



VEER BAHADUR SINGH PURVANCHAL UNIVERSITY

JAUNPUR - 222003 (U.P.)

vbspu.ac.in

SYLLABUS_ VALUE-ADDED COURSES

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Department of Microbiology
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003



Value Added Course
On
'Volumetric Analysis'

Course Code: VMICBSC004

2021-2022

Rishi Srivastava
Course Coordinator

Prof. Rajesh Sharma
Coordinator
B.Sc. (BZCEM Course)

Prof. Ram Narayan
Head
Department of Microbiology

About the value-added course

Volumetric analysis is a quantitative analytical method which is used widely. As the name suggests, this method involves measurement of the volume of a solution whose concentration is known and applied to determine the concentration of the analyte. In other words, measuring the volume of a second substance that combines with the first in known proportions is known as Volumetric analysis or titration. It is this method of quantitative analysis that allows us to determine the concentration of the analyte. The first method of Volumetric Analysis was devised and found by the French chemist Jean-Baptiste-Andre-Dumas; as he was trying to determine the proportion of nitrogen combined with other elements in organic compounds. To ensure the conversion of the nitrogen compound into pure gas, the nitrogen compound was burnt in a furnace and passed along a furnace in a stream of carbon dioxide that is passed into a strong alkali solution. The mass of the nitrogen is calculated and occupies under known conditions of pressure and volume from the sample. The course is important for all the undergraduate students in order to build an understanding about making standard solutions for their practical purposes.



Department of Microbiology
Veer Bahadur Singh Purvanchal University, Jaunpur-222003
Value Added Course on 'Volumetric Analysis'

Programme Objectives:

The programme is important for all the undergraduate students in order to build an understanding about making standard solutions for their practical purposes. The programme will be helpful in developing skills related to unit conversions and making standard solutions which is an important task for most of the science students.

Course Outcome:

By the end of this course students will be able to:

- Perform unit conversions.
- Understand the basic concepts of Volumetric analysis is a quantitative analytical method.
- Determine the concentration of the analyte.
- Perform titration and numerical problem solving related to volumetric analysis

Syllabus

Value Added Course on 'Volumetric Analysis'

Teaching Hours: 30 Hrs

Course Code: VMICBSC004

Contents	Teaching Hours
<ul style="list-style-type: none">• Introduction to Volumetric Analysis,• Types of Titration• Apparatus Used for Volumetric Analysis	05
<ul style="list-style-type: none">• Principles of Volumetric Analysis- Basic concepts of molarity, molality, Normality• Procedure for Volumetric Analysis	07
<ul style="list-style-type: none">• Volumetric Analysis: Formulae and Important Terms• Unit Conversions• Sample Questions and problem solving	18
Suggested Readings <ul style="list-style-type: none">• Essentials of Volumetric Analysis by Henry William Schimpf• A Handbook of Volumetric Analysis: Designed for the Use of Classes in Colleges and Technical Schools by Edward Hart	

Assessment. The activity is assessed by the oral presentation and written test of the students.



Value Added Course

2021-2022

Earth & Atmosphere

Course Objectives:

- ❖ To learn about the earth
- ❖ To understand internal structure of the earth
- ❖ To understand structure and composition of the atmosphere
- ❖ To understand atmospheric pollution and its various sources

Course outcomes: After completing the course, student

- ❖ Will learn origin of solar system and earth.
- ❖ Will understand internal structure of earth.
- ❖ Will understand structure and composition of the atmosphere.
- ❖ Will understand atmospheric pollution and its various sources.

Syllabus

Unit-I

Origin of Solar system; Characteristic of planets in detail; Kepler's Laws of Planetary Motion; Bode's Law, Evolution of the Earth; Earth's internal structure.

Unit-II

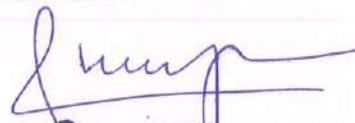
Principles of Isostasy, Plate tectonics, Continental drift, Geomagnetism, Sea-floor spreading, Earthquakes and Volcanoes; Rock cycle.

Unit-III

Structure and composition of the atmosphere. Atmospheric pollution and its various sources. Atmospheric aerosols and its affects.

Suggested Readings:

1. Holmes, A. (1992): Holmes Principles of Physical Geology Edited by P. Mc L. D. Duff. Chapman and Hall, London.
2. William Lowrie, 1997: Fundamentals of Geophysics, Cambridge University Press.
3. Condie, K.C. (2015): Earth as an Evolving Planetary System. Elsevier.
4. Wallace, J.M. and Hobbs, P.V. (2006): Atmospheric Science: An Introductory Survey (2nd Edition). Academic Press.


विभागाध्यक्ष
भू एवं ग्रहीय विज्ञान विभाग
प्रो० राजेन्द्र सिंह (रज्जू भइया) संस्थान
वी०ब०सि०यू०वि०वि०, जौनपुर
Page No. 4



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Value Added Course

2021-2022

Basics of Remote Sensing

Course Objectives:

- ❖ To learn the state of art technology, being effectively used to monitor and assess the earth's resources.
- ❖ To develop skills of interpretation of the visual and digital satellite data.
- ❖ To learn to prepare various thematic maps useful in mineral exploration, flood monitoring, land use land cover mapping, earth resource management etc.

Course outcomes: After completing the course, student

- ❖ Will learn the state of art technology, being effectively used to monitor and assess the earth's resources.
- ❖ Will understand skills of interpretation of the visual and digital satellite data.
- ❖ Will learn to prepare various thematic maps useful in mineral exploration, flood monitoring, land use land cover mapping, earth resource management etc.

Syllabus

Unit-I

Basics of Remote Sensing, Electromagnetic spectrum. Aerial photos – types, scale, resolution; properties of aerial photos. Elements of photo and imagery pattern and interpretation.

Unit-II

Data Processing and Interpretation (Digital Image Processing – DIP). Elements of Photo and Imagery pattern and Interpretation.

Unit-III

Remote sensing and GIS applications in various aspects such as mineral exploration, flood monitoring, land use land cover mapping, earth resource management, assessing groundwater potentials, environmental monitoring etc.

Suggested Readings:

1. Lillesand, T.M. and Kiefer, R.W. (1987): Remote Sensing and Image Interpretation. John Wiley, New York.
2. Gupta, R.P. (1991): Remote Sensing Geology. Springer, Berlin.

विभागाध्यक्ष

भू एवं ग्रहीय विज्ञान विभाग
प्रो० राजेन्द्र सिंह (रज्जू भइया) संस्थान
वी०ब०सि०पू०वि०वि०, जौनपुर



DEPARTMENT OF EARTH AND PLANETARY SCIENCES
PROF. RAJENDRA SINGH (RAJJU BHAIYA) INSTITUTE OF PHYSICAL SCIENCES FOR STUDY AND RESEARCH
VEER BHADUR SINGH PURVANCHAL UNIVERSITY, JAUNPUR - 222003 (U. P.)



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Value Added Course

२०२१- २०२२

Groundwater: Sustainability & Management

Course Objectives:

- ❖ To aware of conditions which affects the quality and quantity of groundwater.
- ❖ To know the methods available for management, restoration of groundwater and how to sustainably utilize it.

Course outcomes: After completing the course, student

- ❖ Will aware of conditions which affects the quality and quantity of groundwater.
- ❖ Will know the methods available for management, restoration of groundwater and how to sustainably utilize it.

Syllabus

Unit-I

Hydrology cycle, Precipitation, Evaporation, Evapotranspiration, Seepage, Infiltration and runoff, Availability of water in the world, Origin of groundwater, Subsurface distribution of water, Springs. Mode of occurrence of groundwater.

Unit-II

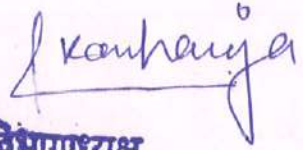
Hydro-geochemistry: Physical and Chemical characteristics of groundwater, Classification of groundwater in respect to domestic, irrigation and industrial use, Pollution of groundwater.

Unit-III

Natural and Artificial recharge of groundwater, Water balance, Conjunctive and Consumptive use of groundwater.

Suggested Readings:

1. Todd, David K. and Mays, Larry W. (2005): Groundwater Hydrology (3rd edition). Wiley India Pvt Ltd
2. Ward, R.C. and Robinson, M. (1999): Principles of Hydrology (4th edition). McGraw-Hill Education.
3. Raghunath, H.M. (2002): Hydrology: Principles, Analysis and Design. Publisher: New Age International Publishers.


विभागाध्यक्ष
भू एवं प्रलय विज्ञान विभाग
प्रो० राजेन्द्र सिंह (रज्जू भडैया) संस्थान
वी०ब०सि०पू०वि०



Value Added Course

2021-2022

Instrumentation Techniques in Geology

Course Objectives:

- ❖ To understand role and importance of some common instrumentation techniques in geosciences, their principle and application.
- ❖ To be trained to use computers and different processing software in geology.

Course outcomes: After completing the course, student

- ❖ Will learn the state of art technology, being effectively used to monitor and assess the earth's resources.
- ❖ Will be trained to use computers and different processing software in geology.

Syllabus

Unit-I

Various sample preparation techniques in mineralogy; Historical development of X-ray crystallography and Bragg's equation. Introduction to Instrumental Techniques involved in mineral characterization (Powder X-Ray diffraction Analysis).

Unit-II

Electron Microprobe Analysis, FTIR and Laser Raman Spectroscopy.

Unit-III

Various sample preparation techniques in geochemical analyses; Historical development of Mass Spectrometers, principle, application and their utility in geosciences.

Suggested Readings:

1. Mathur S.M. (2001): Guide to Field Geology. Prentice-Hall of India Pvt. Ltd., New Delhi, 220p. ISBN: 81-203-1915-X,
2. Bhattacharyya A. and Chakraborty C. (2005): Analysis of Sedimentary Successions: A Field Manual. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi-Kolkata, 445p.
3. Barnes J.W. and Lisle R.J. (2004): Basic Geological Mapping (Geological Field Guide). John Wiley & Sons Inc., 378p. ISBN: 978-0-470-84986-6.
4. Dhanaraju, R. (2009) Handbook of geochemistry: techniques and applications in mineral exploration. Geological Society of India.
5. Reed, S.J. B. (1996): Electron Microprobe Analysis and Scanning electron Microscopy in Geology. Cambridge University press.

विभागाध्यक्ष

भू एवं ग्रहीय विज्ञान विभाग
प्रो० राजेन्द्र सिंह
वी०ब०सि०पू०वि०वि०, जे०पुर

Veer Bahadur Singh Purvanchal University, Jaunpur



B. Com (Hons.) Faculty of Management Studies

VALUE ADDED COURSES

ON 2021-22

1) Accounting Package- Tally	No of Hours- 30	No of seats -90
2) Income Tax and GST Taxation Procedures	No of Hous-30	No of seats =90

BENEFITS OF VALUE-ADDED COURSE:

- ◆ Course Curriculum as per Industry standard.
- ◆ Extensive lab Practice for market exposure.

Accounting Package- Tally

COURSE OUTCOME:

Co1:- Able to describe Principles of accounting, Types of accounting and golden rules of accounting.

Co2:- Able to examine fundamentals of Tally.

Co3: Able to understand and illustrate stock groups, Ledges etc.

Co4:- Able to Prepare Trial balance, Trading, and Profit & Loss account etc.

Co5:- Able to understand & classify Job work Process and Job working Process.

Co6:- Able to examine and play Purchase orders and Sales orders, Bills of materials etc.

MODULE STRUCTURE

Module 1 (10 hours)

Basics of Accounting:- Definition, Principles of Accounting, Types of Account and Golden Rules of Accounts, recording of transactions, posting, balancing & preparation of final A/c.

Fundamentals of Tally:- ERP9 1. Setting up of company in Tally ERP 9 2. Company features & configurations.

Creating Accounting Masters in Tally ERP 9- 1. Accounting groups 2. Ledgers 3. Maintaining charts of Accounts.

Module 2 (10 hours)

Inventory Management masters in Tally ERP 9 1. Stock groups, Stock items 2. Unit of measures 3. Godowns

Voucher Entries 1. Accounting Vouchers 2. Inventory Vouchers 3. Order Voucher

Generating Basic Reports in Tally ERP9-1. Trial Balance, Trading and Profit & Loss Account. 2. Balance sheet. 3. Cash / Bank Books. 4. Stock Summary, Go down Summary etc

Advanced Accounting Features in Tally ERP 9-1. Maintaining Bill – wise details 2. Cost Centers and Cost Categories 3. Multiple Currencies. 4. Budgets and Controls 5. Banking 6. Scenario Management.

Module 3 (10 hours)

Job Costing-1. Job Work Process and Job work in process 2. Job work out process.

Advantages of Technology 1. Security Controls 2. Tally Audit 3. Backup and Restore 4. Export and Import of Data

Advanced Inventory Features in Tally ERP 9- 1. Purchase orders and Sales Orders 2. Reorder levels 3. GRN and Delivery Notes 4. Bill of materials 5. Price levels and Price lists Stock Ageing Analysis / Batch Numbers.

Income Tax and GST Taxation Procedures

2021-22

COURSE OUTCOME:

- Co 1. Able to describe basic concept of income tax.
- Co 2. Able to identify and discuss different tax slabs of various entities mentioned in the income tax act.
- Co 3. Able to plan and preparation of filling of return of income tax.
- Co 4. Able to Compare and discuss concept of dual G.S.T.
- Co 5. Able to understand and use composition Scheme and Reverse charge mechanise.
- Co 6. Able to understand and prepare E-way billing. GST returns and filling of returns etc.

MODULE STRUCTURE

Module 1 (10 hours)

Basic Concept Of Income Tax, Residential Status Of a Person, Different Sources Of Incomes, Different Tax Slabs of Various Entities mentioned in the Income Tax Act, Assessment Procedure, Advance Payment of Tax

Module 2 (10 hours)

Preparation and Filing of Return of Income, Deduction and Collection of Tax At Source, Recovery And Refund of Tax, Meaning of G.S.T, Taxation Mechanism Under G.S.T, Concept of Dual G.S.T and its Advantages, Levy and Collection of G.S.T, Supply and Concept of Place of Supply, Input Tax Credit

Module 3 (10 hours)

G.S.T Registration, Composition Scheme And Reverse Charge Mechanism, Computation Of Taxable Value and G.S.T, E-way Billing, G.S.T Returns and Filing of Returns, Payment and Refund of Tax (With TDS & TCS), G.S.T Suvidha Kendra and Common GST Portal.

Department of Microbiology
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003



Value Added Course
On
'Antimicrobial Stewardship'

Course Code: VMICBSC003

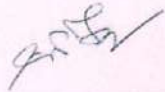
Rishi Srivastava
Course Coordinator

Prof. Rajesh Sharma
Coordinator
B.Sc. (BZCE Course)

Prof. Ram Narayan
Head
Department of Microbiology

About the value-added course

According to the World Health Organization (WHO), antibiotic resistance is rising to dangerously high levels in all parts of the world as new resistance mechanisms are emerging and spreading globally. With antibiotics becoming less effective, it has grown increasingly difficult, and in some cases impossible, to treat patients for even common infectious diseases like pneumonia. Patient care is also becoming more costly as first-line antibiotics are being replaced by more expensive medications. A longer duration of illness and treatment, often in hospitals, increases healthcare costs as well as the economic burden on patients and societies. Yet the true cost of antibiotic resistance is measured in lives and infection rates: inadequate antibiotic therapy can lead to increased mortality and morbidity, as well as a higher rate of infections such as *Clostridioides difficile*. Hospitals can no longer afford to ignore the crisis of antibiotic resistant bacteria. Based on scenarios of rising drug resistance for six pathogens, According to a WHO report on Antimicrobial Resistance, if any appropriate action is not taken immediately, the global burden of deaths from antibiotic resistance could balloon to 10 million lives each year by 2050, at a cumulative global economic output cost of \$100 trillion USD. The course will highlight how antimicrobial stewardship principles can be applied to daily life. This course will provide a framework for approaching each clinical encounter from the perspective of combating antimicrobial resistance. We hope it will develop an awareness about judicious use of antibiotics.



11/01
11/02
11/03
11/04
11/05

Department of Microbiology
Veer Bahadur Singh Purvanchal University, Jaunpur-222003
Value Added Course on 'Antibacterial Activity of Medicinal Plants'

Programme Objectives:

Plants are rich in a wide variety of secondary metabolites, such as tannins, terpenoids, alkaloids, and flavonoids, which have been found in vitro to have antimicrobial properties. Since many of these compounds are currently available as unregulated botanical preparations and their use by the public is increasing rapidly, clinicians need to consider the consequences of patients self-medicating with these preparations. The programme will generate an understanding about drugs from plant sources.

Course Outcome:

At the completion of this activity, students will be able to:

- Use aseptic techniques in handling microorganisms and other materials
- Use appropriate microbiological media and test systems
- Isolate colonies Record experimental observations
- Extract suspected antimicrobial compounds and screen them for activity using a modified Kirby-Bauer method.
- Integrate experimental results and folkloric claims on the bioactivity of medicinal plants

Syllabus

Value Added Course on 'Antibacterial Activity of Medicinal Plants'

Teaching Hours: 30 Hrs

Course Code: VMICBSC001

Contents	Teaching Hours
<ul style="list-style-type: none">• Use of aseptic techniques in handling microorganisms and other materials• Sterilization of glassware, media, and other materials• Maintaining sterility of materials• Aseptic transfer and subculturing of microbial samples	08
<ul style="list-style-type: none">• Use of appropriate microbiological media and test systems• Isolation of colonies• Recording experimental observations.	08
<ul style="list-style-type: none">• Estimation of appropriate bacterial density using a MacFarland standard• Use of standard microbiology laboratory equipment correctly• Use the autoclave, oven, laminar flow hood, and incubator	08

Suggested Readings

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4888801/>
2. <https://www.ncbi.nlm.nih.gov/books/NBK559361/>
3. <https://www.nature.com/articles/s41579-021-00649-x>

Assessment. The activity is assessed by the oral presentation and written test of the students.

**V.B.S. PURVANCHAL UNIVERSITY,
JAUNPUR**



Department of Mechanical Engineering
Faculty of Engineering and Technology

Scheme & Syllabus

**For
Value Added Course**

(PROFESSIONAL ETHICS IN ENGINEERING)

(Effective from the Session 2021-22)



Value Added Course
Professional ethics in engineering (VE302/201)

Course Outcomes:

- Upon completion of the course, the student should be able to apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society

Learning Outcomes:

- To enable the students to create an awareness on Engineering Ethics and Human Values, to instill Moral and Social Values and Loyalty and to appreciate the rights of others.

Syllabus

UNIT I

HUMAN VALUES

8

Morals, values and Ethics – Integrity – Work ethic – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Spirituality.

UNIT II

ENGINEERING ETHICS

6

Senses of „Engineering Ethics? – Variety of moral issues -- Models of professional roles – Theories about right action – Self-interest – Customs and Religion

UNIT III

ENGINEERING AS SOCIAL EXPERIMENTATION

6

Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics

UNIT IV

SAFETY, RESPONSIBILITIES AND RIGHTS

10

Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk – Respect for Authority – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination

Suggested reading

TEXTBOOKS:

- [1] Mike W. Martin and Roland Schinzinger, "Ethics in Engineering", Tata McGraw Hill, New Delhi, 2003.
- [2] Govindarajan M, Natarajan S, Senthil Kumar V. S, "Engineering Ethics", Prentice Hall of India, New Delhi, 2004.

REFERENCES:

1. Charles B. Fleddermann, "Engineering Ethics", Pearson Prentice Hall, New Jersey, 2004.
2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, "Engineering Ethics – Concepts and Cases", Cengage Learning, 2009
3. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, New Delhi, 2003
4. Edmund G Seebauer and Robert L Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, Oxford, 2001

**V.B.S. PURVANCHAL UNIVERSITY,
JAUNPUR**



Department of Mechanical Engineering
Faculty of Engineering and Technology

Scheme & Syllabus

For
Value Added Course

(ENTREPRENEURSHIP DEVELOPMENT)

(Effective from the Session 2021-22)



Value Added Course
Entrepreneurship development (VE302/301)

Course Outcomes:

A Generic Course that is intended to inculcate an integrated personal Life Skill to the student.

Learning Outcomes:

- Understand the concept of Entrepreneurship, its applications and scope.
- Know various types of financial institutions that help the business at Central, State and Local Level
- Understand Central and State Government policies, Aware of various tax incentives, concessions
- Applies the knowledge for generating a broad idea for a starting an enterprise/start up
- Understand the content for preparing a Project Report for a start up and differentiate between financial, technical analysis and business feasibility

Syllabus:

Unit-I:

9

Entrepreneurship: Definition and Concept of entrepreneurship - Entrepreneur Characteristics – Classification of Entrepreneurs –Role of Entrepreneurship in Economic Development –Start-ups.

Unit-II:

11

Idea Generation and Project Formulation: Ideas in Entrepreneurships – Sources of New Ideas – Techniques for Generating Ideas – Preparation of Project Report –Contents; Guidelines for Report preparation – Project Appraisal Techniques –Economic Analysis-Financial Analysis-Market Analysis.

Unit-III:

10

Institutions Supporting and Taxation Benefits: Central level Institutions: NABARD; SIDBI,– State Level Institutions –DICs – SFC - Government Policy for MSMEs - Tax Incentives and Concessions.

Reference Books:

1. Arya Kumar, Entrepreneurship, Pearson, Delhi
2. Poornima MCH, Entrepreneurship Development –Small Business Enterprises, Pearson, Delhi
3. Sangeetha Sharma, Entrepreneurship Development, PHI Learning
4. Kanishka Bedi, Management and Entrepreneurship, Oxford University Press, Delhi
5. Anil Kumar, S., ET.al., Entrepreneurship Development, New Age International Publishers, New Delhi
6. Khanka, SS, Entrepreneurship Development, S. Chand, New Delhi
7. Peter F. Drucker, Innovation and Entrepreneurship

8. A.Sahay, M. S. Chhikara, New Vistas of Entrepreneurship: Challenges & Opportunities
9. Dr B E V L Naidu, Entrepreneurship. Seven Hills Publishers

**Veer Bahadur Singh Purvanchal University
Jaunpur, Uttar Pradesh, India**



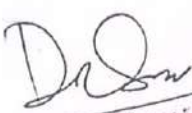
**Department of Physics
Prof. Rajendra Singh (Rajju Bhaiya) Institute of Physical
Sciences for Study & Research**

Scheme & Syllabus

for

VALUE ADDED COURSES

(Effective from the Session: 2021-2022)


Prof. (Dr.) Devendra Singh
Professor & head, Department of Physics,
Director, Prof. Rajendra Singh (Rajju Bhaiya)
Institute of Physical Sciences for Study & Research,
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh, India

DEPARTMENT OF PHYSICS, RBIPSSR.

Time: 30 Hrs

L=25, T=05

VPHY01: MATHEMATICAL FOUNDATION FOR PHYSICS
OFFERED BY DEPARTMENT OF PHYSICS, RBIPSSR

Course Objectives:

To impart knowledge on

- To familiarize with the basic Mathematics for Physics
- Exposing the more advanced features of Mathematical terms in a unified and logical manner
- Increasing the learning of the mathematics functionally
- Understanding of the operation, characteristics and performance analysis of Physics derivation using the Mathematics

Course Outcome:

At the end of the course, the students will be able to

- Understand the basic operations of mathematics
- Apply computing for solving Physics problems
- Understanding of control Physics Concepts
- Use the mathematical operations in all type Physics problems at advanced level

Syllabus

Limits and differentiation-Derivative of functions- Derivative interactive graphs-Differential Equations in Physics

Finite sums- Limits of finite sums-Definite integrals-Integration of functions-Fundamental theorem of calculus

Basics of determinants and matrices-Types of matrices- Simultaneous linear equations- Eigenvalue and eigenvectors-Matrices in Physics

Differentiation of vectors-Gradient, divergence, curl-Integration of vectors-line, surface and volume integral

Plotting of functions-Beta and Gamma Function-Riemann Zeta Function-Dirac Delta Function

Probability, Multiplicity, Combinatorics-Bernoulli Distribution-Poisson and Gaussian

Distribution-Boltzmann, Power Law, Lorentzian Distribution

Study Materials

1. Mathematical methods for Physicists, George Arfken, Hans Weber and Harris, 4th edition, Academic Press Inc. 1995.
2. Advanced Engineering Mathematics: Erwin Kreyszig
3. Mathematical Physics by H.K. Dass, S. Chand Publications, 5th edition, 2017.
4. Schaum's Outlines Complex Variables by M. R. Spiegel, Mc-G
5. Mathematical Physics by B.S. Rajput
Mathematical Physics, AK Ghatak, Trinity Press-Laxmi Publications, 1st Edition, 1995.

Prof. (Dr.) Devraj Singh
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Director, Prof. Rajendra Singh (Rajju Bhaiya),
Institute of Physical Sciences for Study & Resear,
Bahadur Singh Purvanchal University,
Lucknow 226002, U.P. India

Time: 30 Hrs

L=25, T=05

PHY02:EVERYDAY PHYSICS

OFFERED BY DEPARTMENT OF PHYSICS, RBIPSSR

Course Objectives:

- To develop knowledge and understanding in the basic concepts of physics and the know-how of its applications in everyday life.

Course Outcome:

At the end of the course, the students will be able to

- Understand the basic Physics Concepts
- Apply computing for understanding Physics at advanced level
- Understanding of Physics topics

Syllabus

Force - weight - work - energy - power - horsepower - centrifuge - washing machine - variation of boiling point with pressure - pressure cooker - cooling by expansion - refrigerator - air conditioner - working principle of Otto and diesel engines - Bernoulli principle - Bunsen burner, aeroplane.

Sound waves - Doppler Effect - power of lens - long sight and short sight - microscope - telescope - binocular - camera.

Working of the tube light and fan - kilowatt hour - fuse and heating elements - microwave oven - electric heater - photoelectric effect - video camera.

Earthquake - Richter scale - rainfall unit - lightning arrestors - cosmic showers - Coolidge tube - X - rays - ultrasound scan - CAT.

of Nuclear reactor - radiation dosimetry -

hazards and protection - solar energy - photovoltaic cell.

Study Materials:

1. D. Halliday, R. Resnick and J. Walker, "FUNDAMENTALS OF PHYSICS", 6th edition, Wiley, NY (2001).

2. Raymond A. Serway and Jerry S. Faughn, COLLEGE PHYSICS, Thomson learning (2003) California.

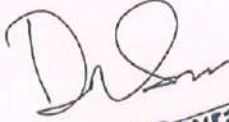
BOOKS FOR REFERENCE

1. THE HINDU SPEAKS ON SCIENTIFIC FACTS - Compiled by the editor - Kasturi and sons Limited, Chennai (June 2003)

2. Frederick J. Bueche and Eugene Hecht, "COLLEGE PHYSICS", Schaum's outline, McGraw Hill, New York (1977)

3. <http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html>

4. <https://onlinecourses.nptel.ac.in/>


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Time: 30 Hrs

L=10, T=05, P=15

VPHY03: BASIC INSTRUMENTS IN PHYSICS

OFFERED BY DEPARTMENT OF PHYSICS, RBIPSSR

Course Objectives:

- To develop knowledge and understanding in the practical knowledge of Physics
- To know about the accuracy, implications of observations
- To check the least count, various type of errors of the equipments
- Understanding the validation of theoretical fact with experiment

Course Outcome:

At the end of the course, the students will be able to

- Understand the methods adopted for the physical quantities
- Able to understand Physics by doing the experiments
- Understanding of Physics topics experimentally for any theoretical concepts

Syllabus

Basic of Measurement: Instruments accuracy, precision, sensitivity, resolution range Etc. Errors in measurements and loading effects.

Multimeter: Principles of measurement of DC voltage and DC current, ac voltage, ac current and resistance.

Electronic Voltmeter: Advantage over conventional multimeter for voltage measurement. Principles of voltage, measurement (block diagram only). Specifications of an electronic Voltmeter/ Multimeter.

Cathode Ray Oscilloscope: Block diagram of basic CRO. Construction of CRT, Electron gun, electrostatic focusing. Front panel controls and specifications of a CRO.

Use of CRO: For the measurement of voltage DC and ac frequency, time period. Oscilloscope: Block diagram and principle of working.

Signal Generators and Analysis Instruments: - Block diagram, explanation and specifications of low frequency signal generators, function generator.

Impedance Bridges: Block diagram of bridge. Working principles of basic (balancing type) RLC Bridge, Specifications of RLC Bridge.


Digital Instruments: - Principle and working of digital meters.

Project / Practical

1. Use of an oscilloscope.
2. CRO as a versatile measuring device.
3. Use of Digital multimeter/VTVM for measuring voltages
4. Winding a coil / transformer.
5. Trouble shooting a circuit
6. Balancing of bridges
7. Measurement of voltage, frequency, time period and phase angle using CRO.
8. Measurement of rise, fall and delay times using a CRO.
9. Measurement of R, L and C using a LCR bridge/ universal bridge.

Study Materials:

1. A text book in Electrical Technology - B L Theraja - S Chand and Co.
2. Performance and design of AC machines - M G Say ELBS Edn.
3. Digital Circuits and systems, Venugopal, 2011, Tata McGraw Hill.
4. Logic circuit design, Shimon P. Vingron, 2012, Springer.


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Jhansi-222003, U.P., India

Time: 30 Hrs

L-20, T-06, P-04

VPIIY04: SOLAR ENERGY

OFFERED BY DEPARTMENT OF PHYSICS, RBIPSSR

Course Objectives:

- To develop knowledge and understanding in the practical knowledge of Physics
- To know about the accuracy, implications of observations
- To check the least count, various type of errors of the equipments
- Understanding the validation of theoretical fact with experiment

Course Outcome:

At the end of the course, the students will be able to

- Understand the methods adopted for the physical quantities
- Able to understand Physics by doing the experiments
- Understanding of Physics topics experimentally for any theoretical concepts

Synabus

Sun as a source of energy, Solar radiation, Solar radiation at the Earth's surface, Measurement of Solar radiation-Pyroheliometer, Pyranometer, Sunshine recorder, Prediction of available solar radiation, Solar energy-Importance, Storage of solar energy, Solar pond

Principle of conversion of solar radiation into heat, Collectors used for solar thermal conversion: Flat plate collectors and Concentrating collectors, Solar Thermal Power Plant, Solar cookers, Solar hot water systems, Solar dryers, Solar Distillation, Solar greenhouses

Conversion of Solar energy into Electricity - Photovoltaic Effect, Solar photovoltaic cell and its working principle, Different types of Solar cells, Series and parallel connections, Photovoltaic applications: Battery chargers, domestic lighting, street lighting and water pumping


Co-curricular Activities (Hands on Exercises): (04 hrs)

[Any four of the following may be taken up]

1. Plot sun chart and locate the sun at your location for a given time of the day.
2. Analyse shadow effect on incident solar radiation and find out contributors.
3. Connect solar panels in series & parallel and measure voltage and current.
4. Measure intensity of solar radiation using Pyranometer and radiometers.
5. Construct a solar lantern using Solar PV panel (15W)
6. Assemble solar cooker
7. Designing and constructing photovoltaic system for a domestic house requiring 5kVA power
8. Assignments/Model Exam

Study Materials:

1. Solar Energy Utilization, G. D. Rai, Khanna Publishers
1. Solar Energy- Fundamentals, design, modeling & applications, G.N. Tiwari, Narosa Pub., 2005.
2. Solar Energy-Principles of thermal energy collection & storage, S.P. Sukhatme, Tata Mc Graw Hill Publishers, 1999.
3. Solar Photovoltaics- Fundamentals, technologies and applications, Chetan Singh Solanki, PHI Learning Pvt. Ltd.,
4. Science and Technology of Photovoltaics, P. Jayarama Reddy, BS Publications, 2004


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**Veer Bahadur Singh Purvanchal University
Jaunpur, Uttar Pradesh, India**



**Centre for Renewable Energy
Prof. Rajendra Singh (Rajju Bhaiya) Institute
of Physical Sciences for Study and Research**

Scheme & Syllabus

for

VALUE ADDED COURSES

(Effective from the Session: 2021-2022)

Centre for Renewable Energy

Dr. Dharendra K. Chaudhary
Head, Centre For Renewable Energy
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V.B.S. Purvanchal University
Jaunpur-222003 (U.P.) INDIA

VCRE01	Machine Learning for Material Science and Devices (Value Added Courses)	L	T	P	C
Offered by CRE		20	0	20	1

Course Objective:

To impart knowledge on

- To familiarize with the key features of the Basic Python.
- Exposing the more advanced features of Machine Learning in field of Material science and devices.
- Increasing productivity by learning to data analysis and processing techniques.
- Understanding the operation, characteristics and performance analysis of energy devices.
- Hands on experience on various Machine learning and deep learning algorithms

Course Outcome:

At the end of the course, the students will be able to

- Understand the basic principle and operation of Python.
- Apply computing methods understanding of material properties by ML.
- Prediction of device performance by simulations.
- Use of ML for the new material design and development.

Practical Syllabus:

Python introduction

Work flow of ML

ML for rational design of MHPs

Application of ML in design of Solar cell

Application of ML for understanding the recombination

Reference Book:

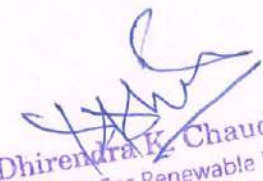
1. Deisenroth, M. P., Faisal, A. A., & Ong, C. S. (2020) "*Mathematics for machine learning*" Cambridge University Press.
2. Indranath Chatterjee, Machine Learning and Its Application, Bentham Science Publishers, 2021.
3. Ian Goodfellow, Yoshua Bengio, Aaron Courville, "Deep Learning" 2016.


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VCRE02	Thin Film Fabrication Techniques	L	T	P	C
Offered by CRE	(Value Added Courses)	20	0	20	1
<p>Course Objective: To impart knowledge on</p> <ul style="list-style-type: none"> The purpose of this course is to introduce students to the methods and techniques used for the growth and fabrication of thin film (in order of few nm) deposition methods used for fabrication of different type of devices. 					
<p>Course Outcome: At the end of the course, the students will be able to</p> <ul style="list-style-type: none"> Students will benefited by know how of the fabrication and growth methods of thin films for fabrication of the devices such as solar cell, photodiode, detectors, sensors etc. . Hands on training on different deposition techniques and fabrication of devices would skill the students. 					
<p>Practical Syllabus: Introduction to Spin coating technique. Introduction to sol-gel processing technique. Fundamentals of Physical Vapour deposition Introduction to Chemical vapour deposition Role of RPM on surface morphology Role of deposition rate and temperature of PVD on film Spray coating and its fundamentals Hand on training on different techniques</p>					
<p>Reference Book:</p> <ol style="list-style-type: none"> Krishna Seshan, Handbook of "Thin-film Deposition Processes and Techniques Principles, Methods, Equipment and Applications,2002 K. S. SreeHarsha, K.S. Sree Harsha, Principles of Vapor Deposition of Thin Films, Elsevier Science,2005 					


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VCRE03	FUNDAMENTALS OF OPTICAL CHARACTERIZATION OF MATERIALS	L	T	P	C
Offered by CRE	(Value Added Courses)	20	0	20	1
<p>Course Objective: To impart knowledge on</p> <ul style="list-style-type: none"> To train students on different optical characterization techniques of materials and analysis methods. 					
<p>Course Outcome: At the end of the course, the students will be able to</p> <ul style="list-style-type: none"> At the end of the course the students will be able to characterize the optical properties of the materials Students would gain knowledge on fundamental analysis methods by optical characterization. 					
<p>Practical Syllabus: Introduction UV-Vis spectroscopy. Introduction Photoluminescence spectroscopy Fundamentals of TRPL Working mechanism all techniques Hand on training on different techniques</p>					
<p>Reference Book</p> <ol style="list-style-type: none"> Douglas A. Skoog, F. James Holler, Stanley R. Crouch "Principles of Instrumental Analysis", Cengage Learning, 2017 Challa S.S.R. Kumar, UV-VIS and Photoluminescence Spectroscopy for Nanomaterials Characterization, Springer Berlin Heidelberg, 2013 					


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VCRE03	FUNDAMENTALS OF OPTICAL CHARACTERIZATION OF MATERIALS	L	T	P	C
Offered by CRE	(Value Added Courses)	20	0	20	1
<p>Course Objective: To impart knowledge on</p> <ul style="list-style-type: none"> To train students on different optical characterization techniques of materials and analysis methods. 					
<p>Course Outcome: At the end of the course, the students will be able to</p> <ul style="list-style-type: none"> At the end of the course the students will be able to characterize the optical properties of the materials Students would gain knowledge on fundamental analysis methods by optical characterization. 					
<p>Practical Syllabus: Introduction UV-Vis spectroscopy. Introduction Photoluminescence spectroscopy Fundamentals of TRPL Working mechanism all techniques Hand on training on different techniques</p>					
<p>Reference Book</p> <ol style="list-style-type: none"> Douglas A. Skoog, F. James Holler, Stanley R. Crouch "Principles of Instrumental Analysis", Cengage Learning, 2017 Challa S.S.R. Kumar, UV-VIS and Photoluminescence Spectroscopy for Nanomaterials Characterization, Springer Berlin Heidelberg, 2013 					


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VEE01 MATLAB FOR ENGINEERING APPLICATIONS
Offered by EE (Value Added Courses)

L	T	P	C
20	0	20	1

Course Objective:

To impart knowledge on

- To familiarize with the main features of the MATLAB integrated design environment.
- Exposing the more advanced features of a MATLAB in a unified and logical manner.
- Increasing productivity by learning to harness the full variety of MATLAB functionality.
- Understanding the operation, characteristics and performance analysis of drives circuitry using MATLAB.
- Understanding the concept of transient and steady state time and frequency response using MATLAB

Course Outcome:

At the end of the course, the students will be able to

- Understand the basic principle of using features of MATLAB.
- Apply computing methods for solving a wide range of engineering problems.
- Understanding of control engineering concepts.
- Use computer engineering software to solve and present problem solutions in a technical format.

Practical Syllabus:

MATLAB introduction
Matrices and Matrix operation
MATLAB functions
Control flow statement
Solving equations
2D and 3D Graphics
Managing M – files
MATLAB Simulink
DC Analysis and MPTT
AC analysis and network functions
Transient analysis
FFT analysis
Time domain and frequency domain analysis
Control of electrical drives

Reference Book:

1. Brian Hahn Daniel Valentine "Essential MATLAB for Engineers and Scientists" Academic Press 5th Edition 2013
2. Matlab Primer R2014b, The MathWorks, Inc, 2014
3. Steve Otto, James P. Denier "An Introduction to Programming and Numerical Methods in MATLAB" 2005th Edition

VEE02 LABVIEW PROGRAMMING

Offered by EE (Value Added Courses)

L	T	P	C
20	0	20	1

Course Objective:

To impart knowledge on

- The purpose of this course is to introduce students to the methods and techniques used in LabVIEW programming.

Course Outcome:

At the end of the course, the students will be able to

- use LabVIEW and its programming environment.
- write high - level LabVIEW programs that can be implemented in both research and industry environments.

Practical Syllabus:

Introduction to Graphical Programming and NI tools

Introduction to Labview Programming : Controls, Indicators (data types),

Plotting data Programming with while loops

Programming with For

loops String Functions

Arrays,

clusters

Sub Vis

Case structure and Formula nodes.

Sequence structures and state machines

File I/O.

Creating an application Using my DAQ

Reference Book:

1. Hands - On Introduction to LabVIEW for Scientists and Engineers, ESSICK, JOHN, Oxford University Press, New Delhi, 2010
2. Labview Graphical Programming, JOHNSON GARY W & JENNINGS RICHARD, McGraw Hill, New Delhi, 2006

Overview of Internet :

Introduction to Internet and WWW, Internet protocols like TCP/IP, http, telnet and ftp, url, email, domain name, Web Browsers, Search Engines, Counters, Chat & Bulletin Board Services.

Structure of a Web Page :

Introduction to HTML, Elements of HTML syntax, Head and Body sections, Building HTML documents, Inserting text, images, hyperlinks, Backgrounds and Color Control, ordered and unordered lists, content layout & presentation.

HTML Tags : Use of Different HTML tags in web pages.

Table Handling : Table layout & presentation, constructing tables in a web page, developing a web page in a table.

HTML Editors & Tools : Use of different HTML editors and tools like Netscape Communicator and Microsoft Front Page etc.

Interactivity : Client Server Model, Static & Dynamic Web pages, Creating forms, CGI, Role of Databases in web applications.

Web Technologies :

Overview of various web technologies and their applications like Java Script, active server pages, Macromedia flash, embedding java applets in a web page etc.

⊗ f.d
12/02/2022

Web Design

CO1 : Able to manage project team and successful development.

CO2 : Hands on practice on HTML and learn the need and basics of CSS and concept of Client Side JavaScript.

CO3: Upgrading skill set according to latest market needs and web testing tools.

CO4: Able to differentiate between Client Side and Server Side Scripting.

Veer Bahadur Singh Purvanchal University, Jaunpur

Department of Mass Communication

VALUE ADDED COURSE- VCS001

CYBER SECURITY

COURSE OBJECTIVES

- To exhibit knowledge to secure corrupted systems, protect personal data, and secure computer networks in an organization.
- To understand principles of web security and to guarantee a secure network by monitoring and analysing the nature of attacks through cyber/computer forensics software/tools.
- To understand cybercrime management standards, guidelines and procedures as well as the implementation and governance of these activities

Course Outcomes :

- Develop basic understanding of cyber crime , information security, digital forensic .
- Enumerate the evolution of cyber crime.
- Identify the different forms of cyber crime like hacking , phishing , data theft .
- Analyse the basic understanding of security , system attacks and defences against them
- Develop the understanding of different types of social media , their functioning , social media privacy and laws pertaining to them .
- Critically evaluate the measures used to counter cyber organized crime ., legal perspectives of cyber crime .

UNIT I

Definition – Crime, Cyber Crime, Information Security, Digital Forensics – Conventional Crime Vs. Cyber Crime – History of Cyber Crimes.

UNIT II

Forms of Cyber Crimes – Hacking – types of hacking, hackers, Cracking, Dos, DDos,

Cyber Bullying, Cyber Stalking, Pornography, Phishing, Intellectual Property Theft, Data Theft, malwares, ATM and Credit card frauds, Telecom Frauds, Mobile tower fraud, online shopping fraud, Remote Access fraud, Honey Trapping, Mail Spoofing


UNIT III

Social Media – Definition, Types, advantages and disadvantages – Crimes through social media, victimization through social media – Do's and Don'ts in Social Media – Safe Surfing, Social media Privacy

UNIT IV

Information Security - Fraud Triangle – Components of Information Security – Desktop Security – Email Security – Web Security –National Cyber Crime Reporting Portal, legal Perspective of cyber crime,

Aggrawal


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Department of Electronics Engineering

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EEC-002

Course duration 30Hrs.


2021-22

Course for Digital System Design

Introduction of digital systems. Number system
Number representation: BCD, floating point numbers
Boolean algebra, application of Boolean algebra in minimization of Boolean expressions
Boolean minimization using K-map and Quine McCluskey method. Introduction to Verilog
MSI Logic: Multiplexer, encoder, decoder
Arithmetic circuits: Adder, subtractor, multiplier, comparator
Latches and flipflop (SR, JK, T, D), counters
Sequential logic like Registers, introduction to behavior modeling in Verilog
Finite state machine, state graphs and tables.
Reduction of state table and state assignments. Arithmetic circuits using sequential design.
Register transfer level (RTL) design, RTL design examples
FPGA, VLSI design flow using HDL, introduction to behavior, logic and physical synthesis.

Books and references

1. Digital Design: with an introduction to Verilog HDL by M. Morris Mano and Michael D. Ciletti, 5th Edition, Pearson Education, 2013.
2. Advanced Digital Design with the Verilog HDL by Michael D Ciletti, 2nd edition, Pearson education, 2017.
3. Fundamentals of Logic Design by Roth and Kinney. 7th edition, Cengage learning, 2014
4. Digital system design using verilog by Roth, John and Lee, 1st edition, Cengage learning, 2016.


Vishal Singh
Academic Coordinator



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Digital system Design

Course Objective:

Students will have the skills and confidence to conceive and implement a complex digital system.

More broadly, they will be ready to handle substantial and challenging design problems. In particular, students will be able to:

- Explain the elements of digital system abstractions such as digital representations of information, digital logic, Boolean algebra, state elements and finite state machine (FSMs).
- Design simple digital systems based on these digital abstractions, using the "digital paradigm" including discrete sampled information.
- Use the "tools of the trade": basic instruments, devices and design tools.
- Work in a design team that can propose, design, successfully implement and report on a digital systems project.
- Communicate the purpose and results of a design project in written and oral presentations.

Course Outcomes:

Student will be able to

- Describe how analog signals are used to represent digital values in different logic families, including characterization of the noise margins.
- Create the appropriate truth table from a description of a combinational logic function.
- Create a gate-level implementation of a combinational logic function described by a truth table using and/or/inv gates, muxes or ROMs, and analyze its timing behavior.
- Create a state transition diagram from a description of a sequential logic function and then convert the diagram into an implementation of a finite-state machine with the appropriate combinational and sequential components.
- Describe the operation and timing constraints for latches and registers.
- Draw a circuit diagram for a sequential logic circuit and analyze its timing properties (input setup and hold times, minimum clock period, output propagation delays).
- Evaluate combinational and sequential logic designs using various metrics: switching speed, throughput/latency, gate count and area, energy dissipation and power
- Properly incorporate synchronous and asynchronous memories into a circuit design.



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Course Duration: 30 hrs.

EEC-001

“Printed Circuit Board (PCB) Designing”

2021-22

Objective of the Course:

This is a basic course for designing of PCB using Manually or software. PCB (Printed Circuit Board) designing is an integral part of each electronics products and this program is designed to make students capable to design their own projects PCB up to industrial grade.

Target Audience: Diploma/B.E., B.Tech. From Electrical/Electronic branch

Batch Size: 30

Topics Covered:

1. Introduction to PCB designing concepts
2. Component introduction and their categories
3. Introduction to Development Tools
4. Detailed description and practical of PCB designing
5. Lab practice and designing concepts

Detailed Syllabus of the Course

Section 1: Introduction to PCB designing concepts

Introduction & Brief History

- What is PCB
- Difference between PWB and PCB
- Types of PCBs: Single Sided (Single Layer), Multi-Layer (Double Layer)
- PCB Materials

Introduction to Electronic design Automation (EDA)

- Brief History of EDA
- Latest Trends in Market
- How it helps and Why it requires
- Different EDA tools
- Introduction to SPICE and PSpice Environment
- Introduction and Working of PROTEUS

Section 2: Component introduction and their categories

Types of Components



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- Active Components
 - Diode
 - Transistor
 - MOSFET
 - LED
 - SCR
 - Integrated Circuits (ICs)
- Passive Components
 - Resistor
 - Capacitor
 - Inductor
 - Transformer
 - Speaker/Buzzer

Component Package Types

- Through Hole Packages
 - Axial lead
 - Radial Lead
 - Single Inline Package(SIP)
 - Dual Inline Package(DIP)
 - Transistor Outline(TO)
 - Pin Grid Array(PGA)
- Surface Mount Packages
 - Metal Electrode Face(MELF)
 - Leadless Chip Carrier(LCC)
 - Small Outline Integrated Circuit(SOIC)
 - Quad Flat Pack(QFP) and Thin QFP (TQFP)
 - Ball Grid Array(BGA)
 - Plastic Leaded Chip Carrier(PLCC)


Section 3: Introduction to Development Tools

- Introduction to PCB Design using OrCAD tool
- Introduction to PCB Design using PROTEUS tool

Section 4: Detailed description and practical of PCB designing

PCB Designing Flow Chart

- Schematic Entry
- Net listing
- PCB Layout Designing
- Prototype Designing
 - Design Rule Check(DRC)
 - Design For Manufacturing(DFM)
- PCB Making
 - Printing


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- Etching
- Drilling
- Assembly of components

Description of PCB Layers

- Electrical Layers
 - Top Layer
 - Mid Layer
 - Bottom Layer
- Mechanical Layers
 - Board Outlines and Cutouts
 - Drill Details
- Documentation Layers
 - Components Outlines
 - Reference Designation
 - Text

Keywords & Their Description

- Footprint
- Pad stacks
- Vias
- Tracks
- Color of Layers
- PCB Track Size Calculation Formula

PCB Materials

- Standard FR-4 Epoxy Glass
- Multifunctional FR-4
- Tetra Functional FR-4
- NelcoN400-6
- GETEK
- BT Epoxy Glass
- Cyanate Aster
- Plyimide Glass
- Teflon

Rules for Track

- Track Length
- Track Angle
- Rack Joints
- Track Size

Study of IPC Standards



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- IPC Standard For Schematic Design
- IPC Standard For PCB Designing
- IPC Standard For PCB Materials
- IPC Standard For Documentation and PCB Fabrication

Section 5: Lab practice and designing concepts

Starting the PCB designing

- Understanding the schematic Entry
- Creating Library & Components
- Drawing a Schematic
- Flat Design / hierarchical Design
- Setting up Environment for PCB
- Design a Board

Auto routing

- Introduction to Auto routing
- Setting up Rules
- Defining Constraints
- Auto router Setup

PCB Designing Practice

- PCB Designing of Basic and Analog Electronic Circuits
- PCB Designing of Power Supplies
- PCB Designing of Different Sensor modules
- PCB Designing of Electronics Projects
- PCB Designing of Embedded Projects

Post Designing & PCB Fabrication Process

- Printing the Design
- Etching
- Drilling
- Interconnecting and Packaging electronic Circuits (IPC) Standards
- Gerber Generation
- Soldering and De-soldering
- Component Mounting
- PCB and Hardware Testing

Project work

- Making the schematic of Academic and Industrial projects
- PCB Designing of these projects
- Soldering and De-soldering of components as per Design
- Testing and Troubleshooting Methods




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PRINTED CIRCUIT BOARD

Course Outcomes :

Upon the completion of this course, students will demonstrate the ability to:

1. Understand basics of PCB designing.
2. Apply advance techniques, skills and modern tools for designing and fabrication of PCBs
3. Apply the knowledge and techniques to fabricate Multilayer, SMT and HDI PCB.
4. Understand concepts of Packaging.
5. Students will be able to analyze and construct basic analog and digital circuits. As well as design printed circuit boards, assemble and get them running.
6. Students will be able to leverage this knowledge to build and produce electronic products completely themselves.
7. Students will be able to use numerous CAD and design tools such as schematic entry, PCB layout and routing, circuit simulators, MATLAB, and more.
8. Students will learn how to use basic electronics lab equipment such as oscilloscopes, power supplies, signal generators, and more.
9. Students will learn hands on techniques such as circuit construction with solderless breadboards, wire wrapping, and soldering.


Head
Department of Electronics Engg
Faculty of Engg. & Technology
V.B.S Purvanchal University
Jaunpur-222003



INSTITUTE OF PHARMACY

वीर बहादुर सिंह पूर्वांचल विश्वविद्यालय, जौनपुर
Veer Bahadur Singh Purvanchal University, Jaunpur



web-site: www.vbspu.ac.in

e-mail: pharmacyvbspu@gmail.com

Value Added Course

2021-22

Title of course	Health Awareness
Nodal Department of HEI to run course	Pharmacy
Broad Area/Sector	Medical
Sub Sector	Para medical
Nature of course- Independent/Progressive/value added	Value Added
Course code	HA0015
Course Duration	30 hours
Job prospects-expected fields of occupation where student will be able to get job after completing this course in (please specify name/type of industry)	Midwives, primary health care servicer, patient adviser, patient counseling, Aganwadi worker, community health volunteers Guide/Train birth attendants, and others

Unit no.	Topic	Hours
1	Concept of health, community health practice, health problem & policies, health organization/agencies	3
2	Roll of health team, structure & dynamics of community, communication, counseling, community based rehabilitation.	3
3	Immunization, vaccination chart in child and pregnant women.	3
4	Communicable and non communicable disease, community health problem.	3
5	National and state level programme for health.	3
6	MTP 1971 act, PCPNDT Act, 1994, Bio-medical waste rules 1998, the prohibition of sexual harassment of women at workplace bill 2010.	3
7	Pharmacy Drug database, Diagnostic System, Lab-diagnostic System, Patient Monitoring System, Pharma Information System, online pharmacy.	3
8	Introduction, When and When Not to Use Written Communication - Complexity of the Topic, Amount of Discussion' Required, Shades of Meaning, Formal Communication Improving writing & speaking in local language & English and prepared resume.	3
9	Patient counseling, medical adherence and OTC drugs.	3

10	Reading for symbol, term and denoted Medical and pharma prescription writing	3
Suggested Readings: Text book of health worker and ANM writer name J. Clement published by jaypee brothers medical publishers new Delhi.		
Suggested Digital platform/web link for reading- www.unicef.com , www.mohfw.gov.in , www.jaypeedigital.com , www.ncbi.nlm.nih.gov		
Suggested OJT/Internship/Training/Skill partner-		
Suggested Continuous Evaluation methods: Sessional Exam/presentation/semester Exam/viva-voice/health organizational chart/field visit/demonstration/lecture discussion.		
Course pre requisites:		
<ul style="list-style-type: none"> • No pre requisites required, open to all • To study this course a student must have the subject all in class /12th/certificate/diploma. 		

(Signature)
16-09-2019

H.O.D.

Institute of Pharmacy
VBS Purvanchal University Jaunpur

Value Added Course

Date - 12.02.2022

Fundamental Of Computers

V @CA001

Introduction:

Definition of a PC and its components, Concept of software, Hardware and firmware, Types of software, Difference between a program and software.

MS Windows:


Basic multiprogramming concept, GUI, Folders, Concept of login and logout, My Document, My Computer, My Network, Recycle Bin, Start Button, Task Bar, Date and Time setting, Calculator, WordPad, System tools.

MS-Office:

MS Word: Opening, Creating, Saving a document, Editing, Finding and Replacing Texts, Using the Interface (Toolbars and Menus).

MS Excel: Concept of Workbook, Opening, Creating, Saving a workbook and organization of worksheets in a workbook, Data entry in cell, Selecting/Copying/Moving data in a worksheet.

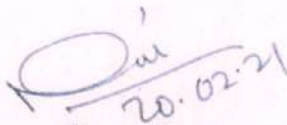
MS Power Point: Business presentation and their advantages. Opening, Creating, saving a presentation.

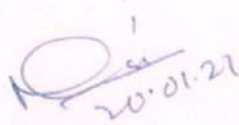

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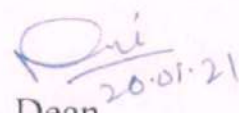
Department of Biotechnology
Faculty of Science
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003



Value Added Course
On
'Industrial Microbiology'
Course code: VBT002


20.02.21
Course Coordinator


20.01.21
Head
Department of Biotechnology


20.01.21
Dean
Faculty of Science

Industrial Microbiology

Introduction

Since long ago microorganisms are being used for the purpose of the production of various useful products for mankind. Industrial microbiology is a subfield of applied microbiology that focuses on the use of microorganisms in the manufacturing of critical products such as antibiotics, food items, enzymes, amino acids, vaccines, and fine chemicals. Industrial microbiology encompasses all processes mediated by or involving microbes in which a product of economic value is obtained, hence fermentation is synonymous with it in terms of scope, objectives, and activities. The goal of industrial microbiology is to use microbes on a big scale to create goods with a marketable value for a variety of uses. Therefore, considering the commercial viability industrial microbiology also includes quality assurance for the food, pharmaceutical, and chemical industries.

SYLLABUS

INDUSTRIAL MICROBIOLOGY

Value Added Course in Industrial Microbiology

Course code: VBT002

Teaching Hours: 30 Hrs

Unit	Contents	Teaching Hours
I	Introduction, History and scope of industrial microbiology. Screening for new metabolites: primary and secondary products.	4
II	Substrates for microbial fermentation – Nature, types and availability of substrates. Fermentation: different types and systems for optimization of productivity	5

III	Design and working of a typical bioreactors including stirred tank, bubble column, air lift reactor.	7
IV	Downstream processes for the recovery of product: isolation purification and concentration through physical / chemical means.	6
V	Production of microbial food and single cell proteins. Mushroom: Production, Nutritive and Medicinal value. Microorganisms as biofertilizers & biopesticides. Production of antibiotics, enzymes (amylase, protease) and acids.	8

Practical: All the items included in theory.

SUGGESTED BOOKS

1. Biotechnology – A text book of Industrial Microbiology – Crueger & Crueger, Pub: Panima Publishing Corp., New Delhi.
2. Microbial Biotechnology – Fundamental & Applied Microbiology – Glazier & Nikaido. Pub: Freeman & Comp., NY
3. Industrial Microbiology: An introduction (2001) Waites & others. Pub: Blackwell Science
4. Manual of Industrial Microbiology & Biotechnology– Demain & Davies ,Pub: ASM Press, Washington DC.
5. Principles of Fermentation Technology - Stanbury PF & Whitaker Pub: (Pergamon press Oxford), Aditya Book Pvt. Ltd, N. Delhi.
6. Process Biotechnology Fundamental – S.N. Muckhopadhyay, Pub: Viva Books Pvt Ltd
7. Bioprocess Engineering – Wolf R. Vieth., Pub: John Willey Inc.

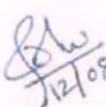
Department of Microbiology
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003





Value Added Course
On
'Food Adulteration'

Course Code: VMIC001

2020-21


12/08/2020
Course Coordinator


12/08/20
Head
Department of Microbiology


Dean
Faculty of Science

About the value-added course

Food is the basic need of life and everyone works hard to earn to satisfy their hunger. But at the end of the day, many of us are not sure of what we eat. We may be eating dangerous dye, sawdust, stone, soap, industrial starch and aluminium foil and so on. The use of adulterants has been common in all free market societies where regulatory control is poor with respect to monitoring of food quality by authorities. Food adulteration is a burning problem of the third world for quick and easy monetary gain without thinking about consumer's welfare. Adulteration of food is commonly defined as "addition or subtraction of any substance to or from the food so that the natural composition and quality of the substance is deleteriously affected." However adulteration may be unintentional or accidental. The common men unfortunately, remain largely unaware of these adulterants and their consequences risk to health. Adulteration may not be detected merely by most of the consumers especially when it is done with high degree of sophistication. Although Government's efforts has reduced this menace very superficially especially during festivals, and it still flourishes in every nook & corner. Due to very inadequate testing labs prosecutions are very fewer in reported cases. Consumer-awareness and judgement appears to be important remedy for eliminating this social crime. The proposal envisages for developing simple testing kits which can be easily used by common man to screen their some of the food articles against adulteration. For example adulteration of water in milk can be tested simply by dropping it on a polished surface; starch adulteration in milk/khoa can be simply tested by using iodine solution which is easily available at the medical shops as the tincture of iodine (disinfectant), similarly adulteration of chalk powder in sugar can be tested by dissolving it in the water; adulteration in honey can be detected by burning a cotton whip dipped in honey (the cracking sound is the indicator of adulteration) and iron fillings adulterated in tea powder can be checked by simply moving magnet bar around the powder and so on.

There are many other serious adulterants like artificial colour metanil yellow adulterated in turmeric powder, besan, milk and cow ghee; khesari flour in the besan; vanaspati or margarine in the milk/ghee/butter can also be detected by careful handling of some household/easily available chemicals like HCl (commonly called as namak ka tejab-used as household for toilet cleaning) and alcohol etc.

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12/08/2020

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12.08.20

Department of Microbiology
Veer Bahadur Singh Purvanchal University, Jaunpur-222003
Value Added Course on Food Adulteration

Programme Objectives:

Food has become a high profit industry, by reason of the scope it offers for value addition, particularly with the food processing industry getting recognized in India as a high priority area. Food adulteration is a burning problem of the third world for quick and easy monetary gain without thinking about consumer's welfare. The programme aims to develop an awareness among the students as well as to improve their professional skills for food sectors.

Course Outcome:

After the completion of this course the students will be able to:

- Know about basic idea on various foods and about adulteration.
- Know about adulteration of common foods and their adverse impact on health.
- Develop the skills of detecting adulteration of common foods.
- Extend their knowledge for remedial measures for common food adulterants.
- Know the basic laws and procedures regarding food adulteration and consumer protection.

Syllabus

Value Added Course on Food Adulteration

Teaching Hours: 30 Hrs

Course Code: VMIC001

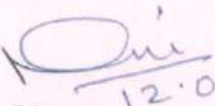
Unit	Contents	Teaching Hours
I	General Laboratory Rules and Personal Safety Precautions, Indicator Microorganisms as an indicator of good quality	02
ii	Testing of adulteration in Milk and Milk Products, Alkaline Phosphatase Test for Checking Efficiency of Pasteurization Liquid Milk, Detection of Coloring Matter in Milk and Milk Products.	12
iii	Detection of adulteration in Edible Oils & Fats, <ul style="list-style-type: none"> • Detection of Argemone oil • Detection of Mineral Oil in edible Oil • Detection of Adulteration in coconut oil 	06
iv	Detection of adulteration in Spices, Condiments, and other food products <ul style="list-style-type: none"> • Detection of Metanil Yellow in Turmeric Powder • Detection of Chalk Powder in Turmeric Powder • Detection of Brick Powder in Chilli Powder • Detection of Papaya Seeds in Black Pepper • Detection of Common Salt in Coriander Powder • Detection of horse dung in Coriander Powder • Detection of Dried Tendrils of Maize Cob in Saffron • Detection of adulteration in Sugars and Confectionery 	08


Department of Microbiology
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003



Value Added Course
On
'Clinical Microbiology'
Course code: VMIC002


12/08/2020
Course Coordinator


12.08.20
Head
Department of Microbiology


12.08.20
Dean
Faculty of Science

Department of Microbiology
Veer Bahadur Singh Purvanchal University, Jaunpur-222003
Value Added Course on Clinical Microbiology

Programme Objectives:

The course will facilitate in understanding of biosafety and handling of microorganism in microbiology laboratory along. The course will develop an understanding about mechanism of action of various antibiotics along with the mechanisms developed in microbes to counteract the action of various antimicrobial agents. The course will also aware the students with current scenario by an introduction to various levels of Biosafety along with pathological tests performed in diagnostic labs. It will be useful for students willing to make their career in clinical and pharma sector.

Course Outcome:

- After the successful completion of this course, the students will be able to:
- Understand about biosafety and handling of microorganism in microbiology laboratory.
- Develop an understanding about the handling and sampling of pathological samples.
- Introduced to various levels of Biosafety.
- Introduced to various pathological tests performed in diagnostic labs.

Syllabus

Value Added Course on Clinical Microbiology

Course code: VMIC002

Teaching Hours: 30 Hours

Unit	Contents	Teaching Hours
I	General aspects of laboratory safety: Role of Medical Laboratory technologists – ethics of laboratory practice. Laboratory safety – Common lab accidents their prevention and their first aid. Bio-Medical Waste Management - Legal Aspects and Environment Concern.	08
ii	Sample preparation and processing: Clinical sample - collection, transport and processing, Examine and analyses of body fluids, tissues and cells. Examination of urine, pus, blood, stool and CSF.	08
iii	Culture media preparation. Preparation of blood agar, chocolate agar, and other media required for medically important microorganisms., Demonstration of α and β hemolysis on blood agar medium	08
iv	Determination of blood groups and Rh factor determination. Demonstration of Pregnancy test, Widal test.	08
V	Antibiotic sensitivity test and MIC determination, Demonstration of antibiotic resistance, Maintenance and preservation of pure culture.	08

Suggested Readings:

1. Jawetz, Melnick, & Adelberg's Medical Microbiology by Carroll KC, Hobdon JA, Mil


- lerS, Morse SA, Mietzner TA. 27th edition. Lange Publication, 2016.
2. Beginner's guide to comparative genome analysis using next generation sequence data by Edward DJ and Holt KE in *Microbial Informatics and Experimentation*, 3:2, <https://doi.org/10.1186/2042-57833-2>, 2013.
 3. *Bacterial Pathogenesis: A molecular approach* by Wilson BA, Salyers AA, Whitt DD, Winkler ME. 3rd edition. American Society for Microbiology Press, Washington, DC USA, 2011.
 4. *Bacterial Pathogenesis: Molecular and Cellular Mechanisms* by Loch C, Simonet M, Caister Academic Press, 2012.
 5. *Molecular Microbiology: Diagnostic Principles and Practice* by Persing DH, Tenover FC, Hayden R, Leven M, Miller MB, Nolte FS, Tang YW, Belkum AAV. 3rd edition. Washington, American Society for Microbiology Press, 2016
 6. *Infectious Disease Epidemiology: Theory and Practice* by Nelson KE, Williams CM. 4th edition. Jones and Bartlett, 2019.

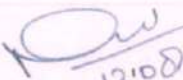
DEPARTMENT OF ENVIRONMENTAL SCIENCE
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003




Value Added Course
On
Environmental Pollution and Human Health

Course Code: VENV005


12/08/2020
Course Coordinator


12.08.20
Head
Department of Environmental Science


12.08.20
Dean
Faculty of Science

About the value-added course

During the twentieth century, global expansion, continued industrialization, and rapid population growth contributed significantly to a number of global concerns, one of which was environmental change. These environmental changes include key global challenges such as climate change, ozone depletion, ecological alterations, decreasing biodiversity, natural resource depletion, and land degradation. These changes continue to endanger humanity's health and well-being as the population grows and consumption rises. Human actions have a direct impact on the environment, causing a variety of major issues such as pollution. Environmental pollution is a problem that has a negative impact on human health. Environmental difficulties are one of the most critical challenges that humanity faces in today's world, among many others. Pollution is everywhere, and you hear it all the time, but what exactly is environmental pollution? Environmental contamination comes in many forms, including air, water, land, noise, radioactive, thermal, and light pollution. While some may have a minor impact, others may have a significant impact on the population. Pollution of any form is hazardous to humans and other living entities such as plants and animals. For many years, scientists have focused on and investigated the impact of pollution on human health. Several study results from extremely contaminated places around the world suggest the potential health effects of high levels of environmental pollution. The link between the two is unavoidable. The principal environmental hazards that pose significant threats to living species, particularly human health, are air, water, and land pollution.

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DEPARTMENT OF ENVIRONMENTAL SCIENCE

Veer Bahadur Singh Purvanchal University, Jaunpur-222003

Value Added Course on Environmental Pollution and Human Health

Syllabus

Value Added Course on Environmental Pollution and Human Health

Teaching Hours: 30 Hrs

Course Code: VENV005

ENVIRONMENTAL POLLUTION AND HUMAN HEALTH		Time in hours (30hr)
Unit 1:	Introduction Definition of pollution; pollutants; classification of pollutants.	6hr
Unit 2:	Air & Noise pollution Ambient air quality: monitoring and standards (National Ambient Air Quality Standards of India); air quality index; sources and types of pollutants; indoor air pollution: sources and effects on human health. Noise pollution-sources; physical and mental health; control measures.	6hr
Unit 3:	Water pollution Sources of surface and ground water pollution; water quality parameters and standards; organic waste and water pollution; eutrophication; COD, BOD, DO; effect of water contaminants on human health, water borne diseases; concept and working of effluent treatment plants. Marine resources and their importance.	6hr
Unit 4:	Soil pollution Causes of soil pollution and degradation. Radioactive material and sources of radioactive pollution; effect of radiation on human health thermal pollution and its effects.	6hr

Unit 5:	Pollution Pollution control mechanism of air, water, soil and noise. Activated Sludge Process (ASP) - Trickling Filters - oxidation ponds, fluidized bed reactors, membrane bioreactor neutralization, ETP sludge management; Ganga Action Plan; Yamuna Action Plan; implementation of CNG in NCT of Delhi.	6hr
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Paper II: Practical: All the items included in theory.

Suggested Books:

1. The Atmosphere: An Introduction to Meteorology- Frederick K Lutgens & Edwrd J
2. Green House and Earth Annika Nilsson
3. Environmental sciences Denial d chiras
4. Environmental sciences Ginger smith
5. Ozone in the Free Atmosphere Robert C. Whitten & Sheos Prasad
6. Water Pollution V.K. Kudesia & Emminual Pulmen
7. Aquatic Pollution Edward A -laws
8. Surface water pollution and its control K V Ellis

Roach
 Natural Resources Management & Sustainability
 Biodiversity & Conservational Biology

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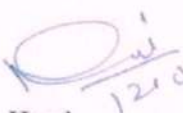
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Veer Bahadur Singh Purvanchal University,
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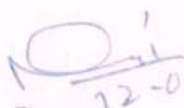


Value Added Course
On
Eco-tourism & Science Communication

Course Code: VENV002


12/09/2020
Course Coordinator


12.08.20
Head
Department of Environmental Science


12-08-20
Dean
Faculty of Science

About the value-added course

Ecotourism is a type of tourism that involves responsible travel to natural places, conservation of the environment, and improvement of the local people's well-being. Its goal may be to educate the traveller, contribute cash for ecological conservation, directly help local economic development and political empowerment, or to create appreciation for diverse cultures and human rights. Ecotourism has been regarded as an important undertaking by environmentalists since the 1980s, in order for future generations to visit destinations generally undisturbed by human involvement. Ecotourism may concentrate on educating visitors about local habitats and natural surrounds with an emphasis on ecological conservation. Some define ecotourism as the endeavour to provide economic opportunities that make natural resource conservation financially feasible. Ecotourism, in general, deals with interactions with biotic components of natural ecosystems. Ecotourism is concerned with socially responsible travel, personal development, and environmental sustainability. Ecotourism usually entails visiting places where the principal attractions are flora, fauna, and cultural heritage. Ecotourism is meant to provide tourists with an understanding of how humans affect the environment and to promote a greater appreciation for our natural environments. Ecotourism attempts to have as little environmental impact as possible on the locations visited. Ecotourism promotes environmental stewardship while simultaneously providing socioeconomic benefits to the populations that visit the area. Science communication refers to a range of approaches that aim to make scientific concepts, methods, information, and research more accessible, comprehensible, and valuable to non-expert audiences. Audiences for science communication should not have any prior interest or educational background in science, technology, engineering, or mathematics. There are no restrictions on how or to whom science can be communicated. It is a developing multidisciplinary field that can draw on a wide range of communication disciplines and styles. Science communication is the academic study of communicating science to various audiences, drawing on a wide range of disciplines in the social sciences, humanities, and sciences. This comprises studies, critiques, and discussions about scientific communication models used by scientists.


12/08/2020



DEPARTMENT OF ENVIRONMENTAL SCIENCE

Veer Bahadur Singh Purvanchal University, Jaunpur-222003

Value Added Course on **Eco-tourism & Science Communication**

Syllabus

Value Added Course on **Eco-tourism & Science Communication**

Teaching Hours: 30 Hrs

Course Code: VENV002

NATURAL RESOURCES MANAGEMENT AND SUSTAINABILITY		
		Time in hours (30hr)
Unit 1:	Introduction and concept of Ecotourism, Sector of Ecotourism industry, Chronological development of Ecotourism	6hr
Unit 2:	QUEBEC declaration on ecotourism, Opportunities of Ecotourism in India	6hr
Unit 3:	Ecotourism practices, Eco-labeling and green washing, Examples and case studies of Ecotourism	6hr
Unit 4:	Introduction of Science communication, comment of science communication, Environmental Communication	6hr
Unit 5:	Essentials of Science communication and case studies	6hr

Paper II: Practical: All the items included in theory.

Suggested Books:

1. Introduction to forestry and Natural Resources Donald L Grebner, Pete Bettinger
1. Environmental Communication Mishra & Upadhyay
2. Environmental Communication and the Public Sphere Sixth Edition, Phaedra C. Pezzullo - University of Colorado, Boulder, USA, Robert Cox - The University of North Carolina at Chapel Hill, USA


12/08/2020



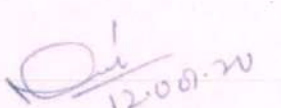
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Jaunpur, Uttar Pradesh-222003

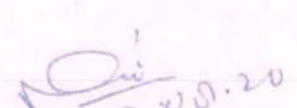


Value Added Course
On
Green Technologies and Environmental Safety

Course Code: VENV003


12/08/2020
Course Coordinator


12.08.20
Head
Department of Environmental Science


12.08.20
Dean
Faculty of Science

About the value-added course

Green growth is an excellent technique for long-term development. It paves the way for combating environmental challenges and the overuse of natural resources. Since the consideration of climate change and environmental damage, green growth has garnered a lot of attention. The World Bank, the Organization for Economic Cooperation and Development (OECD), and the Among the institutions taking the green economy seriously are the World Bank, the Organization for Economic Cooperation and Development (OECD), and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Environmental safety is defined by the guidelines, policies, and practises put in place to ensure that the surrounding environment is free of hazards that endanger the safety and well-being of workers and employees, residents near industrial operations, and the prevention of unintentional environmental damage. Industrial facilities, work places, and laboratories are located nearby. Environmental safety is critical for any industrial activity since negligence and noncompliance increase the danger of injuries, diseases, and unintentional environmental emissions.

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Veer Bahadur Singh Purvanchal University, Jaunpur-222003

Value Added Course on Green Technologies and Environmental Safety

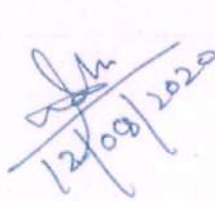
Syllabus

Value Added Course on Green Technologies and Environmental Safety

Teaching Hours: 30 Hrs

Course Code: VENV003

Green Technologies and Environmental Safety	
	Time in hours (30hr)
Unit 1: Green infrastructure, planning and economy Concept of green technology, Chronological development of green technology, green belts.	6hr
Unit 2: Applications of green technologies Introduction to green chemistry; principles and recognition of green criteria in chemistry; bio- degradable and bio-accumulative products in environment, photodegradable plastic bags and Environmental risk analysis	6hr
Unit 3: Environmental Safety Introduction to industrial environment; plant maintenance, hazardous waste operations and emergency responses,	6hr


12/09/2020



environmental control and chemical safety , environmental exposure, occupational health and safety act(OSHA).	
Unit 4: Green future Agenda of green development	6hr
Unit 5: Innovation of Green technology Emphasis on innovation for green future; role of advancement in science in developing environmental friendly technologies.	6hr

Paper II: Practical: All the items included in theory.

Suggested Books:

1. Conservation of Natural Resources, Prentice Hall Publication Klee, G.A. 1991.
2. Anastas,
3. Green Chemistry: Theory & Practice. Oxford University Press P.T. & Warner,J.C. 1998.
4. Boeker,E.&Grondelle,R.2011.EnvironmentalPhysics:SustainableEnergyandClimate Change.Wile
5. Renewable Energy: Power for Sustainable Future. Oxford University Press. Boyle G., 2004.

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Department of Biotechnology
Faculty of Science
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003




Value Added Course
On
'Mushroom Cultivation Technology'

Course code: VBT001


14.08.20
Course Coordinator


14.08.20
Head
Department of Biotechnology


14.08.20
Dean
Faculty of Science

Mushroom Training & Research Centre
Faculty of Science
Veer Bahadur Singh Purvanchal University, Jaunpur-222003
Value Added Course in Mushroom Cultivation Technology

MUSHROOM CULTIVATION TECHNOLOGY

Introduction

Since long ago mushrooms are being used as food and medicine and contains all essential amino acids, vitamin B complex, iron, calcium, potassium, phosphorous, folic acid and other biochemical compounds. It is also a good source of dietary fibre. It is regarded as highly edible even for people suffering from cholesterol problems, heart diseases, diabetes and cancer. Mushroom cultivation has now become a source for income generation since there is a large demand for healthy and quality food products. Many value added products are also obtained from mushrooms. The cultivation procedure is characterized by small initial investment and year round production. It is an eco-friendly agricultural practice. Considering the commercial viability and self-employment potential of mushroom cultivation and marketing.

SYLLABUS

MUSHROOM CULTIVATION TECHNOLOGY

Value Added Course in Mushroom Cultivation Technology

Course code: VBT001

Teaching Hours: 30 Hrs

Unit	Contents	Teaching Hours
I	Introduction – History of mushroom cultivation; Classification and distribution of mushroom; life cycle of mushroom. Identification of poisonous mushrooms.	4
II	Spawn preparation - Isolation of pure culture; Nutrient media for pure culture; layout of spawn preparation room; raw material of spawn; sterilization; preparation of mother spawn and multiplication.	5
III	Cultivation of mushroom, layout of mushroom shed - small scale and large scale production unit. Types of raw material – preparation and sterilization; Mushroom bed preparation – maintenance of mushroom shed; harvesting method and preservation of mushrooms.	7
IV	Nutrient values of mushroom – protein, carbohydrate, fat, fibre, vitamins and amino acids contents; short and long term storage of mushroom; preparation of various dishes from mushroom. Medicinal value of mushroom – cultivation, extraction, isolation and identification of active principle from mushroom. Pharmacological and economic values of mushroom.	8

V	Cultivation of following types of mushroom – oyster mushroom, button mushroom and any one medically valuable mushroom.	6
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Practical: All the items included in theory.

SUGGESTED BOOKS

1. Paul Stamets, J.S. and Chilton, J.S. 2004. Mushroom cultivation A practical guide to growing mushrooms at home, Agarikon Press.
2. Tewari and Pankaj Kapoor S.C. 1993. Mushroom cultivation. Mittal Publication. Delhi.
3. Marimuth et al., 1991. Oyster Mushrooms. Dept. of Plant pathology, TNAU, Coimbatore.
4. Nita Bahl. 1988. Hand book of Mushrooms, 2nd Edition, Vol I & II.
5. Shu Fing Chang, Philip G. Miles and Chang, S.T. 2004. Mushrooms Cultivation, nutritional value, medicinal effect and environmental impact. 2nd ed., CRC press.

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DEPARTMENT OF ENVIRONMENTAL SCIENCE
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003

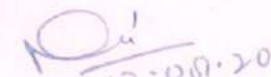


Value Added Course
On
Biodiversity & Conservational Biology

Course Code: VENV001


12/08/2020
Course Coordinator


12.08.20
Head
Department of Environmental Science


12.08.20
Dean
Faculty of Science

About the value-added course

Biodiversity conservation, or the practice of maintaining and preserving the world's richest and diversity of species, habitats, ecosystems, and genetic variation, is critical for our health, wealth, food, fuel, and services. It is crucial in assisting many aspects of growth. Food security is dependent on natural resources, which are the foundation of food production. Biodiversity conservation safeguards plant, animal, microbial, and genetic resources used in food production, agriculture, and ecosystem activities such as fertilizer application, nutrient recycling, pest and disease management, erosion control, and pollination of crops and trees. Simultaneously, unsustainable agricultural production and the exploitation of wild species for food or fuel have the potential to destroy biodiversity. Conservation of biodiversity is critical for economic growth and poverty alleviation. The vast majority of the world's poor live in rural areas and rely on woods, water, marshes, farms, and pastures for survival. For income and subsistence, around 1.6 billion people worldwide rely on forests and non-timber products. 2.6 billion people rely on fishing for protein and a living in the developing world alone. Seafood is also the most traded food commodity on a global scale. Climate change can be mitigated by conserving biodiversity.

Preserving ecosystems can help to minimize the quantity of CO₂ emitted into the atmosphere. The conservation of mangroves and other coastal ecosystems can help to mitigate the severe effects of climate change, such as flooding and storm surges. Initiatives that lessen the vulnerability of species and ecosystems to the effects of climate change can protect vital ecosystem services such as air and water purification, pollination and food production, and carbon sequestration. Natural resources that are scarce or contested are frequently at the heart of conflict. Mis-management of natural resources and destruction of biodiversity can exacerbate poverty and instability. Helping communities and individuals acquire the rights to use natural resources, as well as involving local communities in the responsible management of such resources, can help to prevent or reduce conflict and provide chances for economic growth.

12/08/2020

12/08/20

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Veer Bahadur Singh Purvanchal University, Jaunpur-222003

Value Added Course on Biodiversity & Conservational Biology

Syllabus

Value Added Course on Biodiversity & Conservational Biology

Teaching Hours: 30 Hrs

Course Code: VENV001

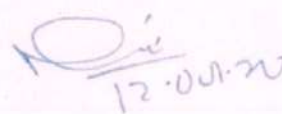
BIODIVERSITY & CONSERVATION BIOLOGY	
	Time in hours (30hr)
Unit 1: Biodiversity patterns and estimation: Definition; Types; Spatial patterns: latitudinal and elevation trends in biodiversity; temporal patterns: seasonal fluctuations in biodiversity patterns.	6h
Unit 2: Importance of biodiversity: Economic values - medicinal plants, drugs, fisheries and livelihoods; ecological services - primary productivity, role in hydrological cycle, biogeochemical cycling; ecosystem services .	6h
Unit 3: Threats to biodiversity: Natural and anthropogenic disturbances; habitat loss, habitat degradation, and habitat fragmentation; climate change; pollution; hunting; over-exploitation and deforestation	6h
Unit 4: Conservation of biodiversity: Importance of biodiversity patterns in conservation; In-situ conservation (Biosphere Reserves, National Parks, Wildlife Sanctuaries); Ex-situ conservation (botanical gardens, zoological gardens, gene banks, seed and seedling banks, pollen culture, tissue culture and DNA banks).	6h
Unit 5: Biodiversity in India: India as a mega diversity nation; phytogeographic and zoogeographic zones of the country; National Biodiversity Action Plan.	6h

Paper II: Practical: All the items included in theory.

Suggested Books:

- | | |
|--|-------------------------------|
| 1. The Biodiversity of India | Erach Bharucha |
| 2. An advance text book of biodiversity, | |
| 3. Principles and Practices | K.V. Krishnamurthy |
| 4. Hand book of sustainable development | Giles Atkinson, Eric Neumayer |
| 5. Environmental sciences | Ginger smith |
| 6. Green House and Earth | Annika Nilsson |



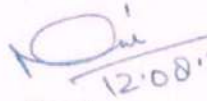


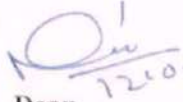
DEPARTMENT OF ENVIRONMENTAL SCIENCE
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003



Value Added Course
On
Natural Hazards & Disaster Management
Course Code: VENV004


12/08/2020
Course Coordinator


12.08.20
Head
Department of Environmental Science


12.08.20
Dean
Faculty of Science



About the value-added course

The human and material losses incurred by such calamities are a substantial impediment to long-term growth. Life and property can be safeguarded by giving accurate predictions and warnings in easily understandable formats, as well as teaching people on how to prepare for such threats before they become disasters. The emphasis is on catastrophe risk reduction: one dollar invested in disaster preparedness can save seven dollars in disaster-related economic losses - a significant return on investment. As signatories to the Sendai Framework for Disaster Risk Reduction 2015-2030, WMO Members have committed to preventing new and reducing existing disaster risk by implementing a suite of integrated and inclusive measures that reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience. Seven global targets have been agreed to help the assessment of global progress in meeting the outcomes and goals of the Sendai Framework, the majority of which have direct consequences for WMO and its Members.

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DEPARTMENT OF ENVIRONMENTAL SCIENCE

Veer Bahadur Singh Purvanchal University, Jaunpur-222003

Value Added Course on Natural Hazards & Disaster Management

Syllabus

Value Added Course on Natural Hazards & Disaster Management

Teaching Hours: 30 Hrs

Course Code: VENV004

NATURAL RESOURCES MANAGEMENT AND SUSTAINABILITY		
		Time in hours (30hr)
Unit 1:	Introduction Resource and reserves; classification of natural resources; renewable and non-renewable resources; resource degradation; resource conservation;	6hr
Unit 2:	Natural resources and conservation Forest resources: economic and ecological importance of forests, forest management strategies, sustainable forestry; water resources: supply, renewal, and use of water resources, freshwater shortages, strategies of water conservation; soil resources conservation.	6hr
Unit 3:	Mineral resources: Mineral resources and the rock cycle; identified resources; undiscovered resources; reserves; types of mining: surface, subsurface, open-pit, dredging, strip; reserve-to-production ratio; global consumption patterns of mineral resources techniques to increase mineral resource supplies; ocean mining for mineral resources; environmental effects of extracting and using mineral resources.	6hr
Unit 4:	Energy resources Resource and conservation-Oil and natural gas formation, solar energy: technology, advantages, passive and active solar heating system, solar thermal systems, solar cells. Resource and conservation-wind energy, hydropower energy, nuclear energy ,ocean thermal energy conversion; geothermal energy, bio energy and tidal energy.	6hr

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Unit 5:	Sustainable energy strategy: Sustainable energy strategy; principles of energy conservation; Indian renewable energy programme.	6hr

Paper II: Practical: All the items included in theory.

Suggested Books:

1. Introduction to forestry and Natural Resources Donald L Grebner, Pete Bettinger
2. Energy and the Environment Robert A Ristinen, Jack P.
3. The environment and sustainability Paul Gannon
4. Natural resources and Environmental Justice Rakuten Kobo
5. Sustainable Utilization of Natural Resources AK Dalai
6. The environmental &
7. Natural Resources Economics Jonathan M Harris and Brian

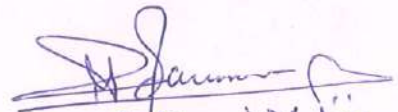
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NO

Value Added Course : VBALLBO1

2020-21 "Basic Knowledge of The Indian Constitution"

- 1 ⇒ Nature and Territory of Union
- 2 ⇒ Citizenship
- 3 ⇒ Fundamental Rights :
 - Right to equality
 - Right to Freedom
 - Right against Exploitation
 - Right to Freedom of Religion
 - Right to Culture & Education
 - Right to Constitutional Remedies
- 4 ⇒ Directive Principles of state Policy
- 5 ⇒ Fundamental duties
- 6 ⇒ Legislatures
- 7 ⇒ Judiciary
- 8 ⇒ Local Bodies
- 9 ⇒ Elections


Mr. Mangal Prasad Yadav
DIRECTOR
D. T. Law Institute
VBSPU, Jaunpur (U.P.)

Department of Microbiology
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003



Value Added Course
On
'Antibacterial Activity of Medicinal Plants'

Course Code: VMICBSC001

2019-20

Dr. S. P. Tiwari
Course Coordinator

Prof. Rajesh Sharma
Coordinator
B.Sc. (BZC Course)

Prof. Ram Narayan
Head
Department of Microbiology

About the value-added course

The use of and search for drugs and dietary supplements derived from plants have accelerated in recent years. Ethnopharmacologists, botanists, microbiologists, and natural-products chemists are combing the Earth for phytochemicals and "leads" which could be developed for treatment of infectious diseases. While 25 to 50% of current pharmaceuticals are derived from plants, none are used as antimicrobials. Traditional healers have long used plants to prevent or cure infectious conditions; Western medicine is trying to duplicate their successes. Plants are rich in a wide variety of secondary metabolites, such as tannins, terpenoids, alkaloids, and flavonoids, which have been found *in vitro* to have antimicrobial properties. Since many of these compounds are currently available as unregulated botanical preparations and their use by the public is increasing rapidly, clinicians need to consider the consequences of patients self-medicating with these preparations. Since the advent of antibiotics in the 1950s, the use of plant derivatives as antimicrobials has been virtually nonexistent. Clinical microbiologists have two reasons to be interested in the topic of antimicrobial plant extracts. First, it is very likely that these phytochemicals will find their way into the arsenal of antimicrobial drugs prescribed by physicians; several are already being tested in humans. It is reported that, on average, two or three antibiotics derived from microorganisms are launched each year. After a downturn in that pace in recent decades, the pace is again quickening as scientists realize that the effective life span of any antibiotic is limited. Worldwide spending on finding new anti-infective agents (including vaccines) is expected to increase 60% from the spending levels in 1993. New sources, especially plant sources, are also being investigated. Second, the public is becoming increasingly aware of problems with the overprescription and misuse of traditional antibiotics. In addition, many people are interested in having more autonomy over their medical care. A multitude of plant compounds (often of unreliable purity) is readily available over-the-counter from herbal suppliers and natural-food stores, and self-medication with these substances is commonplace. The use of plant extracts, as well as other alternative forms of medical treatments, is enjoying great popularity in the late 1990s. It was reported that in 1996, sales of botanical medicines increased 37% over 1995. At the completion of this activity, students will be able to extract suspected antimicrobial compounds and screen them for activity using a modified Kirby-Bauer method.

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Department of Microbiology
Veer Bahadur Singh Purvanchal University, Jaunpur-222003
Value Added Course on 'Antibacterial Activity of Medicinal Plants'

Programme Objectives:

Plants are rich in a wide variety of secondary metabolites, such as tannins, terpenoids, alkaloids, and flavonoids, which have been found in vitro to have antimicrobial properties. Since many of these compounds are currently available as unregulated botanical preparations and their use by the public is increasing rapidly, clinicians need to consider the consequences of patients self-medicating with these preparations. The programme will generate an understanding about drugs from plant sources.

Course Objectives:

At the completion of this activity, students will be able to:

- Use aseptic techniques in handling microorganisms and other materials
- Use appropriate microbiological media and test systems
- Isolate colonies Record experimental observations
- Extract suspected antimicrobial compounds and screen them for activity using a modified Kirby-Bauer method.
- Integrate experimental results and folkloric claims on the bioactivity of medicinal plants

Syllabus

Value Added Course on 'Antibacterial Activity of Medicinal Plants'

Teaching Hours: 30 Hrs

Course Code: VMICBSC001

Contents	Teaching Hours
<ul style="list-style-type: none">• Use of aseptic techniques in handling microorganisms and other materials• Sterilization of glassware, media, and other materials• Maintaining sterility of materials• Aseptic transfer and subculturing of microbial samples	08
<ul style="list-style-type: none">• Use of appropriate microbiological media and test systems• Isolation of colonies• Recording experimental observations.	08
<ul style="list-style-type: none">• Estimation of appropriate bacterial density using a MacFarland standard• Use of standard microbiology laboratory equipment correctly• Use the autoclave, oven, laminar flow hood, and incubator	08

<ul style="list-style-type: none"> • Extraction of plant leaves • Preparation of plant disk • Preparation of inoculum • Reading of results 	06
<p>Suggested Readings</p> <ol style="list-style-type: none"> 1. Microbiology: A laboratory manual by JG Cappucino, C.T. Welsh. 11th edition. Pearson. 2017. 	

Assessment.

The activity is assessed by the oral presentation and written test of the students.

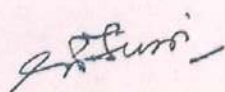
Department of Microbiology
Veer Bahadur Singh Purvanchal University,
Jaunpur, Uttar Pradesh-222003

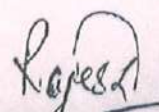


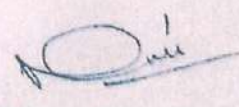
Value Added Course
On
'Introduction to Microbes'

Course Code: VMICBSC002

2019-2020


Dr. S. P. Tiwari
Course Coordinator


Prof. Rajesh Sharma
Coordinator
B.Sc. (BZC Course)


Prof. Ram Narayan
Head
Department of Microbiology

About the value-added course

Microbes are everywhere. They have existed on this planet for over 3 billion years, and are essential for humans to live and function. Pathogens are microbes that cause disease—but not all microbes are pathogens. Many microbes are normal human flora. Inside the human body, there are 10 trillion human cells and 100 trillion bacteria, protozoa, and fungal cells. When these microbes appear in parts of the body where they do not belong, they can cause infection. Microbes are categorized according to their biological classification (also called biological taxonomy). Organisms are classified into seven main categories: kingdom, phylum, class, order, family, genus and species. Many microorganisms are known by their family, genus and species. For example, bacteria are named by their genus and species, such as *Escherichia coli*, *Staphylococcus aureus*, and *Mycobacterium tuberculosis*. Some families of bacteria are known pathogens in health care, such as the Enterobacteriaceae family. Microbes can be divided into five categories. In this course, the students will be introduced to basic microbiological principles, fundamental laboratory diagnostics and mechanisms by which microbes transmit and cause diseases.



Department of Microbiology
Veer Bahadur Singh Purvanchal University, Jaunpur-222003
Value Added Course on 'Introduction to Microbes'

Programme Objectives:

Microbes are living organisms that can be beneficial, neutral or harmful to humans. In this programme, students will learn about how disease-causing microbes, called pathogens, are classified, identified and transmitted. Students will be introduced to basic microbiological principles, fundamental laboratory diagnostics and mechanisms by which microbes transmit and cause diseases.

Course Outcome:

At the completion of this activity, students will be able to:

- Define microbes and other microbiology terms
- describe the main groups of microorganisms;
- Use aseptic techniques in handling microorganisms and other materials
- Use appropriate microbiological media and test systems
- Isolate colonies and record experimental observations

Syllabus

Value Added Course on 'Introduction to Microbes'

Teaching Hours: 30 Hrs

Course Code: VMICBSC002

Contents	Teaching Hours
<ul style="list-style-type: none">• Use of standard microbiology laboratory equipment correctly• Use the autoclave, oven, laminar flow hood, and incubator	06
<ul style="list-style-type: none">• Aseptic techniques in handling microbes• Sterilization of glassware, media, and other materials• Maintaining sterility of materials• Aseptic transfer and subculturing of microbial samples	06
<ul style="list-style-type: none">• Use of appropriate microbiological media• Isolation and cultivation of bacteria and fungi• Isolation of Bacteriophages.	12
<ul style="list-style-type: none">• Estimation of appropriate bacterial density using a MacFarland standard	06

Suggested Readings

1. Microbiology: A laboratory manual by JG Cappucino, C.T. Welsh. 11th edition. Pearson. 2017.

Assessment. The activity is assessed by the oral presentation and written test of the students.

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Computer Science & Engineering
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Introduction to Data Science)

(Effective from the Session 2019-20)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Introduction to Data Science (VCSE004)

Course Description and Objectives:

- An understanding of the data operations
- An overview of simple statistical models and the basics of machine learning techniques of regression.
- An understanding good practices of data science
- Skills in the use of tools such as python, IDE
- Understanding of the basics of the Supervised learning

Course Outcomes:

- Describe what Data Science is and the skill sets needed to be a data scientist
- Explain the significance of exploratory data analysis (EDA) in data science
- Ability to learn the supervised learning, SVM
- Apply basic machine learning algorithms (Linear Regression)
- Explore the Networks, PageRank

Syllabus

UNIT - I

08 Hours

Introduction, Toolboxes: Python, fundamental libraries for data Scientists. Integrated development environment (IDE). Data operations: Reading, selecting, filtering, manipulating, sorting, grouping, rearranging, ranking, and plotting.

UNIT - II

06 Hours

Descriptive statistics, data preparation. Exploratory Data Analysis data summarization, data distribution, measuring asymmetry. Sample and estimated mean, variance and standard score. Statistical Inference frequency approach, variability of estimates, hypothesis testing using confidence intervals, using p values

UNIT - III

06 Hours

Supervised Learning: First step, learning curves, training-validation and test. Learning models generalities, support vector machines, random forest. Examples

UNIT - IV

05 Hours

Regression analysis, Regression: linear regression simple linear regression, multiple & Polynomial regression, Sparse model. Unsupervised learning, clustering, similarity and distances, quality measures of clustering, case study.

UNIT - V

05 Hours

Network Analysis, Graphs, Social Networks, centrality, drawing centrality of Graphs, PageRank, Ego-Networks, community Detection

TEXT/REFERENCES BOOK:

1. Introduction to Data Science a Python approach to concepts, Techniques and Applications, Igal, L;Seghi', S. Springer, ISBN:978-3-319-50016-4
2. Data Analysis with Python A Modern Approach, David Taieb, Packt Publishing, ISBN-9781789950069
3. Python Data Analysis, Second Ed., Armando Fandango, Packt Publishing, ISBN: 9781787127487

**V.B.S. PURVANCHAL UNIVERSITY,
JAUNPUR**



Department of Mechanical Engineering
Faculty of Engineering and Technology

Scheme & Syllabus

For
Value Added Course
(ENGLISH FOR RESEARCH PAPER WRITING)

(Effective from the Session 2019-20)



Value Added Course
English for research paper writing (MEMTTE-A01)

Course Outcomes:

By the end of course the students will be able to

- ❖ Demonstrate writing meaningful sentences and coherent paragraphs
- ❖ Show conciseness, clarity and avoid redundancy in writing
- ❖ Summarize, evaluate literature, and write methodology, results and conclusion
- ❖ Describe how to develop title, write abstract and introduction
- ❖ Apply correct style of referencing and use punctuation appropriately

Learning Outcomes:

- Explain planning and preparation required for research communication
- Use appropriate word order and write short sentences
- Demonstrate writing coherent paragraphs and sentences
- Demonstrate conciseness, clarity and avoid redundancy
- Describe the process of literature survey
- Paraphrase and avoid plagiarism
- Explain how to write abstract and introduction
- Describe how to summarize and evaluate literature
- Summarize and evaluate literature
- Show how to write methodology, discussions, results and conclusion
- Apply correct style(s) of in-text citation and bibliography

Syllabus		
Units	CONTENTS	Hours
1	Planning and Preparation, Word Order, Breaking up long sentences, Structuring Paragraphs and Sentences, Being Concise and Removing Redundancy, Avoiding Ambiguity and Vagueness	5
2	Clarifying Who Did What, Highlighting Your Findings, Hedging and Criticising, Paraphrasing and Plagiarism, Sections of a Paper, Abstracts. Introduction	5
3	Review of the Literature, Methods, Results, Discussion, Conclusions, The Final Check.	5
4	key skills are needed when writing a Title, key skills are needed when writing an Abstract, key skills are needed when writing an Introduction, skills needed when writing a Review of the Literature,	5
5	skills are needed when writing the Methods, skills needed when writing the Results, skills are needed when writing the Discussion, skills are needed when writing the Conclusions	5
6	useful phrases, how to ensure paper is as good as it could possibly be the first- time submission	5

Suggested Studies:

1. Goldbort R (2006) Writing for Science, Yale University Press (available on Google Books)
2. Day R (2006) How to Write and Publish a Scientific Paper, Cambridge University Press

3. Highman N (1998), Handbook of Writing for the Mathematical Sciences, SIAM.
Highman's
book .
4. Adrian Wallwork , English for Writing Research Papers, Springer New York
Dordrecht
Heidelberg London, 2011

**V.B.S. PURVANCHAL UNIVERSITY,
JAUNPUR**



Department of Mechanical Engineering
Faculty of Engineering and Technology

Scheme & Syllabus

For
Value Added Course
(VALUE EDUCATION)

(Effective from the Session 2019-20)



Value Added Course
Value education (MEMTTE-A02)

Course Outcomes:

By the end of course the students will be able to

- ❖ Understand the meaning of values and culture
- ❖ Develop as socially responsible
- ❖ Create a communal harmonious society
- ❖ Identify the power of thoughts and words
- ❖ Correlate the relationship between values and human rights

Learning Outcomes:

- Acquire the knowledge of nature, concepts of Values
- Explain the aims and objectives of value education.
- Develop skill to integrate value education in the present curriculum.
- Understand the various sources of Values.
- Describe the role of various agencies in fostering values.
- Discuss the need for Value Education at the tertiary level
- To understand the moral values that ought to guide the Engineering profession,
- Resolve the moral issues in the profession, and
- Justify the moral judgment concerning the profession.
- It is intended to develop a set of beliefs, attitudes, and habits that engineers should display concerning morality.

Syllabus

Unit	Content	Hours
1	<ul style="list-style-type: none">• Values and self-development –Social values and individual attitudes. Work ethics, Indian vision of humanism.• Moral and non- moral valuation. Standards and principles.• Value judgements	5
2	<ul style="list-style-type: none">• Importance of cultivation of values.• Sense of duty. Devotion, Self-reliance. Confidence, Concentration. Truthfulness, Cleanliness.• Honesty, Humanity. Power of faith, National Unity.• Patriotism.Love for nature ,Discipline	7
3	<ul style="list-style-type: none">• Personality and Behavior Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline.• Punctuality, Love and Kindness.• Avoid fault Thinking.• Free from anger, Dignity of labour.• Universal brotherhood and religious tolerance.• True friendship.• Happiness Vs suffering, love for truth.• Aware of self-destructive habits. 5• Association and Cooperation.• Doing best for saving nature	10

4	<ul style="list-style-type: none"> • Character and Competence –Holy books vs Blind faith. • Self-management and Good health. • Science of reincarnation. • Equality, Nonviolence ,Humility, Role of Women. • All religions and same message. • Mind your Mind, Self-control. • Honesty, Studying effectively 	8
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Suggested reading

- [1] Chakroborty, S.K. “Values and Ethics for organizations Theory and practice”, Oxford University Press, New Delhi
- [2] Nagarazan. A Text Book on Professional Ethics and Human Values. New Age International limited Publishers, 2006.
- [3] R.P.Shukla, value education and human rights, sarup & sons, 2004
- [4] David Brooks. The Social Animal: The Hidden Sources of Love, Character, and Achievement. Random House, 2011.

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(MS Word and Excel)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Value Added Course
MS Word and Excel (VIT004)**

Course Objectives:

1. Learn to handle small and big data better.
2. Employability increases.
3. Having advanced Excel knowledge makes valuable employee.

Course Outcomes:

The student will be able to:

1. Discover how does MS Office works really, what makes MS Office work.
2. To be able to create documents for printing and sharing.
3. To be able to create and share presentations.
4. To be able to manage and store data in a spreadsheet.

Syllabus

06 Hours

Unit-I: Introduction to Windows and MS Office, Introduction to Ms-Word- Features, Introduction to Ms-Power Point- Features, Introduction to Ms-Excel-Excel Features, Different applications in MS Office.

08 Hours

Unit-2: Introduction to MS Word, Creating and saving a document, Page setup, Scrolling through a document, Office Button, Closing a document. Home tab- Cut, Copy & Paste, Applying font style, Line Spacing, Paragraph formatting.

08 Hours

Unit- 3: Insert tab- Header & Footer, Page No., Page break, Border & shading, Watermark, Paragraph spacing. Reference Tab- Table of Content, Foot notes, Table of Figure, Index, Table of Authorities.

08 Hours

Unit – 4: Excel- Introduction of Starting Excel, Introduction to concept of Worksheet & Workbook, Sheet tab, Row, Column & Cells, Name box, Status bar, Active cell. Formatting Columns & Rows (Selecting, Inserting, Deleting, Hide, Unhide), Change the font size and alignments.

Reference Books:

1. "Microsoft Office 2013 Bible" by Jennifer Ackerman Kettell, Lisa A. Bucki, Alison Barrows, Allen Taylor, and Richard Kusleika
2. "Microsoft Office 365: The Essentials" by Chris Kelly

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Green Computing)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Green Computing (VIT003)

Course Objectives:

1. Study the concepts related to Green IT.
2. Able to understand Green devices and hardware along with software methods.
3. Able to understand green enterprise activities and managing the green IT and various laws, standards, protocols along with outlook of green IT.

Course Outcomes:

The student will be able to:

1. Discuss Green IT with its different dimensions and Strategies.
2. Describe Green devices and hardware along with its green software methodologies.
3. Discuss the various green enterprise activities, functions and their role with IT.
4. Discuss the various laws, standards and protocols for regulating green IT.

Syllabus

UNIT I: Green IT: An Overview:	12Hrs
Introduction, Environmental Concerns and Sustainable Development, Environmental Impacts of IT, Green IT, Holistic Approach to Greening IT, Greening IT, Applying IT for enhancing Environmental sustainability, Green IT Standards and Eco-Labeling of IT, Enterprise Green IT strategy, Green IT: Burden or Opportunity?	
UNIT II: Green Devices and Hardware with Green Software:	05Hrs
Green Devices and Hardware: Introduction, Life Cycle of a device or hardware, Reuse, Recycle and Dispose. Green Software: Introduction	
UNIT III: Green Enterprises and the Role of IT:	08 Hrs
Introduction, Organization and Enterprise Greening, Information systems in Greening Enterprises, Greening Enterprise: IT Usage and Hardware	
UNIT IV: Regulating the Green IT: Laws, Standards and Protocols:	05 Hrs
Introduction, The regulatory environment and IT manufacturers, Non regulatory government initiatives, Industry associations and standards bodies.	

Reference Books:

- Harnessing Green IT Principles and Practices , San Murugesan, G.R. Gangadharan
Wiley Publication, ISBN:9788126539680

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Computer Science & Engineering
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Fundamentals of Digital Computer)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Fundamentals of Digital Computer (VCSE001)

Course Description and Objectives:

The course aims to teach a student the fundamental components used in a Digital Computer and its functioning.

Course Outcomes:

The student will be able to:

- Identify the logic gates and their functionality.
- Perform number conversions from one system to another system.
- Design basic electronic circuits (combinational circuits).
- Perform a comparative analysis of the components of different memory units.
- Perform number conversions.

Skills:

- Synthesize Boolean algebra.
- Construct combinational circuits like decoders, encoders, multiplexers etc...
- Analyze counters, shift registers etc...
- Construction of PLA and PLD.

Activities:

- Design of logical circuits using universal gates and basic gates.
- Reduction of Boolean function using K-maps.
- Construction of one-stage ALU circuit.
- Design of the n-bit decoder and encoder.
- Design of combinational circuits using different types of flip-flops.
- Design of PLA for the given Boolean expression

Syllabus

UNIT - I NUMBER SYSTEM AND CODES: Decimal Numbers, Binary Numbers, Decimal to Binary Conversions, Binary Arithmetic, 1's and 2's complements of Binary Numbers, Signed Numbers, Arithmetic Operations with Signed numbers, Hexadecimal Numbers, Octal Numbers, Digital Codes, Error Detection Codes.	08 Hours
UNIT - II LOGIC GATES: The Inverter, The AND gate, The OR gate, The NAND gate, NOR gate, The Exclusive-OR gate and Exclusive-NOR gate; Boolean Algebra and Logic Simplification – Boolean Operations and Expressions, Laws and Rules, DeMorgan's Theorems, Boolean Expressions and Truth Tables, The Karnaugh Map, SOP minimizations.	06 Hours
UNIT - III COMBINATIONAL LOGIC ANALYSIS: Basic combinational Logic Circuits, Implementing Combinational Logic, The Universal Property of NAND and NOR Gates. Functions of Combinational Logic - Basic Adder, Parallel Binary Adders, Comparators, Decoders, Encoders, Code Converters, Multiplexers, Parity Generator/Checkers.	06 Hours
UNIT - IV LATCHES AND FLIP-FLOPS: Latches, Edge Triggered Flip-Flops, Flip-Flop Operating characteristics, Flip-Flop Applications, Registers, Counters.	05 Hours
UNIT - V MEMORY AND STORAGE: Memory Basics, The RAM, The ROM, Programmable ROMs, The Flash Memory, Memory Expansion, Special Types of Memories, Magnetic and Optical Storage.	05 Hours

TEXT BOOK:

Floyd, Thomas L, "Digital Computer Fundamentals", 10th Edition, University Book Stall, 1997.

REFERENCE BOOKS:

1. Malvino, Paul Albert and Leach, Donald P, "Digital Principles and Applications", 4th Edition, TMH, 2000.
 2. Malvino, Paul Albert and Leach, Donald P, "Digital Computer Fundamentals", 3rd Edition, TMH, 1995.
- Bartee, Thomas C, "Digital Computer Fundamentals", 6th Edition, TMH, 1995

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Web Designing)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Web Designing (VIT001)

Course Outcomes

Candidates will be able to:

1. Discover how does web works really, what makes web sites work.
2. Employ fundamental computer theory to basic programming techniques.
3. Create an Information Architecture document for a web site.
4. How to and where to start research, planning for website
5. Use fundamental skills to maintain web server services required to host a website.

Course Objectives:

1. Understand the principles of creating an effective web page
2. Develop skills in analyzing the usability of a web site.
3. Understand how to plan and conduct user research related to web usability.
4. Learn the language of the web: HTML and CSS.

Course Contents:

Unit-I: Web Design Principles : Basic Principles involved in developing a web site, Planning process, Five Golden rules of Web Designing, World Wide Web, Why create a web site, Web Standards 06 Hours

Unit-2: Introduction to HTML: What is HTML, HTML Documents, Basic structure of an HTML document, Creating an HTML document, Mark up Tags, Heading-Paragraphs, Line Breaks, HTML Tags. Elements of HTML: Introduction to elements of HTML, Working with Text, Working with Lists, Tables and Frames; Working with Hyperlinks, Images and Multimedia; Working with Forms and controls. 08 Hours

Unit- 3: Introduction to Cascading Style Sheets: Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling(Background, Text Format, Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, Box Model(Introduction, Border properties, Padding Properties, Margin properties), CSS Color, Creating page Layout and Site Designs. 08 Hours

Unit – 4: JavaScript introduction: What is JavaScript, Understanding Events, JavaScript Example, and External JavaScript? 08 Hours

Reference Books:

1. Satish Jain, Ambrish K. Rai and M. Geetha, Web Designing and Development, BPB Publications.
2. Hirdesh Bhardwaj, Web Designing.
3. Jon Duckett, HTML & CSS: Design and Build Web Sites

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Hardware Basics)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Hardware Basics (VIT005)

Course Outcomes

Candidates will be able to:

1. Identify the hardware components of a computer.
2. Lists the hardware components such as processor, memory, disk, main board, etc.
3. Explains the features (speed, capacity, etc.)of the hardware components of a computer.
4. Explains the relationships between the components of a computer and how data are transferred among the components.
5. Identify the periferal devices outside computer.

Course Objectives:

1. Understand the principles of Computer Hardware & Peripherals
2. Develop skills for assemble and find faults in hardware.
3. Understand computer architecture.
4. Understanding of different type of connectors and power supply.

Course Contents:

Unit-I: Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors **06 Hours**

Unit-2: Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Cord, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory. **08 Hours**

Unit- 3: Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. **08 Hours**

Unit – 4: External Components Monitors:- CRT, LCD and LED Displays, Printers:- Dot-Matrix Printer, Inkjet Printer, Laser Printer Scanner:- Photo Scanner, Documents Scanner, Bar Cord Scanner Keyboards, Mouse, External Modem, Ports and Connectors, Batteries, Power supply, Pen Drives, SCSI interface devices, Laptop Computers, Digital Advance storage technology. **08 Hours**

Reference Books:

- (1)- Microprocessor Architecture Programming and Application with the 8085 Ramesh Gaonkar Penram International Publication
- (2) - Electronics and Radio Engineering M.L. Gupta Dhanpat rai & Sons, New Delhi
- (3) - PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govinda rajalu, Tata McGraw-Hill Publication
- (4) - PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Computer Science & Engineering
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Full Stack Web Development)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Full Stack Web Development (VCSE005)

Course Description and Objectives:

This course is designed for development of complete web application & website.

Course Outcomes:

The student will be able to:

- Get a deeper understanding of Client Side Programming or in other words the front end development by developing highly responsive web pages
- Learn the industry leading ways to design back end development with least response time
- learn to connect databases with servers.

Skills:

- JavaScript
- BackEnd Development Languages
- Web Architecture
- Database Management Systems
- Fundamentals of Designs
- DevOps

Activities:

- development of complete web application
- design highly responsive web pages
- deployment
- maintenance

Syllabus

UNIT - I

05 Hours

Introduction to Web Development

Client Server Architecture, History of Web, Front End and Back End

HTML

Introduction to HTML, HTML Document structure, Basic Tags, Formatting Tags, More tags, Form Tags,

CSS

Introduction to CSS, CSS Syntax, Ways to write CSS, Text properties, Background Properties, Border Properties, Anchor Properties, more Properties, Position property, Website Layout Design

JavaScript

Introduction to JavaScript, Basics of JS, Control Statements, Popup Boxes, Functions in JS, Events, Event Handling, Form Validation

UNIT - II

10 Hours

Python

Introduction, history, Installation, output instruction, comments, constants, variables, keywords, data types, conversion, operators, user input, if, if else, if elif else, single line if else, while, for, break, continue, pass, range, list, str, tuple, set, dict, functions, recursion, lambda, exception handling, object oriented python, classes and objects, init method, types of functions, types of variables, inheritance, name conflict issues, polymorphism, operator overloading, name mingling, iterators, generators, decorators, basics of file handling.

UNIT - III**10 Hours****Django**

Django Introduction , environment , creating a project , life cycle of Apps , admin interface , creating views , Url mapping , template system , models , page redirection , sending Emails , Generic Views , Form processing , File uploading , Apache Setup , Cookies Handling , Sessions , Caching , Comments , RSS , AJAX

UNIT - IV**05 Hours****Data Base**

intro and types of databases , MySQL database , creating database and table , insert,select,where,order by,delete,drop table, update, Limit, join

AI, ML, data science libraries

NumPy , Pandas , Scipy , Matplotlib

Overview of DevOps

TEXT BOOK:

1. . Randy Connolly, Ricardo Hoar, "Fundamentals of Web Development", 1st Edition, Pearson Education India. (ISBN:978-9332575271)
2. Nicholas C Zakas, "Professional JavaScript for Web Developers", 3rd Edition, Wrox/Wiley India, 2012. (ISBN:978-8126535088)

REFERENCE BOOKS:

3. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd edition, Updated for Python 3, Shroff/O'Reilly Publishers, 2016 (<http://greenteapress.com/wp/thinkpython/>)
4. Guido van Rossum and Fred L. Drake Jr, —An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Computer Science & Engineering
Faculty of Engineering and Technology**

Scheme & Syllabus

For

**Value Added Course
(Information Security)**

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Information Security (VCSE003)

Course Description and Objectives:

This course focuses on the models, tools, and techniques for enforcement of security with some emphasis on the use of cryptography. Students will learn security from multiple perspectives.

Course Outcomes:

The student will be able to:

- Understand and explain the risks faced by computer systems and networks.
- Identify and analyze security problems in computer systems and networks.
- Explain how standard security mechanisms work.
- Develop security mechanisms to protect computer systems and networks.
- Write programs that are more secure.
- Use cryptography algorithms and protocols to achieve computer security.

Syllabus

UNIT - I Introduction to Information Security: Attacks, Vulnerability, Security Goals, Security Services and mechanisms.	04 Hours
UNIT - II Conventional Cryptographic Techniques: Conventional substitution and transposition ciphers, One-time Pad, Block cipher and Stream Cipher, Steganography.	04 Hours
UNIT - III Symmetric and Asymmetric Cryptographic Techniques: DES, AES, RSA algorithms	06 Hours
UNIT - IV Authentication and Digital Signatures: Use of Cryptography for authentication, Secure Hash function, Key management – Kerberos	04 Hours
UNIT - V Program Security : Nonmalicious Program errors – Buffer overflow, Incomplete mediation, Time-of-check to Time-of- use Errors, Viruses, Trapdoors, Salami attack, Man-in-the- middle attacks.	04 Hours
UNIT - VI Security in Networks: Threats in networks, Network Security Controls – Architecture, Encryption, Content Integrity, Strong Authentication, Access Controls, Wireless Security, Traffic flow security, IDS, Email Security – PGP,S/MIME	08 Hours

TEXT BOOK:

1. Security in Computing, Fourth Edition, by Charles P. Pfleeger, Pearson Education.
2. Cryptography And Network Security Principles And Practice, Fourth or Fifth Edition, William Stallings, Pearson.

REFERENCE BOOKS:

1. Modern Cryptography: Theory and Practice, by Wenbo Mao, Prentice Hall.
2. Network Security Essentials: Applications and Standards, by William Stallings. Prentice Hall

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Computer Science & Engineering
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Fundamentals of Digital Marketing)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Fundamentals of Digital Marketing (VCSE006)

Course Description and Objectives:

The aim of the Digital Marketing Course is to provide students with the knowledge about business advantages of the digital marketing and its importance for marketing success; to develop a digital marketing plan; to make SWOT analysis; to define a target group; to get introduced to various digital channels, their advantages and ways of integration. The application of the gained knowledge, skills and competences will help future managers in forming digital marketing plan in order to manage a digital marketing performance efficiently.

Course Outcomes:

The student will be able to:

- Identify the importance of the digital marketing for marketing success.
- To manage customer relationships across all digital channels.
- Build better customer relationships, to create a digital marketing plan and
- Starting from the SWOT analysis and defining a target group, then identifying digital channels.

Skills:

- Basics of computer.
- Basics of E-commerce concept.
- Basics of HTML and CSS.
- SEO Optimization

Activities:

- Creating initial Digital Marketing Plan.
- SWOT Analysis.
- Target Group Analysis.
- Content management.
- Optimization of Web Sites.
- Google Analytics.
- Social Media Marketing and
- Budgeting.

Syllabus

UNIT - I

02 Hours

- Introduction to the Course and Work plan.
- Introduction of the digital marketing.
- Digital vs. Real Marketing.
- Digital Marketing Channels.

UNIT - II

04 Hours

- Creating initial digital marketing plan.
- Content management.
- SWOT analysis.
- Target group analysis.
- EXERCISE: Define a target group (working in groups)

UNIT - III**08 Hours**

- Optimization of Web sites.
- MS Expression Web.
- EXERCISE: Creating web sites, MS Expression (working in groups)

UNIT - IV**08 Hours**

- SEO Optimization.
- Writing the SEO content.
- Exercise: Writing the SEO content (working in groups)
- Google AdWords- creating accounts.
- Google AdWords- types.
- Exercise: Google AdWords (working in groups)

UNIT - V**08 Hours**

- Introduction to CRM.
- CRM platform.
- CRM models.
- Exercise: CRM strategy (working in groups)
- Creating business accounts on YouTube,
- YouTube Advertising.
- YouTube Analytics.
- Facebook Ads, Creating Facebook Ads and Ads Visibility.

TEXT BOOK:

- Diamond, S. (2019). Digital Marketing All-in-One For Dummies. United Kingdom: Wiley.
- Kingsnorth, S. (2016). Digital Marketing Strategy: An Integrated Approach to Online Marketing. United Kingdom: Kogan Page.

REFERENCE BOOKS:

1. Ryan, D., Jones, C. (2012). Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation. United Kingdom: Kogan Page.
2. Ahuja, V. (2015). Digital Marketing. India: Oxford University Press.

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Hardware Basics)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Hardware Basics (VIT005)

Course Objectives:

1. Understand the principles of Computer Hardware & Peripherals
2. Develop skills for assemble and find faults in hardware.
3. Understand computer architecture.
4. Understanding of different type of connectors and power supply.

Course Contents:

Unit-I: Microprocessor System Introduction of System overview, Introduction to Processors, Memory Interfacing, Interfacing I/O Devices, Interfacing Data Converters, Display Interface, Serial I/O and Data Communication, Higher level Processors 06 Hours

Unit-2: Introduction to PC Architecture Study of PC-AT/ATX System, Pentium, Core, Core 2 Duo, Core 2 Duo, I3, I5, I7 Processor Basics of Processor and CPU Block Diagram of Computer and Computer Generation Motherboards, Chipset and Controllers, BIOS and the Boot Process, Computer Memory. 08 Hours

Unit- 3: Internal Components IDE and SATA Devices: Hard Disk Drive and CD/DVDs Drives, SCSI Devices, Floppy Disk, Zip Drive, Backup Drive, Expansion Cards- LAN Card, IDE Card , VGA and SVGA Cards, Sound Card, Interface Cards, I/O cards, Video Cards, USB Card, Fire-Wire Cards, Internal Ports, Cables and Connector Types. 08 Hours

Unit – 4: External Components Monitors:- CRT, LCD and LED Displays, Printers:- Dot-Matrix Printer, Inkjet Printer, Laser Printer Scanner:- Photo Scanner, Documents Scanner, Bar Cord Scanner Keyboards, Mouse, External Modem, Ports and Connectors, Batteries, Power supply, Pen Drives, SCSI interface devices, Laptop Computers, Digital Advance storage technology. 08 Hours

Key Learning Outcomes

Candidates will be able to:

1. Identify the hardware components of a computer.
2. Lists the hardware components such as processor, memory, disk, main board, etc.
3. Explains the features (speed, capacity, etc.)of the hardware components of a computer.
4. Explains the relationships between the components of a computer and how data are transferred among the components.
5. identify the periferal devices outside computer.

Reference Books:

- (1)- Microprocessor Architecture Programming and Application with the 8085 Ramesh Gaonkar Penram International Publication
- (2) - Electronics and Radio Engineering M.L. Gupta Dhanpat rai & Sons, New Delhi
- (3) - PC AND CLONES Hardware, Troubleshooting and Maintenance B. Govinda rajalu, Tata Mc-graw-Hill Publication
- (4) - PC Troubleshooting and Repair Stephen J. Bigelow Dream tech Press, New Delhi

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(MS Word and Excel)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
MS Word and Excel (VIT004)

Course Objectives:

1. Learn to handle small and big data better.
2. Employability increases.
3. Having advanced Excel knowledge makes valuable employee.

Course Contents:

Unit-I: Introduction to Windows and MS Office, Introduction to Ms-Word- Features, Introduction to Ms-Power Point- Features, Introduction to Ms-Excel-Excel Features, Different applications in MS Office. 06 Hours

Unit-2: Introduction to MS Word, Creating and saving a document, Page setup, Scrolling through a document, Office Button, Closing a document. Home tab- Cut, Copy & Paste, Applying font style, Line Spacing, Paragraph formatting. 08 Hours

Unit- 3: Insert tab- Header & Footer, Page No., Page break, Border & shading, Watermark, Paragraph spacing. Reference Tab- Table of Content, Foot notes, Table of Figure, Index, Table of Authorities. 08 Hours

Unit – 4: Excel- Introduction of Starting Excel, Introduction to concept of Worksheet & Workbook, Sheet tab, Row, Column & Cells, Name box, Status bar, Active cell. Formatting Columns & Rows (Selecting, Inserting, Deleting, Hide, Unhide), Change the font size and alignments. 08 Hours

Key Learning Outcomes

Candidates will be able to:

1. Discover how does MS Office works really, what makes MS Office work.
2. To be able to create documents for printing and sharing.
3. To be able to create and share presentations.
4. To be able to manage and store data in a spreadsheet.

Reference Books:

1. "Microsoft Office 2013 Bible" by Jennifer Ackerman Kettell, Lisa A. Bucki, Alison Barrows, Allen Taylor, and Richard Kusleika
2. "Microsoft Office 365: The Essentials" by Chris Kelly

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Green Computing)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Value Added Course
Green Computing (VIT003)**

Course Objectives:

1. Study the concepts related to Green IT.
2. Able to understand Green devices and hardware along with software methods.
3. Able to understand green enterprise activities and managing the green IT and various laws, standards, protocols along with outlook of green IT.

Course Contents:

UNIT I: Green IT: An Overview:	12Hrs
Introduction, Environmental Concerns and Sustainable Development, Environmental Impacts of IT, Green IT, Holistic Approach to Greening IT, Greening IT, Applying IT for enhancing Environmental sustainability, Green IT Standards and Eco-Labeling of IT, Enterprise Green IT strategy, Green IT: Burden or Opportunity?	
UNIT II: Green Devices and Hardware with Green Software:	05Hrs
Green Devices and Hardware: Introduction, Life Cycle of a device or hardware, Reuse, Recycle and Dispose. Green Software: Introduction	
UNIT III: Green Enterprises and the Role of IT:	08 Hrs
Introduction, Organization and Enterprise Greening, Information systems in Greening Enterprises, Greening Enterprise: IT Usage and Hardware	
UNIT IV: Regulating the Green IT: Laws, Standards and Protocols:	05 Hrs
Introduction, The regulatory environment and IT manufacturers, Non regulatory government initiatives, Industry associations and standards bodies.	

Key Learning Outcomes

Candidates will be able to:

1. Discuss Green IT with its different dimensions and Strategies.
2. Describe Green devices and hardware along with its green software methodologies.
3. Discuss the various green enterprise activities, functions and their role with IT.
4. Discuss the various laws, standards and protocols for regulating green IT.

Reference Books:

Harnessing Green IT Principles and Practices , San Murugesan, G.R. Gangadharan Wiley Publication, ISBN:9788126539680

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Web Designing)

(Effective from the Session 2018-19)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Value Added Course
Web Designing (VIT001)**

Course Objectives:

1. Understand the principles of creating an effective web page
2. Develop skills in analyzing the usability of a web site.
3. Understand how to plan and conduct user research related to web usability.
4. Learn the language of the web: HTML and CSS.

Course Contents:

Unit-I: Web Design Principles : Basic Principles involved in developing a web site, Planning process, Five Golden rules of Web Designing, World Wide Web, Why create a web site, Web Standards 06 Hours

Unit-2: Introduction to HTML: What is HTML, HTML Documents, Basic structure of an HTML document, Creating an HTML document, Mark up Tags, Heading-Paragraphs, Line Breaks, HTML Tags. Elements of HTML: Introduction to elements of HTML, Working with Text, Working with Lists, Tables and Frames; Working with Hyperlinks, Images and Multimedia; Working with Forms and controls. 08 Hours

Unit- 3: Introduction to Cascading Style Sheets: Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling(Background, Text Format, Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, Box Model(Introduction, Border properties, Padding Properties, Margin properties), CSS Color, Creating page Layout and Site Designs. 08 Hours

Unit – 4: JavaScript introduction: What is JavaScript, Understanding Events, JavaScript Example, and External JavaScript? 08 Hours

Key Learning Outcomes

Candidates will be able to:

1. Discover how does web works really, what makes web sites work.
2. Employ fundamental computer theory to basic programming techniques.
3. Create an Information Architecture document for a web site.
4. How to and where to start research, planning for website
5. Use fundamental skills to maintain web server services required to host a website.

Reference Books:

1. Satish Jain, Ambrish K. Rai and M. Geetha, Web Designing and Development, BPB Publications.
2. Hirdesh Bhardwaj, Web Designing.
3. Jon Duckett, HTML & CSS: Design and Build Web Sites

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Computer Science & Engineering
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

(Cyber Security)

(Effective from the Session 2017-18)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Value Added Course
Cyber Security (VCSE002)**

Course Description and Objectives:

The course aims to teach a student the fundamental components used in a Digital Computer and its functioning.

Syllabus

Course Objective

1. To secure the information stored and conveyed which is an invaluable resource of any organization
2. To update the knowledge of students in network security issues

Course Outcome

The students gain the most comprehensive knowledge and skills in the Network Security providing an opportunity to equip the Network System Administrators & Information Security Officers to understand the security concerns, vulnerabilities, attacks and to plan and implement the desired e-Security solutions.

MODULE I

(6 Hours)

Networking Concepts Overview- Basics of Communication Systems, transmission Media, ISO/OSI and TCP/IP Protocol Stacks, Local Area Networks, Wide Area Networks, Internetworking, Packet Formats, Wireless Networks.

MODULE II:

(6 Hours)

Information Security Concepts- Information Security Overview, Information Security Services, Types of Attacks, Goals for Security, E-commerce Security, Computer Forensics, Steganography, Security Engineering

MODULE III

(6 Hours)

Security Threats and vulnerabilities- Overview of Security threats, Hacking Techniques, Password Cracking, Insecure Network connections, Malicious Code, Programming Bugs, Cyber crime and Cyber terrorism, Information Warfare and Surveillance

MODULE IV

(6 Hours)

Cryptography- Introduction to Cryptography, Symmetric key Cryptography, Asymmetric key Cryptography, Message Authentication and Hash functions, Digital Signatures, Public Key infrastructure, Diffe-Hellman key exchange protocol, Applications of Cryptography

MODULE V

(6 Hours)

Security Management Practices- Overview of Security Management, Information Classification Process, Security Policy, Risk Management, Security Procedures and Guidelines, Business Continuity and Disaster Recovery

Text Book-

1. Cybersecurity For Beginners- Raef Meeuwisse , May 14, 2015 by Lulu Publishing Services

Reference Books –

- 1.Future Crimes: Inside the Digital Underground and the Battle for our Connected World by Marc Goodman., 2.Spam Nation: The Inside Story of Organized Cybercrime- from Global Epidemic to Your Front Door by 3.Brian Krebs. - Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World by Bruce Schneier

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Computer Science & Engineering
Faculty of Engineering and Technology**

Scheme & Syllabus

For

**Value Added Course
(Information Security)**

(Effective from the Session 2017-18)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Information Security (VCSE003)

Course Description and Objectives:

This course focuses on the models, tools, and techniques for enforcement of security with some emphasis on the use of cryptography. Students will learn security from multiple perspectives.

Course Outcomes:

The student will be able to:

- Understand and explain the risks faced by computer systems and networks.
- Identify and analyze security problems in computer systems and networks.
- Explain how standard security mechanisms work.
- Develop security mechanisms to protect computer systems and networks.
- Write programs that are more secure.
- Use cryptography algorithms and protocols to achieve computer security.

Syllabus

UNIT - I Introduction to Information Security: Attacks, Vulnerability, Security Goals, Security Services and mechanisms.	04 Hours
UNIT - II Conventional Cryptographic Techniques: Conventional substitution and transposition ciphers, One-time Pad, Block cipher and Stream Cipher, Steganography.	04 Hours
UNIT - III Symmetric and Asymmetric Cryptographic Techniques: DES, AES, RSA algorithms	06 Hours
UNIT - IV Authentication and Digital Signatures: Use of Cryptography for authentication, Secure Hash function, Key management – Kerberos	04 Hours
UNIT - V Program Security : Nonmalicious Program errors – Buffer overflow, Incomplete mediation, Time-of-check to Time-of- use Errors, Viruses, Trapdoors, Salami attack, Man-in-the- middle attacks.	04 Hours
UNIT - VI Security in Networks: Threats in networks, Network Security Controls – Architecture, Encryption, Content Integrity, Strong Authentication, Access Controls, Wireless Security, Traffic flow security, IDS, Email Security – PGP,S/MIME	08 Hours

TEXT BOOK:

1. Security in Computing, Fourth Edition, by Charles P. Pfleeger, Pearson Education.
2. Cryptography And Network Security Principles And Practice, Fourth or Fifth Edition, William Stallings, Pearson.

REFERENCE BOOKS:

1. Modern Cryptography: Theory and Practice, by Wenbo Mao, Prentice Hall.
2. Network Security Essentials: Applications and Standards, by William Stallings. Prentice Hall.

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



**Department of Information Technology
Faculty of Engineering and Technology**

Scheme & Syllabus

For

Value Added Course

**(Android Application Development
Program)**

(Effective from the Session 2017-18)

V.B.S. PURVANCHAL UNIVERSITY, JAUNPUR



Value Added Course
Android Application Development Program (VIT002)

Course Objectives:

1. Understand the principles of creating an effective Android Apps
2. Develop skills in analyzing the usability of an Android Apps.
3. Understand how to plan and conduct user research related to Android Apps usability.
4. Learn the language of the web: JAVA and OOPs.

Course Contents:

Unit-I: Java Concepts Introduction to Java, OOPS refreshing concept, Introduction to Android, What is Android, Introduction to Android Apps Development TOOL, Introduction to Android Java class file & its structure. **08 Hours**

Unit-2: Android App Development Creating a simple Toast Message, Application on click of a button, Android Virtual device (AVD), Create Android Virtual Device (AVD), How to run our App on our own Android device, Android Activity Lifecycle, Android Menus, Creating Alert dialog box in Android, Basic widgets in android, Creating a Simple user registration page UI, Getting data from widgets. **08 Hours**

Unit- 3: Intents, Creating a new Activity, Passing Data between Activities, Web view, Android Manifest, Build gradle file, Date and Time, picker Playing Audio and Video in android, List view, grid view, Spinner, Turn on WiFi, Bluetooth programmatically, Sending SMS and Mail programmatically, Start Activity for result, Types of Intents, Creating Notifications in Android, Animation in android, Sensors in android. **08 Hours**

Unit –4: Effective usage of Android Templates, Shared Preferences, Internal and External storage, Android Fragments, Creating Navigation drawer and loading different fragments on clicking different menu item, SQLite Database, CRUD operations with it, Creating a Login and Sign Up Application using SQLite Database, Finding the current location using Google maps, JSON, AsyncTask, HTTP classes, How to import and Export codes, How to use Third party library projects and integrating it to our App, Working with GitHub codes, Procedures to launch your App on Play store. **08 Hours**

Key Learning Outcomes

Upon completion of course students will able to:

1. Demonstrate how to download and install all the required tools to develop Android applications and then test them on the Android Emulator.
2. Understand to link activities together to form a complete Android application using intents, the glue to links activities and one of the unique characteristics of the Android OS.
3. Learn about the various layouts to build the UI of your application, main groups of views & use a SQLite database in Android application.
4. Understand how Web services can be consumed in an Android application,& the steps to publishing and selling your applications On the Android Market

Reference Books:

1. Android Programming with Kotlin for Beginners by John Horton.
2. Android Introducing Googles Mobile Development Platform. by Ed Burnette.
3. Android App Development For Dummies. by Michael Burton.