

अधिसूचना

क्रमांक

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विषय बी.सी.ए., बी.एम.सी. तसेच एम.ए. (इंग्रजी) अभ्यासक्रमाचे संलग्नीकरण Withdraw करण्याबाबत..

सर्व संबंधितांचे माहितीकरीता अधिसूचित करण्यात येते की, मॅट्रिक मॅट्रिक विद्यालय, जोग चाक, अमरावती येथील बी.सी.ए., बी.एम.सी. तसेच एम.ए. (इंग्रजी) अभ्यासक्रम बंद करण्यासंबंधी मॅट्रिक विद्यालय कलम नसार संपूर्ण क्रिया पूर्ण करण्यात आली असून याबाबत विद्यार्थ्यांच्या विषय क्र. अन्वये बी.सी.ए., बी.एम.सी. तसेच एम.ए. (इंग्रजी) या अभ्यासक्रमाचे संलग्नीकरण पूर्णता काढून घेण्याची, मॅट्रिक विद्यालय व विद्यार्थी विकास मंडळाच्या सभेने केलेली निर्णय विद्यार्थ्यांने मान्य केलेली होती. त्याअनुरूपाने मॅट्रिक विद्यालय, जोग चाक, अमरावती येथील बी.सी.ए., बी.एम.सी. तसेच एम.ए. (इंग्रजी) या अभ्यासक्रमाचे संलग्नीकरण मॅट्रिक विद्यालयाकडून मध्यिल कलम नसार Withdraw करण्यात येत आहे.

स्वा
प्र.कलसचिव
संत गागे बाबा अमरावती विद्यापीठ

NOTIFICATION

No. : 140 / 2015

Date: 24/09/2015

Subject : Introduction of new Syllabi for the subjects i) Renewable Energy and ii) Animation at B.Sc. Part-I from the session 2015-16.
Reference : Notification No.51 of 2015, dated 18.6.2015.

It is notified for general information of all concerned that the authorities of the University have introduced the new subjects i) Renewable Energy & ii) Animation for B.Sc.Part-I (Sem-I & II) to be implemented from the Academic Session 2015-16 as "1S : Renewable Energy and 2S : Animation" as given in Appendix-A and "1S : Animation & 2S : Animation" as given in Appendix-B as appended herewith.

Sd/-
Registrar
Sant Gadge Baba Amravati University

APPENDIX-A

Syllabus Prescribed for B.Sc.-I (Sem-I & II) for the Subject Renewable Energy to be implemented from the Academic Session 2015-16

Semester-I
1S : Renewable Energy
Fundamentals of Energy Systems

- Unit-I :** Work and Heat: Definition of work, thermodynamic work, displacement work and other forms of work, Definition of Heat, Work and heat transfer as path function, comparison of work and heat, work done during various processes, P-V diagrams. First law of thermodynamics: Energy of a system, classification of energy, law of conservation of energy law applied to closed system under going a cycle, Joules experiment
- Unit-II :** First Law applied to flow processes: Steady state, steady flow process, mass balance and energy balance in steady flow process, steady flow energy equation and its application to nozzles and diffusers, turbine and compressor pumps, heat exchangers, Throttle valve etc. work done and Heat transfer during steady flow processes.
Second Law of thermodynamics, Kelvin-Planck and Clausius statements, reversible and irreversible processes, Carnot cycle, two propositions regarding the efficiency of Carnot cycles. The thermodynamic temperature scale. Reverse carnot cycle. COP of heat pump and refrigeration. Inequality of Clausius.

- Unit III : Fluid Properties and Classification of Fluid:** Viscosity, Newton's law of viscosity, Newtonian and Non-Newtonian Fluids, Ideal and real fluids, Steady & Unsteady Flow, Uniform & Non-Uniform Flow, Laminar & Turbulent Flow, Compressible & Incompressible Flow, Surface tension, Definitions, units and Dimensions
- Unit IV : Fluid Pressure & Its Measurement:** Definition of pressure, units and dimensions, Pressure at a point, Pascal's law, Hydrostatic pressure law, Absolute and Gauge pressure Measurement of pressure, Simple Manometer & Differential Manometer theory and problems, Mechanical Pressure Gauges.
- Unit V : Dynamics of Fluid Flow** Concept of Inertia force and other forces causing motion, Derivation of Euler's equation and, Modification of Bernoulli's equation, problem on Bernoulli's equation without and with losses, Flow through Orifices classification, Hydraulic Co-efficient of an Orifice and relation between them,
- Unit VI : Energy Sources & World Energy Status :** Energy Sectors: Domestic, Transportation, Agriculture, Industry Sector, Energy Scenario, World Energy Present Situation, Availability of Conventional & Non Conventional Energy Resources.
Conventional Energy Sources : Fossil Fuel, Hydro Resources, Nuclear Resources, Coal, Oil, Gas, Thermal Power Stations, Comparison of various conventional energy systems, their prospects and Limitations, Advantages and Disadvantages of Conventional Energy Sources.
Non-Conventional Energy Sources : Solar Energy, Wind Energy, Energy from Biomass & Biogas, Ocean Thermal Energy Conversion, Tidal Energy, Geothermal Energy, Hydrogen Energy, Fuel Cell, Magneto Hydro-Dynamics Generator, Advantages & Limitations of Non-Conventional Energy Sources.

Books Recommended Text Books

1. Engineering Thermodynamic - by P.K.Nag.
2. Thermodynamics Volume: I & II R. Sadava
3. Basic Engineering Thermodynamics - by Reyner Joel
4. Thermodynamics - by C.P. Arora.
5. Fundamentals of Classical Thermodynamics - by G.J. Vanwylen.
6. Engineering Thermodynamics P. Chattopadhyay Oxford
7. Engineering Thermodynamics Gordon Rogers, Ron Mayhew Pearson
8. Energy for a sustainable world: Jose Goldenberg, Thomas Johansson, A.K.N.Reddy, Robert Williams (Wiley Eastern).
9. Energy policy for : B.V.Desai (Weiley Eastern),
10. Modeling approach to long term demand and energy implication : J.K.Parikh.
11. Energy Policy and Planning : B.Bukhootsow.
12. TEDD Year Book Published by Tata Energy Research Institute (TERI),
13. World Energy Resources : Charles E. Brown, Springer 2002.
14. International Energy Outlook EIA annual Publication
15. Heat and Thermodynamics M.W. Zemansky (McGraw Hill Publication)
16. Heat and thermodynamics D.S.Mathur
17. Text book of Heat J.B.Rajam
18. Heat and thermodynamics Rajam & Arora
19. Heat Rajkumar & Sharma
20. Non-Conventional Energy Sources, G. D. Rai, Khanna Publication.
21. Non-Conventional Energy Resources, B. H. Khan, The McGraw Hill
22. Fluid Mechanics and Fluid Power Engineering by D.S. Kumar, S. K. Kataria & Sons
23. Fluid Mechanics and Hydraulic Machines by R.K. Bansal, Laxmi Prakashan
24. Theory and Applications of Fluid Mechanics by K. Subramanya, TMH outline series, Tata McGraw Hill Publishing Company Lt

List of Experiments

1. Study of the processes of Heat Engine
2. Study Layout of Thermodynamics laboratory
3. To investigate the first law of thermodynamic using heat Engine
4. To investigate the Second law of thermodynamic using heat Engine
5. To investigate the relation between pressure and temperature of Saturated Steam
6. To determine the flow rate using convergent nozzle.
7. To determine the nozzle thrust.
8. To determine the efficiency of nozzle
9. Study of heat exchangers
10. Determination of efficiency of pumping system
11. Determination of viscosity of liquid by Poiseuille's method.
12. Determination of viscosity of liquid by Stoke's method.
13. To determine surface tension of liquid by Jaeger's method.

Semester-II
2S-Renewable Energy
Fundamentals of Electricity

- Unit I** : **Electric Network** : Network elements: branch, junction, node, mesh. Network Laws: Kirchoff's laws, Thevenin's theorem, Power in electric circuit, unit of power, power in pure resistive circuit, Maximum power transfer theorem,
Energy sources: Voltage source, Current source. Combination of Sources: voltage and current sources, Voltage source series combination, current source series combination. Voltage source parallel combination, current source parallel combination, numerical.
- Unit II** : **Electromagnetic Induction** : Relation between Magnetism and Electricity-Production of Induced E.M.F. and Current-Faraday's Laws of Electromagnetic Induction- Lenz's Law-Induced E.M.F. -Self-Inductance-Coefficient of Self-Inductance (L)-Mutual Inductance-Coefficient of Mutual Inductance (M)-Coefficient of Coupling-Inductances in Series and Parallel, Transformer construction, working, applications and losses.
- Unit III** : Magnetic Hysteresis- Area of Hysteresis Loop Properties and applications of Ferromagnetic Materials, Permanent magnet materials, Hysteresis Law-Energy Stored in Magnetic Field, Rate of Change of Stored Energy, Transient Current: Rise and decay of current in series LR, CR Circuits.
- Unit IV** : **Elements of Electro-mechanical Energy Conversion:** Introduction, Salient aspects of conversions, Energy- Balance, Magnetic-field System Energy and Co-energy, A Simple Electromechanical System, Energy in Terms of Electrical Parameters, Rotary Motion, Dynamic Equations and system-model of a simple system.
- Unit V** : **A C Fundamental** - A.C. Through Resistance, Inductance and Capacitance, A C applied to LR, CR and LCR circuits, power consumption in ac circuit, Apparent Power, Power factor, Power consumed in pure inductive and capacitive circuit, Resonance in LCR Circuits, Graphical Representation of Resonance, Sharpness of Resonance Curve, Q-Factor of a Series Resonant Circuit, Parallel A.C. Circuits, Bandwidth of a Resonant Circuit.
- Unit VI** : Primary and Secondary Batteries, Classification of Secondary Batteries based on their Uses, Classification of Lead Storage Batteries, Parts of a Lead-acid Battery, Electrical Characteristics of the Lead-acid Cell, Application of Lead-acid Batteries, Battery Ratings, Indications of a Fully Charged Cells.

Reference Books:

1. Text Book of Electrical Technology Vol. II, B.L. Theraja & A.K. Theraja, S. Chand Publications.
2. Electrical Machines by P. S. Bhimbra.
3. Energy Demand and Supply, (Stathis) Michaelides, Efstathios E. Springer Germany, 2012
4. Solar Electricity Handbook - 2012 Edition: A Simple Practical Guide to Solar Energy - Designing and Installing Photovoltaic Solar Electric Systems, Michael Boxwell, Greenstream Publishers, 2012
5. Photovoltaics: Design and Installation Manual, Solar Energy International, 2012
6. Solar Electric Handbook: Photovoltaic Fundamentals and Applications, Solar Energy International, 2012
7. Electrical Technology, Naidu-Kamakshiah, Tata McGraw-Hill Education, 2006
8. Fundamentals of Electrical Engineering, Rajendra Prasad, PHI Learning Pvt. Ltd., 2005
9. A Text Book of Electrical Technology, B.L. Theraja, S. Chand Limited, 200
10. Photovoltaic: Design and Installation Manual, Solar Energy International, 2012

Practical

1. Simulation of Hysteresis Loop on the CRO
2. Characteristics of LVDT
3. Characteristics of Current Transformers and Potential Transformers
4. Power measurement using current transformer & potential transformer
5. Power factor improvement with capacitor banks
6. Testing of energy meters

APPENDIX-B

**Syllabus Prescribed for B.Sc.-I (Sem-I & II) for the Subject Animation
to be implemented from the Academic Session 2015-16**

Semester I
1S : Animation
Computer Fundamentals and Animation

- Unit-I** : Introduction to computer, relevant hardware and software, their list and general-purpose utility in actual practical application, connection diagrams with each other (simple block diagrams expected).
- Unit-II** : Introduction to different operating systems (OS) like **Windows**, **Linux**, etc. (their names and general idea should be given), requirements, etc. (brief idea and simple explanation only).
- Unit-III** : Basic idea of networks with block diagrams and definitions only (general-purpose networks like WAN, MAN and the LAN topologies and sub-topologies of LAN), their applications (brief idea and simple explanation only).

Unit-IV : Basic idea of memory, RAM, ROM, PROM, EPROM, etc. their definitions with description (brief idea and simple explanation only)

Unit-V : Using internet explorer, different browsers, email, attachment techniques, using compression utilities, search engine techniques (brief introduction), downloading, etc. introduction to POP and SMTP mail server configurations techniques.

Unit-VI : History of animation. Different types of animations and its applications.
(Types : 2D animation , 3D animation , Stop motion animation, etc. & Applications : Entertainment, Education, Computer/Mobile Gaming, Special Effects, etc.)

Practicals : Minimum eight experiments based on above contents are to be performed.

Recommended Books :

1. Recommended Text Books: Computers & Common Sense by Roger Hunt, John Shelley, Published by Prentice-Hall of India, Edi.2004.
2. Reference books: Fundamentals of Computers by Rajaraman, Published by Prentice-Hall of India, Edi.2004.
- Digital Computer Fundamentals by Bartee, Edi.2001.
4. Computer Fundamentals and Information Technology by Ramesh Bangia, Edi.200□

The Concerning teachers are also suggested to use other relevant material available on the net, to update the knowledge of the students□

Following are the recommended links, for further search-

- 1) www.tatamcgrawhill.com
- 2) www.books.google.co.in
- www.penguinbooksindia.com
- 4) www.bookcafe.in
- 5) www.newindianbooks.com
- 6) www.newasiabooks.org

Semester II
2S : Animation
Fundamentals of Graphics

Unit-I : **Adobe Photoshop:** concepts of graphics, file menu basic of layers, selection, move, lasso, magic wand, crop, etc. (study of all tools expected).

Unit-II : All types of paint tools like air brush, custom shapes, quick mask, notes, audio annotation tools, masking, path, etc.

Unit-III : Working with layers, applications of masking to matting (study of all menus related to layers)□image menu, color correction, scanning, filters, creating backgrounds & textures for website, slice tools, web related concepts. Creation of a simple web and presentation graphics, file automate options, video editing techniques.

Unit-IV : **Adobe illustrator:** Concepts of graphics designing, interface, basic shapes, all types of menus like file menu, edit, view, select, group/ungroup, lock, hide/show, etc.□
File/outline, gradients, patterns, symbols, styles, swatches, mesh tool, paint brush. Creating a greeting card, etc.

Unit-V : Deformation tools, symbols tools, redrawing or cartoon making, type tools and type menus.

Unit-VI : Use of different tools like path, envelop, clipping and crop mask, etc□filters and effect menus, exporting document, idea of printing, setting bleed, idea of PDF technology.

Practicals : Minimum eight experiments based on above contents are to be performed.

Recommended Books :

1. Recommended Text Books: Digital fashion illustration with Photoshop and Illustrator by Kevin Tallon□
Published by Batsford 200□
2. Reference books: Real word Adobe Illustrator CS4 by Mordy Golding□Published by Prentice-Hall of India, 200□
- Creative Suite □integration: Photoshop, Illustrator by Keith Martin□Published by Prentice-Hall of India, 200□
4. Special edition using Adobe Photoshop □by Peter Bauer, Jeff Foster□Published by Prentice-Hall of India, 200□

The Concerning teachers are also suggested to use other relevant material available on the net, to update the knowledge of the students□

Following are the recommended links, for further search-

- 1) www.tatamcgrawhill.com
- 2) www.books.google.co.in
- www.penguinbooksindia.com
- 4) www.bookcafe.in
- 5) www.newindianbooks.com
- 6) www.newasiabooks.org