, Elocon Pharmaceutical Pvt Ltd, Jaipur	Member from Industry
6) Ms. Ankita Sharma, Assistant Professor	Internal Member -1
7) Mr. Aziz Ahmed, Assistant Professor	Internal Member-2
8) Mr Pankaj Chasta, Assistant Professor	Internal Member 3
9) Mr. Gaurav Kumar Sharma, Assistant Professor & HOD	Convener

The terms of reference for the Board of Studies are as provided in Rule 12 or the Statutes.

The Chairman of the Board of Studies may associate any member in the meeting, as a special invitee if it is considered his association will contribute to the task of the meeting with the approval of the President/Vice-Chancellor.

The Convener of the Meeting is advised to hold the meeting of the BOS seeking the convenience of the Chairman in the third week of June 2019. The proceedings of the meeting may be sent to the VC/Registrar as early as possible.

The External Members shall be entitled to TA/DA and sitting fees as per the norms prescribed by Mewar University.

Registrar
Mewar University
Gangrar, (Chittorgarh)

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- Record file.

MEWAR UNIVERSITY, GANGRAR, CHITTORGARH (RAJ.)

DEPARTMENT OF PHARMACY

DATE: 01-07-2019

Minutes of Meeting of Board of Studies

The Board of Studies Meeting of the Department of Pharmacy, Faculty of Medical, Surgical and Paramedical was held on 01st July 2019 in Room No. 135 at 10:00 am onwards to approve the new/changes in curriculum and Syllabus revision for session 2019-20. The following members were present: **(Annexure 1)**

1) Dr. Kaushal Kishor Chandrul, Professor & Dean	Chairman
2) Dr. Rajesh Verma, Professor, Apex University, Jaipur	External Member 1
3) Dr. Vinesh Chaudhary, Professor, LBS College of Pharmacy, Jaipur	External Member 2
4) Rahul Kushwah, Pharmacist	Alumni
5) Mr. Amit Khandelwal, Elocon Pharmaceutical Pvt Ltd, Jaipur	Member from Industry
6) Ms. Ankita Sharma, Assistant Professor	Internal Member -1
7) Mr. Aziz Ahmed, Assistant Professor	Internal Member-2
8) Mr Pankaj Chasta, Assistant Professor	Internal Member 3
9) Mr. Gaurav Kumar Sharma, Assistant Professor & HOD	Convener

Agenda 1: Grant of leave of absence member, if any
Resolution: No one was absent

Agenda 2: Welcoming the New Members
Resolution: Mr. Gaurav Kumar Sharma, Head of the Department of Pharmacy, warmly welcomed all the board members. The Head also appreciated the presence of outside experts who took the pain and keen interest to attend this meeting.

Agenda 3: Minutes of the previous Meeting of the Board of Studies of the Department of Pharmacy, Mewar University
Resolution: Minutes of the previous BOS of the Pharmacy Department held on 16-06-2018 were discussed and approved.

PRINCIPAL
Department of Pharmacy
Mewar University
Gangrar, Chittorgarh

Agenda 4: Introduce the Employability/ Entrepreneurship/ Skill Development Course

Resolution: Department of Pharmacy offers professional courses for Employability/Entrepreneurship/Skills in D. Pharma and B. Pharma consisting the various subjects. **(Annexure 2)**

Code	Name	Year of introduction
PHARM (P)	B. PHARM (P.P.)	2019-20

Prof. (Dr.) Kaushal Kishor Chandrul, Chairperson briefed the committee regarding the application to start to M. Pharma (Pharmaceutics and Quality Assurance) to the Pharmacy Council of India (PCI) has been submitted.

The main objectives of the Employability/ Entrepreneurship/ Skill Development Course are:

- To promote professional practice management skills in hospital pharmacies.
- To promote entrepreneurship and abilities to manage the independent drug store/pharmacy.
- To groom in a manner that they can do patient counseling and able to supply quality medicines to patients.
- To prepare the students/learners to be good professionals in the pharmaceutical industry.

Agenda 5: Introduce the value-added courses

Resolution: Department of Pharmacy offers Training / Internships which are conducted every year. These sessions are conducted by experts and help students stand apart from the rest in the job market by adding further value to their resumes. They are mostly independent of each type of field. **(Annexure 3)**

S.No.	Name of the value-added courses/ Internships	Course Code	Year of offering	Duration of course/ Internships
1.	B. Pharm – Short-term training	BP	2019-20	01 Months
2.	D. Pharm - Short-term training	DPH	2019-20	03 Months

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The main objectives of the Value Added Course are:

- provide students with an understanding of the expectations of the industry.
- To improve the employability skills of students.
- To bridge the skill gaps and make students industry ready.
- To provide an opportunity for students to develop interdisciplinary skills.
- To mold students as job providers rather than job seekers.

Guidelines for conducting value-added courses/Internship:-

The training/internship is conducted in collaboration with well-known pharmaceutical industries like **Oniosome and CTSD (Center for Training & skill development), Mohali.**

The B. Pharma and D. Pharma students will be sent to this internship at the end of the final semesters.

Duration:-

The duration of training/internship is 1 month/150 hours for B. Pharma in the pharmaceutical industry and 3 months/500 hours in the hospital as per mentioned by the Pharmacy Council of India (PCI).

Agenda 7: To recommend the approved syllabus to Academic Council.

Resolution: Members of the Board of Studies approved the revised syllabus and recommended the same be forwarded to the Academic Council for their approval.

The meeting was concluded with a gentle thank you by the Chairperson Prof. (Dr.) Kaushal Kishor Chandrul, Department of Pharmacy.

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DEPARTMENT OF PHARMACY

DATE: 01-07-2019

Annexure 1: Attendance Sheet

S.NO.	Name & Designation	Designation in BOS	Signature
1	Dr. Kaushal Kishor Chandrul, Professor & Dean	Chairman	
2	Dr. Rajesh Verma, Professor, Apex University, Jaipur	External Member 1	Rajesh 1/7/19
3	Dr. Vinesh Chaudhary, Professor, LBS College of Pharmacy, Jaipur	External Member 2	
4	Rahul Kushwah, Pharmacist	Alumni	Rahul
5	Mr. Amit Khandelwal, Elocon Pharmaceutical Pvt Ltd, Jaipur	Member from Industry	Amit 01.07.
6	Ms. Ankita Sharma, Assistant Professor	Internal Member -1	
7	Mr. Aziz Ahmed, Assistant Professor	Internal Member -2	A.A. 01/7/19
8	Mr Pankaj Chasta, Assistant Professor	Internal Member -3	
9	Mr. Gaurav Kumar Sharma, Assistant Professor & HOD	Convener	

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01/7/19