



## Integral University, Lucknow

| Effective from Session: 2024-25 |                                                                                   |                     |                        |    |    |    |   |
|---------------------------------|-----------------------------------------------------------------------------------|---------------------|------------------------|----|----|----|---|
| Course Code                     | DMA-201                                                                           | Title of the Course | APPLIED MATHEMATICS-II | L  | T  | P  | C |
| Year                            | I <sup>st</sup>                                                                   | Semester            | II <sup>nd</sup>       | 03 | 01 | 00 | - |
| Pre-Requisite                   | DMA-201                                                                           | Co-requisite        | NA                     |    |    |    |   |
| Course Objectives               | To know the basic concepts of Mathematics with their Applications in Engineering. |                     |                        |    |    |    |   |

| Course Outcomes |                                                                                                                                                                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1             | Definite and Indefinite integral knowledge makes students wide in solving problems related to big summations and areas related problems.                                                                                                                                                       |
| CO2             | Applications of Integration will lead students to get a good knowledge of finding areas, volume etc.                                                                                                                                                                                           |
| CO3             | Some different rules like Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's 1/3rd rule and 3/8th rule, Students will be able to solve big Integral problems in a very easy pattern.                                                                                                |
| CO4             | 2D Coordinate Geometry has application in the field of construction. The sketch of a building is a pure geometry. It is also used for finding the distance between places and in geography also it has many applications. It is also used in Astrophysics to find the distance between planets |
| CO5             | Three dimensional geometry is used in various fields like in computer graphics, biotechnology and medical sciences and in different projects also.                                                                                                                                             |

| Unit No. | Title of the Unit                                                  |                                                                                                                                                                                                                                                                                                                        | Contact Hrs. | Mapped CO |
|----------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| 1        | i). Integral Calculus-I<br>ii). Indefinite Integral                | <b>Integral Calculus – I:</b><br>Definition of Integration (anti-derivative), Integration of standard functions. Rule of integration (Integration of sum, difference and Scalar multiplication).<br><b>Indefinite Integral:</b><br>Integration by substitution, Integration by parts, Integration by partial fraction. | 07           | 1         |
| 2        | i). Integral Calculus -II<br>ii). Application of Integral Calculus | <b>Integral Calculus - II:</b><br><b>Definite Integral:</b> Definition of definite integral, properties and evaluation of definite integral.<br><b>Application of Integral Calculus:</b> Finding areas bounded by sample curves.                                                                                       | 08           | 2         |
| 3        | i). Numerical Integral & Error                                     | <b>Numerical Integration &amp; Error:</b> Introduction, Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's 1/3rd rule and 3/8th rule. Concept of error for simple function.                                                                                                                                 | 08           | 3         |
| 4        | i). Coordinate Geometry (2Dimention)                               | <b>Coordinate Geometry (2-Dimension):</b> Circle, Equation of circle in standard form. Centre - Radius form, Diameter form, Two intercept form.                                                                                                                                                                        | 08           | 4         |
| 5        | i). Coordinate Geometry (3-Dimention)                              | <b>Co-ordinate Geometry (3 Dimension):</b> Straight lines and planes in space, Distance between two points in space, direction cosine and direction ratios, Finding equation of a straight line (without proof).                                                                                                       | 09           | 5         |

| References Books:                                                                                                                                                                                                     |                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1.                                                                                                                                                                                                                    | Applied Mathematics: Kailash Sinha, Meerut publication.            |
| 2.                                                                                                                                                                                                                    | Applied Mathematics: P. K. Gupta, Asian Publication.               |
| 3.                                                                                                                                                                                                                    | Applied Mathematics: H. R. Loothara, Bharat Bharti Publication.    |
| 4.                                                                                                                                                                                                                    | Mathematics for Polytechnic: S.P. Deshpande, Pune Vidyarthi Griha. |
| e-Learning Source:                                                                                                                                                                                                    |                                                                    |
| <a href="https://www.youtube.com/watch?v=syLIptxjN0E&amp;list=PLn78sdsv0QoXBxWmyGp5SQdg-F_AlyB05&amp;pp=iAQB">https://www.youtube.com/watch?v=syLIptxjN0E&amp;list=PLn78sdsv0QoXBxWmyGp5SQdg-F_AlyB05&amp;pp=iAQB</a> |                                                                    |
| <a href="https://www.youtube.com/watch?v=rBNQ0r7CN2c&amp;list=PLn78sdsv0QoXUdre4aCAobj3cxACKNeLL&amp;pp=iAQB">https://www.youtube.com/watch?v=rBNQ0r7CN2c&amp;list=PLn78sdsv0QoXUdre4aCAobj3cxACKNeLL&amp;pp=iAQB</a> |                                                                    |

| PO-PSO CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PSO1 | PSO2 | PSO3 | PSO4 |
|-----------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| CO1       | 3   | 1   | 3   | --  | 1   | --  | --  | 2    | -    | 1    | 1    |
| CO2       | 1   | 3   | 1   | 1   | 2   | --  | --  | 2    | 1    | 2    | -    |
| CO3       | --  | 1   | --  | 2   | 3   | --  | --  | 3    | --   | 2    | 1    |
| CO4       | 2   | 2   | 2   | 1   | --  | --  | --  | -    | 2    | 1    | 3    |
| CO5       | 2   | 1   | 1   | --  | 1   | --  | --  | -    | 1    | -    | 2    |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

|                                    |                    |
|------------------------------------|--------------------|
| Name & Sign of Program Coordinator | Sign & Seal of HoD |
|------------------------------------|--------------------|



| Effective from Session: 2010 |                                                                                                                                                                                                                                                                                                            |                     |                    |   |   |   |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|---|---|---|
| Course Code                  | DPH-201                                                                                                                                                                                                                                                                                                    | Title of the Course | Applied Physics-II | L | T | P |
| Year                         | I                                                                                                                                                                                                                                                                                                          | Semester            | I                  | 3 | 1 | 0 |
| Pre-Requisite                | None                                                                                                                                                                                                                                                                                                       | Co-requisite        | None               |   |   |   |
| Course Objectives            | To equip learners with the foundational concepts of units, dimensions, dimensional analysis, measurement accuracy, and vector operations, enabling them to analyze physical equations, perform unit conversions, estimate errors, and apply vector algebra in solving scientific and engineering problems. |                     |                    |   |   |   |

| Course Outcomes |                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------|
| CO1             | Student learn to analysis to effect of building acoustic condition.                                                                   |
| CO2             | Student learn about application of ultrasound in various field like SONAR, medical and research work and sound signal etc.            |
| CO3             | The student learns to introduce and overview of optical fiber and process of transmission of signal and application of various field. |
| CO4             | Student learns to investigate broken telegraph wire with the help of post office box.                                                 |
| CO5             | Student learn to simplify the complicated circuit by using Kirchhoff's law.                                                           |

| Unit No. | Title of the Unit                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Contact Hrs. | Mapped CO |
|----------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| Unit-1   | Application of Sound Waves                                     | <b>Acoustics:</b> Standing waves, Closed and Open organ pipes, Resonance, End correction. Definition of pitch, loudness, quality and intensity of sound waves. Echo and reverberation and reverberation time. Sabine's formula, Control of reverberation time (problems on reverberation time). Acoustics of buildings, defects and remedy.<br><b>Ultrasonics:</b> Generation, Magnetostriction, Piezoelectric effect, Application in new technology                                                                                                                                                                                                                                                            | 6            | CO-1      |
| Unit-2   | Fiber Optics                                                   | Quantum nature of light, Coherence (Spatial and temporal), Duality of wave and particle, Concept of Interference, Biprism, Fraunhofer single slit diffraction, grating, Resolving and dispersive power, Elementary concept of polarization. Critical angle, Total internal reflection, Principle of fiber optics, Optical fiber, Pulse dispersion in step-index fibers, Graded index fiber, Single mode fiber, Optical sensor                                                                                                                                                                                                                                                                                   | 8            | CO-2      |
| Unit-3   | D.C. Circuits, Dielectrics                                     | Principle of Wheat Stone bridge and application of this principle in measurement of resistance (Meter bridge and Post Office Box); potentiometer, Kirchhoff's Law and their simple application. Principle of Carey-Foster's bridge. Electric potential, potential energy, Energy of a charged capacitor. Charging and discharging of capacitors.<br>Electric dipole; effect of electric field on dielectrics, polarization. Magnetic Fields & Materials: Dia, Para and Ferro-magnetism, Ferrites, Hysteresis, Hysteresis curve of a ferro magnetic materials and their uses, Basic idea of super conductivity.                                                                                                  | 8            | CO-3      |
| Unit-4   | Semiconductor Physics, Nuclear Physics                         | classification of solids into conductors, insulators and semiconductors on the basis of energy band structure. Intrinsic and extrinsic semiconductors, Electrons and holes as charge carriers in semiconductors, Effect of temperature in conduction in semiconductors, P-type and N-type semiconductors, P-N junction formation, barrier voltage, Forward and reverse biasing of a junction diode.<br>Continuous and characteristics of X-rays, Properties & applications of X-rays.<br>Radioactivity, Nuclear stability, Radioactive emission, radiation hazards, nuclear fission and fusion, nuclear reactors and their application, Mass-energy relation, atomic mass unit, Mass defect and binding energy. | 10           | CO-4      |
| Unit-5   | Lasers and its Applications, Non-conventional energy resources | Absorption and Emission of energy by atom, Spontaneous and Stimulated Emission, Population inversion. Main components of laser and types of lasers, Ruby Laser, He-Ne laser and their applications.<br>Wind energy: Introduction, scope and significance, measurement of wind velocity by anemometer, general principle of wind mill, Indian wind energy program.<br>Solar energy: Solar radiation and potentiality of solar radiation in India, unit of solar radiation. Bio fuel and Gobar gas plants Uses of solar energy: Solar Cooker, solar water heater, solar photo-voltaic cells, solar energy collector, Modern applications in technology.                                                           | 8            | CO-5      |

**References Books:**

1. Nootan Physics: Kumar & Mittal
2. Applied Physics: P.K. Gupta.
3. Pradeep Fundamental: Gogia & Gomber.
4. Applied Physics: P.S. Kushwaha.

**e-Learning Source:**

| PO-PSO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| CO     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |
| CO1    | 2   |     |     |     |     |     |     |     |     |      |      | 1    | 2    |      |      |      |      |
| CO2    | 2   |     |     |     |     |     |     |     |     |      | 1    | 1    | 2    |      |      |      |      |
| CO3    | 2   |     |     |     | 2   | 1   |     |     |     |      |      | 2    | 2    |      |      |      | 2    |
| CO4    | 1   |     |     |     | 2   |     | 3   |     |     |      |      |      | 1    |      |      |      | 2    |
| CO5    | 2   | 2   |     |     |     |     |     |     |     |      |      | 1    | 2    | 2    |      |      |      |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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|-----------------------------------------------|-------------------------------|
| <b>Name &amp; Sign of Program Coordinator</b> | <b>Sign &amp; Seal of HoD</b> |
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## Integral University, Lucknow

| Effective from Session: |                                                                                                                                                                                                                                     |                     |                   |   |   |     |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------|---|---|-----|
| Course Code             | DCH-201                                                                                                                                                                                                                             | Title of the Course | Applied Chemistry | L | T | P C |
| Year                    | I                                                                                                                                                                                                                                   | Semester            | II                | 3 | 1 | 0 0 |
| Pre-Requisite           | None                                                                                                                                                                                                                                | Co-requisite        | None              |   |   |     |
| Course Objectives       | 1. To understand all the chemical reactions, principle and theory related to topics<br>2. To provide examples and unsolved problems as much as possible<br>3. To provide example related to industrial as well as domestic proposes |                     |                   |   |   |     |

| Course Outcomes |                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1             | To acquire the foundational knowledge needed to understand the properties, combustion behaviors, and potential impacts of different fuels.                           |
| CO2             | To understand the all, disperse systems used in pharmaceutical and other paint industry.                                                                             |
| CO3             | To provide knowledge about the nature of compounds and nature of bonds of organic compound as well as the possibility of chemical reaction.                          |
| CO4             | To provide the fundamental understanding needed to design and optimize industrial Process                                                                            |
| CO5             | To understand the vital material which is used in a range of application across various industries. Understand manufacturing process to create sustainable material. |

| Unit No. | Title of the Unit                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Contact Hrs. | Mapped CO |
|----------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| Unit-1   | <b>Fuels</b>                                    | Definition, its classification, high and low calorific value. Determination of calorific value of solid and liquid fuels by Bomb calorimeter.<br>Liquid fuel- Petroleum and its refining, distillates of petroleum (Kerosene oil, Diesel and Petrol), Benzol and power alcohol. Knocking, Anti-knocking agents, Octane number and Cetane number.<br>Cracking and its type, Gasoline from hydrogenation of coal (Bergius process and Fischer Tropsch's process) Gaseous Fuel- Coal gas, Oil gas, Water gas, Producer gas, Biogas, LPG and CNG. Numerical problems based on topics.                                                                                                                                                                                                                       | 10           | 1         |
| Unit-2   | <b>Colloidal State of Matter<br/>Lubricants</b> | Concept of colloidal and its types, different system of colloids, dispersed phase and dispersion medium. Methods of preparation of colloidal solutions, Dialysis and electrodialysis. Properties of colloidal solution with special reference to absorption, Brownian movement, Tyndal effect, Electrophoresis and Coagulation. Relative stability of hydrophilic and hydrophobic colloids. Protection and protective colloids. Emulsion, types, preparation, properties and uses. Application of colloids chemistry in different industries.                                                                                                                                                                                                                                                           | 06           | 2         |
| Unit-3   | <b>Hydrocarbons</b>                             | Definition, classification, necessity and various kinds of lubricants. Function and mechanism of action of lubricants and examples. Properties of lubricants, importance of additive compounds in lubricants, Synthetic lubricants and cutting fluids. Industrial application, its function in bearing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10           | 3         |
| Unit-4   | <b>Organic Reactions and Mechanism:</b>         | A. Classification and IUPAC nomenclature of organic compounds homologous series (Functional Groups). B. Preparation, properties and uses of Ethane, Ethene, Ethyne (Acetylene), Benzene and Toluene.<br>Fundamental aspects- A. Electrophiles and nucleophiles, Reaction intermediates, Free radicals, Carbocation, Carbanion. B. Inductive effect, Mesomeric effect, Electrometric effect.<br>Mechanism- A. Mechanism of addition reaction (Markovnikov's Rule, Cyanohydrin and Peroxide effect). B. Mechanism of substitution reactions; (Nucleophilic) hydrolysis of alkyl halide, electrophilic substitution halogenations, Sulphonation, Nitration and Friedel- Craft reaction. C. Mechanism of Elimination reaction- Dehydration of primary alcohol, Dehydrohalogenation of primary alkyl halide. | 07           | 4         |
| Unit-5   | <b>Polymers and Synthetic Materials</b>         | Polymers and their classification. Average degree of polymerization, Average molecular weight, Free radical polymerisation (Mechanism).<br>Thermosetting and thermoplastic<br>A. Addition polymers and their industrial applications- Polythene, Polystyrene, PVA, PVC, PAN, PMMA, Buna-S, Buna-N, Teflon.<br>B. Condensation polymers and their industrial applications- Nylon 6, Nylon 6,6, Bakelite, Melamine formaldehyde, Urea formaldehyde, Terylene or Dacron, Polyurethanes. General concept of Bio polymers, Biodegradable polymers and Inorganic polymers (Silicon).<br>Synthetic Materials- A. Introduction- Fats and Oils B. Saponification of fats and oils, Manufacturing of soap C. Synthetic detergents, types of detergents and its                                                    | 07           | 5         |



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|  |  | manufacturing. Explosives: TNT, RDX and Dynamite, Paint and Varnish. |  |  |
|--|--|----------------------------------------------------------------------|--|--|

### References Books:

|                                                                |
|----------------------------------------------------------------|
| 1. Applied Chemistry: R. S. Katiyar and J. P. Chaudhary        |
| 2. Applied Chemistry: Rakesh Kapoor                            |
| 3. Principles of general and inorganic chemistry: O. P. Tandon |
| 4. Engineering Chemistry: S. Chandra                           |
| 5. Applied Chemistry: M. Gupta                                 |

### e-Learning Source:

[https://drive.google.com/file/d/176P2RihIzLCSWmWqeMf5W1ja5uYcqRXn/view?usp=drive\\_link](https://drive.google.com/file/d/176P2RihIzLCSWmWqeMf5W1ja5uYcqRXn/view?usp=drive_link)

[https://drive.google.com/file/d/1HkrXSpQw7\\_Y5FZPf8iq0T92DRyuGrms3/view?usp=drive\\_link](https://drive.google.com/file/d/1HkrXSpQw7_Y5FZPf8iq0T92DRyuGrms3/view?usp=drive_link)

[https://drive.google.com/file/d/1lsZHgt7nIdB0iReCbTaP53JZjgzjOZ3/view?usp=drive\\_link](https://drive.google.com/file/d/1lsZHgt7nIdB0iReCbTaP53JZjgzjOZ3/view?usp=drive_link)

[https://drive.google.com/file/d/176OiA-haF34K1Bzg\\_xA2PwSXkwGb-FMD/view?usp=drive\\_link](https://drive.google.com/file/d/176OiA-haF34K1Bzg_xA2PwSXkwGb-FMD/view?usp=drive_link)

| PO-PSO<br>CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PSO1 | PSO2 | PSO3 | PSO4 |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| CO1          | 03  | -   | 01  | -   | -   | -   | 01  |      |      |      |      |
| CO2          | 03  | -   | -   | -   | -   | -   | -   |      |      |      |      |
| CO3          | 03  | -   | 01  | -   | -   | -   | 02  |      |      |      |      |
| CO4          | 03  | 01  | 02  | -   | -   | -   | 02  |      |      |      |      |
| CO5          | 03  | -   | -   | -   | -   | -   | 02  |      |      |      |      |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <br><b>Dr. Rida Sagheer</b><br>Name & Sign of Program Coordinator | <b>Sign &amp; Seal of HoD</b> |
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## Integral University, Lucknow

| Effective from Session: 2015 |                                                                                                                                                                                                                                                  |                     |                      |   |   |   |   |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|---|---|---|---|
| Course Code                  | DAR 201                                                                                                                                                                                                                                          | Title of the Course | TECHNICAL DRAWING-II | L | T | P | C |
| Year                         | 1 <sup>ST</sup> YEAR                                                                                                                                                                                                                             | Semester            | 2 <sup>ND</sup> SEM  | 3 | 1 | 0 | - |
| Pre-Requisite                |                                                                                                                                                                                                                                                  | Co-requisite        |                      |   |   |   |   |
| Course Objectives            | To equip students with the skills to create accurate architectural drawings that effectively represent building designs, layouts, and construction details, focusing on advanced drafting methods, standard symbols, and scaled representations. |                     |                      |   |   |   |   |

| Course Outcomes |                                                                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1             | The course aims at developing the requisite level of proficiency in Drawing, which is seen as a primary communication tool in the practice of architecture just like language. |
| CO2             | To develop perception and presentation of architectural forms and buildings.                                                                                                   |
| CO3             | Students shall be familiarized with a range of techniques of expression beginning with manual drawing.                                                                         |
| CO4             | Familiarization with drafting tools and accessories.                                                                                                                           |
| CO5             | Students learn how to use technical drawings to communicate ideas, such as when designing new projects.                                                                        |

| Unit No. | Title of the Unit                                               |                                                                                                                                                                                                                                                                                                                 | Contact Hrs. | Mapped CO |
|----------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| UNIT-I   | <b>Fundamental of Perspective Drawing in Architecture</b>       | Basis of perspective, cone of vision, central visual ray, picture plane, line of sight through picture plane, spectator.<br>Reality and appearance.<br>Principal aids of perspective, vanishing points, eye level.<br>Study of cubes, sphere, cylinder, prism etc. And their one point & two-point perspective. | 08           | CO1       |
| UNIT-II  | <b>Plans, Elevations, and Sections of Residential Buildings</b> | Plane & elevation of a two-room single storied building.<br>Sections of a two-room single storied building.                                                                                                                                                                                                     | 08           | CO2       |
| UNIT-III | <b>Staircase</b>                                                | Working drawing of a three bedroom double storied flat roofed residential building. Staircase<br>Details of dog legged stairs (Wooden & RCC).<br>Plans for the remaining type of stairs                                                                                                                         | 08           | CO3       |
| UNIT-IV  | <b>Modern Drawing Appliances</b>                                | Use and care of modern drawing appliances with emphases on stencils, drawing table template fero & ammonia printing machine.                                                                                                                                                                                    | 08           | CO4       |
| UNIT-V   | <b>Presentation Drawing</b>                                     | Different presentation drawing techniques, symbols used in architectural drawings.                                                                                                                                                                                                                              | 08           | CO5       |

| References Books:                                                                                     |  |
|-------------------------------------------------------------------------------------------------------|--|
| Civil Engineering Drawing– Gurucharan Singh                                                           |  |
| Form, Space& Order - Frantis & D K Singh                                                              |  |
| e-Learning Source:                                                                                    |  |
| <a href="https://www.youtube.com/watch?v=scRjeB8tnFE">https://www.youtube.com/watch?v=scRjeB8tnFE</a> |  |
| <a href="https://www.youtube.com/watch?v=ATGEhLFBtk4">https://www.youtube.com/watch?v=ATGEhLFBtk4</a> |  |

| PO-PSO | PO  |     |     |     |     |     |     |     |     |      |      |      |      | PSO  |      |      |      |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| CO     | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PO13 | PSO1 | PSO2 | PSO3 | PSO4 |
| CO1    | 1   | 3   | -   | -   | -   | 2   | 1   | -   | -   | -    | -    | -    | -    | 3    | 1    | -    |      |
| CO2    | -   | 3   | -   | -   | -   | 3   | -   | -   | -   | -    | -    | -    | -    | 1    |      | 3    |      |
| CO3    | -   | 3   | -   | -   | -   | 3   | -   | -   | -   | -    | -    | -    | -    | -    | 3    | -    |      |
| CO4    | -   | 2   | -   | -   | -   | 1   | -   | -   | -   | -    | -    | -    | -    | -    | -    | 3    |      |
| CO5    | -   | -   | -   | -   | 3   | -   | 2   | -   | -   | -    | -    | -    | -    | 2    | 2    | -    |      |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

|                                    |                    |
|------------------------------------|--------------------|
| Name & Sign of Program Coordinator | Sign & Seal of HoD |
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## Integral University, Lucknow

| Effective from Session: |                                                                                                                                                                                   |                     |                             |   |   |   |    |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------|---|---|---|----|
| Course Code             | DAR 202                                                                                                                                                                           | Title of the Course | FUNDAMENTAL OF ARCHITECTURE | L | T | P | C  |
| Year                    | 1 <sup>ST</sup> YEAR                                                                                                                                                              | Semester            | 2 <sup>ND</sup> SEM         | 3 | 1 | 0 | 40 |
| Pre-Requisite           |                                                                                                                                                                                   | Co-requisite        |                             |   |   |   |    |
| Course Objectives       | 1. The course aims at developing the requisite level of proficiency in drawing, which is seen as a primary communication tool in the practice of architecture just like language. |                     |                             |   |   |   |    |

| Course Outcomes |                                                                                                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1             | Students will be able to learn about the evolution of architecture from ancient to modern world. Through site visits to historical and contemporary buildings, students will observe architectural evolution and understand how various factors influence design.                                                          |
| CO2             | Students will be able to learn about the basic design and basic understanding of form, order and space in architecture. During educational tours and interior site studies, students will analyze real examples of color schemes, lighting arrangements, and aesthetic detailing.                                          |
| CO3             | They will also learn about human activities, space required for activities. Field visits to residential and institutional buildings help students observe practical applications of anthropometrics and room size standards.                                                                                               |
| CO4             | To ability to create designs using the elements of design. Sketching exercises and on-site visual studies during visits encourage students to identify design elements in real architectural settings.                                                                                                                     |
| CO5             | Students will be able to analyze architectural character and style and express them through appropriate materials, textures, ornamentation, color, and lighting. Through educational tours to heritage buildings and modern architectural sites, students gain exposure to architectural styles, materials, and detailing. |

| Unit No. | Title of the Unit                     |                                                                                                                                                                | Contact Hrs. | Mapped CO |
|----------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| UNIT-I   | Principles of Architecture            | General background, evolution of architecture, definition of architecture and interior design, factors effecting architecture and interior design.             | 08           | CO1       |
| UNIT-II  | Aesthetics                            | Aesthetics in interiors, role of accessories, furniture and fittings. Plumbing & electrical fittings.                                                          | 08           | CO2       |
| UNIT-III | Architectural Composition             | Anthropometrics diagram, procedure of functional planning, objective of functional planning, methods of determination of various rooms sizes.                  | 08           | CO3       |
| UNIT-IV  | Elements Of Architectural Composition | 1.Point 2. Lines 3. Figures 4. Forms 5. Scale 6. Proportion 7. Unity 8. Focus 9. Balance 10. Monotony 11. Rhythm 12. Contrast 13. Harmony                      | 08           | CO4       |
| UNIT-V   | Elements Of Architectural Composition | 14. Character 15. Style 16. Materials and structure 17. Textures 18. Ornamentation 19. Role of color, light and shade in interiors and architecture 20. Truth. | 08           | CO5       |

| References Books:                                                                                                                                                              |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| A Visual Dictionary : Frantis & D K Singh                                                                                                                                      |  |
| Form, Space& Order : Frantis & D K Singh                                                                                                                                       |  |
| e-Learning Source:                                                                                                                                                             |  |
| <a href="https://youtu.be/CpmEqB0BY2g?si=3xLWJYnfSY118u48">https://youtu.be/CpmEqB0BY2g?si=3xLWJYnfSY118u48</a>                                                                |  |
| <a href="https://youtu.be/n1W0JMublaE?si=7JyoVF7tDj4TCfi8">https://youtu.be/n1W0JMublaE?si=7JyoVF7tDj4TCfi8</a>                                                                |  |
| <b>NOTE</b> – Site visits, case studies may involve local/out station study/Educational Tours. And shall have weightage in course work marks to be decided by subject teacher. |  |

| PO-PSO | PO  |     |     |     |     |     |     |     |     |      |      |      |      | PSO  |      |      |      |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| CO     | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PO13 | PSO1 | PSO2 | PSO3 | PSO4 |
| CO1    | -   | -   | -   | -   | -   | -   | 1   | -   | 3   | -    | -    | -    | 1    |      |      |      |      |
| CO2    | 2   | 3   | -   | -   | -   | -   | 2   | -   | -   | -    | -    | -    | -    |      |      |      |      |
| CO3    | -   | 1   | -   | -   | 1   | -   | 2   | -   | -   | -    | -    | -    | -    |      |      |      |      |
| CO4    | -   | -   | -   | 2   | -   | -   | -   | -   | -   | 1    | -    | -    | -    |      |      |      |      |
| CO5    | -   | -   | 3   | -   | -   | -   | 2   | -   | -   | 1    | -    | -    | -    |      |      |      |      |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

|                                    |                    |
|------------------------------------|--------------------|
| Name & Sign of Program Coordinator | Sign & Seal of HoD |
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**Integral University, Lucknow**





## Integral University, Lucknow

| Effective from Session: 2010-11 |                                                                                                                                                                                                        |                     |                            |   |   |   |   |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------|---|---|---|---|
| Course Code                     | DPC- 101/ 201                                                                                                                                                                                          | Title of the Course | PROFESSIONAL COMMUNICATION | L | T | P | C |
| Year                            | FIRST                                                                                                                                                                                                  | Semester            | FIRST/ SECOND              |   | T |   |   |
| Pre-Requisite                   |                                                                                                                                                                                                        | Co-requisite        |                            |   |   |   |   |
| Course Objectives               | <b>Enhance Verbal Communication Skills</b><br><b>Master Written Communication</b><br><b>Cultivate Interpersonal Skills</b><br><b>Develop Professional Etiquette Utilize Communication Technologies</b> |                     |                            |   |   |   |   |

| Course Outcomes |                                                                                                                                                                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CO1</b>      | Introduction of the concept of communication, types skills, modern tools, etc...                                                                                                                                                                                                 |
| <b>CO2</b>      | The CO of this unit is to make inquiry about people, product, price etc. with the expansion of business operations of a business, importance of business letter is also increasing. To take right decisions: Taking right decisions require accurate information.                |
| <b>CO3</b>      | The CO of this unit is to control sentence-level error (grammar, punctuation, and spelling). Its outcome is to employ techniques of active reading, critical reading, and informal reading response for inquiry, learning, and thinking.                                         |
| <b>CO4</b>      | Learning objectives focus on student performance. Action verbs that are specific, such as list, describe report, compare, demonstrate, and analyze, should state the behaviors students will be expected to perform in Hindi                                                     |
| <b>CO5</b>      | The conclusion of this subject is to increase the student's English communication skills by Improving fluency through regular practice and speaking drills. Understanding of basic grammar structures like nouns, verbs and adjectives through class reading and speaking tasks. |

| Unit No. | Title of the Unit        |                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Contact Hrs. | Mapped CO |
|----------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| 1        | Communication in English | Concept of communication, importance of effective communication, types of communication, formal and informal, verbal and nonverbal, spoken and written, Techniques of communication, Listening and reading, writing and speaking, Barriers to communication- Modern tools of communication Fax, e-mail, Telephone, telegram, etc., Techniques for clear, concise, correct and coherent writing, Difference between technical writing and general writing. | 8            | CO-1      |
| 2        | Letters                  | Kinds of letters: Official, demi-official, unofficial, enquiry letter, quotation, tender and order giving letters. Application for a job, Resume, complaint letter and adjustment letter. Report writing, Note making and minutes writing.                                                                                                                                                                                                                | 8            | CO-2      |
| 3        | Grammar                  | Transformation of sentences, synthesis, Preposition, Articles, Idioms and Phrases, One word substitution, Abbreviations. Tenses, Active and Passive voice. Composition on narrative, descriptive, imaginative, argumentative, discussion and factual topics.                                                                                                                                                                                              | 8            | CO-3      |
| 4        | Spoken English           | Phonemes (Speech sound), Consonant sounds, vowels sounds and diphthongs, Phonetic transcription, IPA, word stress and Intonation. Development of comprehension and knowledge of English through the study of text material and language exercises based on the prescribed text book of English.                                                                                                                                                           | 8            | CO-4      |
| 5        | Letter writing in Hindi  | Kinds of letters: Official, demi-official, unofficial, enquiry letter, quotation, tender and order giving letters, Application for a job.                                                                                                                                                                                                                                                                                                                 | 8            | CO-5      |

### References Books:

Dr. R.P. Chauhan, Asian Publishers, Muzaffarnagar

S.V. Singh & M. S. Verma: Bharat Bharat Prakashan, Meerut.

R. Thakur & M. Singh, Meerut Publication.

### e-Learning Source:

<https://www.bbau.ac.in/Docs/FoundationCourse/TM/AECC105/Lecture%20Types%20&%20Modes%20of%20Communication.pdf>

<https://www.uou.ac.in/sites/default/files/slm/BHMAECC-II.pdf>

| PO-PSO CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PSO1 | PSO2 | PSO3 | PSO4 |
|-----------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| CO1       | 3   | 2   |     |     |     |     |     |      |      |      |      |
| CO2       | 2   | 2   |     |     |     |     |     |      |      |      |      |
| CO3       | 1   | 1   |     |     |     |     |     |      |      |      |      |
| CO4       | 2   | 2   |     |     |     |     |     |      |      |      |      |
| CO5       | 3   | 3   |     |     |     |     |     |      |      |      |      |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

|                                    |                    |
|------------------------------------|--------------------|
| Name & Sign of Program Coordinator | Sign & Seal of HoD |
|------------------------------------|--------------------|



## Integral University, Lucknow

|                                                       |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|----------------------------|-----------------------------------|-----|-----|------|------|---------------------|------------------|----------|----------|------|------|
| <b>Effective from Session:</b>                        |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>Course Code</b>                                    | DPH-151/251                                                                                                                                                                                |                                                                                                                        |     |     |     | <b>Title of the Course</b> | Applied Physics Lab               |     |     |      |      | <b>L</b>            | <b>T</b>         | <b>P</b> | <b>C</b> |      |      |
| <b>Year</b>                                           | 1 <sup>st</sup>                                                                                                                                                                            |                                                                                                                        |     |     |     | <b>Semester</b>            | 1 <sup>st</sup> / 2 <sup>nd</sup> |     |     |      |      | <b>0</b>            | <b>0</b>         | <b>3</b> |          |      |      |
| <b>Pre-Requisite</b>                                  | None                                                                                                                                                                                       |                                                                                                                        |     |     |     | <b>Co-requisite</b>        | None                              |     |     |      |      |                     |                  |          |          |      |      |
| <b>Course Objectives</b>                              |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>Course Outcomes</b>                                |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>CO1</b>                                            | To gain practical knowledge by applying the experimental methods to correlate with the Physics theory.                                                                                     |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>CO2</b>                                            | Experience and understand basic physical fundamentals and the key vocabulary to describe them: basic Electronics & Electrical, kinematics, dynamics, work and energy, gravitation, fluids. |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>CO3</b>                                            | Develop skills in observation, interpretation, reasoning, synthesis, generalizing, predicting, and questioning as a way to learn new knowledge.                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>CO4</b>                                            | Apply conceptual understanding of the physics to general real-world situations.                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>Experiment No.</b>                                 | <b>Title of the Experiment</b>                                                                                                                                                             | <b>Content of the Unit</b>                                                                                             |     |     |     |                            |                                   |     |     |      |      | <b>Contact Hrs.</b> | <b>Mapped CO</b> |          |          |      |      |
| 1                                                     |                                                                                                                                                                                            | Determination of 'g' using simple pendulum.                                                                            |     |     |     |                            |                                   |     |     |      |      | 2                   | 1                |          |          |      |      |
| 2                                                     |                                                                                                                                                                                            | To find the surface Tension of water by the method of capillary rise.                                                  |     |     |     |                            |                                   |     |     |      |      | 2                   | 1                |          |          |      |      |
| 3                                                     |                                                                                                                                                                                            | To determine the frequency of A.C. mains by using a sonometer and a horse shoe magnet.                                 |     |     |     |                            |                                   |     |     |      |      | 2                   | 1                |          |          |      |      |
| 4                                                     |                                                                                                                                                                                            | To determine the value of modulus of rigidity of given material of a wire by statical method using Barton's apparatus. |     |     |     |                            |                                   |     |     |      |      | 2                   | 1                |          |          |      |      |
| 5                                                     |                                                                                                                                                                                            | Determination of coefficient of viscosity of water by capillary flow (Poiseuille's method).                            |     |     |     |                            |                                   |     |     |      |      | 2                   | 2                |          |          |      |      |
| 6                                                     |                                                                                                                                                                                            | To determine the height of a tower by Sextant.                                                                         |     |     |     |                            |                                   |     |     |      |      | 2                   | 3                |          |          |      |      |
| 7                                                     |                                                                                                                                                                                            | To determine the moment of Inertia of a flywheel.                                                                      |     |     |     |                            |                                   |     |     |      |      | 2                   | 3                |          |          |      |      |
| 8                                                     |                                                                                                                                                                                            | Determination of velocity of sound by resonance tube.                                                                  |     |     |     |                            |                                   |     |     |      |      | 2                   | 3                |          |          |      |      |
| 9                                                     |                                                                                                                                                                                            | Determination of resistivity of a given wire by Post Office Box.                                                       |     |     |     |                            |                                   |     |     |      |      | 2                   | 3                |          |          |      |      |
| 10                                                    |                                                                                                                                                                                            | By using Potentiometer, determination of (i) E1/E2 (ii) Internal resistance of given cell.                             |     |     |     |                            |                                   |     |     |      |      | 2                   | 4                |          |          |      |      |
| 11                                                    |                                                                                                                                                                                            | Determination of coefficient of friction on a horizontal plane.                                                        |     |     |     |                            |                                   |     |     |      |      | 2                   | 1                |          |          |      |      |
| 12                                                    |                                                                                                                                                                                            | Determination of viscosity coefficient of a lubricant by Stoke's law.                                                  |     |     |     |                            |                                   |     |     |      |      | 2                   | 4                |          |          |      |      |
| 13                                                    |                                                                                                                                                                                            | Determination of Spring Constant.                                                                                      |     |     |     |                            |                                   |     |     |      |      | 2                   | 4                |          |          |      |      |
| 14                                                    |                                                                                                                                                                                            | Verification of Kirchoff's laws.                                                                                       |     |     |     |                            |                                   |     |     |      |      | 2                   | 2                |          |          |      |      |
| 15                                                    |                                                                                                                                                                                            | To draw the characteristics of a p-n junction diode.                                                                   |     |     |     |                            |                                   |     |     |      |      | 2                   | 3                |          |          |      |      |
| <b>Note: Any ten experiments are to be performed.</b> |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>References Books:</b>                              |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| 1. Nootan Physics: Kumar & Mittal                     |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| 2. Applied Physics: P.K. Gupta.                       |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| 3. Pradeep Fundamental: Gogia & Gomber.               |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>e-Learning Source:</b>                             |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
|                                                       |                                                                                                                                                                                            |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      |      |
| <b>PO-PSO CO</b>                                      | PO1                                                                                                                                                                                        | PO2                                                                                                                    | PO3 | PO4 | PO5 | PO6                        | PO7                               | PO8 | PO9 | PO10 | PO11 | PO12                | PSO1             | PSO2     | PSO3     | PSO4 | PSO5 |
| <b>CO1</b>                                            | 3                                                                                                                                                                                          |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     | 1                |          | 2        | 3    | 2    |
| <b>CO2</b>                                            | 3                                                                                                                                                                                          |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      | 2    |
| <b>CO3</b>                                            | 2                                                                                                                                                                                          |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      | 2    |
| <b>CO4</b>                                            | 3                                                                                                                                                                                          |                                                                                                                        |     |     |     |                            |                                   |     |     |      |      |                     |                  |          |          |      | 2    |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

|                                               |                               |
|-----------------------------------------------|-------------------------------|
| <b>Name &amp; Sign of Program Coordinator</b> | <b>Sign &amp; Seal of HoD</b> |
|-----------------------------------------------|-------------------------------|



## Integral University, Lucknow

| Effective from Session: 2015-16 |                                                                                                                                                                                                                                                                                                                                                                         |                     |                                 |   |   |   |   |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------|---|---|---|---|
| Course Code                     | DCAD-251                                                                                                                                                                                                                                                                                                                                                                | Title of the Course | BASIC COMPUTER AIDED DESIGN LAB | L | T | P | C |
| Year                            | I                                                                                                                                                                                                                                                                                                                                                                       | Semester            | II                              | 0 | 0 | 2 | - |
| Pre-Requisite                   | 10 <sup>th</sup>                                                                                                                                                                                                                                                                                                                                                        | Co-requisite        | -                               |   |   |   |   |
| Course Objectives               | The course objective is to develop proficiency in using AutoCAD software for drafting, sketching, dimensioning, creating and modifying geometrical figures, drawing orthographic and isometric views, generating top, front, and side views of isometric figures, producing sectional views of solid objects, and performing practical tasks on page setup and scaling. |                     |                                 |   |   |   |   |

| Course Outcomes |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| CO1             | Students will develop good communication skills and teamwork.                 |
| CO2             | Students will become familiar with office practice and standards.             |
| CO3             | Students will become familiar with Auto Cad's two-dimensional drawings.       |
| CO4             | Students' ability to convert sketches into engineered drawings will increase. |
| CO5             | Students will be able to draw orthographic projections and sections.          |

| No. | Title of the Unit       |                                                         | Contact Hrs. | Mapped CO |
|-----|-------------------------|---------------------------------------------------------|--------------|-----------|
| 1   | AutoCAD                 | To study Auto CAD software.                             | 2            | CO1       |
| 2   | Sketch and drafting     | Study And Sketch of drafting setting.                   | 2            | CO2       |
| 3   | Dimensional sketch      | Study and sketch of Dimensional settings.               | 2            | CO3       |
| 4   | Draw geometrical figure | Draw geometrical figure using drawing commands          | 2            | CO4       |
| 5   | Modify figure Scaling   | To modify a geometrical figure using editing comment.   | 2            | CO5       |
| 6   | Orthographic            | To draw an orthographic view of a geometrical figure.   | 2            | CO1       |
| 7   | Isometric view          | To Draw isometric view of a geometrical figure.         | 2            | CO2       |
| 8   | Different view          | To Draw top front and side view of an isometric figure. | 2            | CO3       |
| 9   | Sectional view          | To draw a sectional view of a solid object.             | 2            | CO4       |
| 10  | Scaling                 | To do practical on page set up & scaling of drawing.    | 2            | CO5       |

| References Books:                                                               |
|---------------------------------------------------------------------------------|
| Auto CAD by Rohit Mongia                                                        |
| e-Learning Source:                                                              |
| <a href="https://www.googleadservices.com">https://www.googleadservices.com</a> |
| <a href="https://www.googleadservices.com">https://www.googleadservices.com</a> |

| PO-PSO CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PSO1 | PSO2 | PSO3 | PSO4 |
|-----------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| CO1       | 3   | 2   | 3   | 2   | 2   | 1   | 1   | 3    | 3    | 3    | 1    |
| CO2       | 2   | 2   | 3   | 2   | 1   | 1   | 2   | 3    | 1    | 1    | 3    |
| CO3       | 1   | 3   | 1   | 2   | 2   | 1   | 2   | 1    | 3    | 3    | 2    |
| CO4       | 2   | 3   | 2   | 2   | 1   | 2   | 3   | 2    | 1    | 2    | 3    |
| CO5       | 2   | 2   | 3   | 2   | 3   | 1   | 3   | 2    | 2    | 1    | 2    |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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| Name & Sign of Program Coordinator | Sign & Seal of HoD |
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## Integral University, Lucknow

**Effective from Session: 2010-11**

| Course Code       | DWS-251                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Title of the Course | WORKSHOP PRACTICE | L | T | P | C |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------|---|---|---|---|
| Year              | I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Semester            | II                | 0 | 0 | 3 |   |
| Pre-Requisite     | 10 <sup>TH</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Co-requisite        |                   |   |   |   |   |
| Course Objectives | The Workshop Practice course is designed to provide hands-on experience with essential tools, machines, and techniques used in various engineering workshops. Students will learn the principles and operations of turning, tapering, threading, and grinding in the lathe shop, emphasizing precision machining and tool grinding. In the fitting and bench working shop, students will practice filing, drilling, tapping, dieing, and creating accurate male-female joints. The blacksmith shop focuses on foundational operations like upsetting, punching, bending, and swaging. Welding exercises include butt joints, lap joints, and oxy-acetylene welding. In the sheet metal shop, students will fabricate objects like funnels, trays, and electrical panel boxes with soldering and forming techniques. Carpentry introduces students to woodworking tools, joints like half-lap and mortise-tenon, and basic lathe operations. Finally, in the foundry, students will make moulds with single and multi-piece patterns, create cores, and cast aluminium. The course aims to equip students with practical skills and knowledge for effective problem-solving and application in mechanical engineering. |                     |                   |   |   |   |   |

### Course Outcomes

|     |                                                                                                     |
|-----|-----------------------------------------------------------------------------------------------------|
| CO1 | To acquire skills in basic engineering practice.                                                    |
| CO2 | To identify the hand tools and instruments.                                                         |
| CO3 | To acquire measuring skills.                                                                        |
| CO4 | To acquire practical skills in the trades.                                                          |
| CO5 | To provides the knowledge of job materials in various shops.                                        |
| CO5 | To provides the knowledge of core technical subjects for making and working of any type of project. |

| Unit No. | Title of the Unit          |                                                                                                                                                                                                             | Contact Hrs. | Mapped CO |
|----------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| 1.       | Machine Shop               | a. Study of tools and operations<br>b. Plane turning<br>c. Step turning<br>d. Taper turning<br>e. Threading<br>f. Single point cutting tool grinding                                                        | 6            | CO1       |
| 2.       | Fitting Bench Working Shop | a. Study of tools and operations<br>b. Simple exercises involving filing work<br>c. Making perfect male-female joint<br>d. Simple exercises involving drilling/tapping/die                                  | 3            | CO2       |
| 3.       | Black Smithy Shop          | a. Study of tools and operations<br>b. Simple exercises based on black smithy operations such as<br>c. Upsetting/drawing down, punching, bending, fullering and swaging                                     | 3            | CO2       |
| 4.       | Welding Shop               | a. Study of tools and operations<br>b. Simple butt Joint<br>c. Lap Joint<br>d. Oxy acetylene welding                                                                                                        | 6            | CO3       |
| 5.       | Sheet Metal Shop           | a. Study of tools and operations<br>b. Making funnel complete with soldering<br>c. Fabrication of tool box, tray, electrical panel box etc.                                                                 | 3            | CO4       |
| 6.       | Carpentry Shop             | a. Study of tools and operation and carpentry Joints.<br>b. Simple exercise using jack plain<br>c. To prepare half lap corner, joint, mortise and tenon joints.<br>d. Simple exercise on woodworking lathe. | 3            | CO5       |
| 7.       | Foundry                    | a. Making a mould using single piece pattern<br>b. Making a mould using two piece pattern<br>c. Making a mould using a pattern with core print<br>d. Making Pouring and Making an Aluminium Casting.        | 6            | CO5       |

**References Books:**



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Workshop Technology by R. S. Khurmi

### e-Learning Source:

[https://www.youtube.com/watch?v=sHbvMmOKdjg&list=PL8PvmC2cEsGSCry\\_RY0Qk2PcsNI5DQZ-h&index=2](https://www.youtube.com/watch?v=sHbvMmOKdjg&list=PL8PvmC2cEsGSCry_RY0Qk2PcsNI5DQZ-h&index=2)

| PO-PSO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PO13 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| CO     |     |     |     |     |     |     |     |     |     |      |      |      |      |
| CO1    | 2   | -   | -   | 2   | 2   | -   | -   | 2   | -   | -    | -    | 2    | 2    |
| CO2    |     | -   | -   | -   | 3   | -   | -   | -   | 2   | -    | -    | 3    | -    |
| CO3    | 3   | -   | -   | 2   |     | -   | 3   | 2   | -   | -    | -    | 2    | -    |
| CO4    | -   | -   | -   | -   | 2   | -   | 2   | 2   | -   | 2    | -    | 2    | -    |
| CO5    | -   | -   | -   | 3   | 2   | -   | 2   | 3   | 2   | -    | -    | -    | 3    |
|        | 3   | -   | -   | -   | -   | 2   | 2   | 2   | -   | -    | 3    | -    | 2    |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

|                                    |                    |
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| Name & Sign of Program Coordinator | Sign & Seal of HoD |
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## Integral University, Lucknow

| Effective from Session: 2010-11 |                                                              |                     |                            |   |   |   |   |
|---------------------------------|--------------------------------------------------------------|---------------------|----------------------------|---|---|---|---|
| Course Code                     | DPC151/ 251                                                  | Title of the Course | Professional Communication | L | T | P | C |
| Year                            | FIRST                                                        | Semester            | FIRST/ SECOND              |   |   |   |   |
| Pre-Requisite                   |                                                              | Co-requisite        |                            |   |   |   |   |
| Course Objectives               | Develop Effective Verbal and Non-Verbal Communication Skills |                     |                            |   |   |   |   |
|                                 | Enhance Written Communication Abilities                      |                     |                            |   |   |   |   |
|                                 | Foster Active Listening and Interpersonal Skills             |                     |                            |   |   |   |   |
|                                 | Master Communication Tools and Technology                    |                     |                            |   |   |   |   |
|                                 | Understand and Adapt to Diverse Communication Styles         |                     |                            |   |   |   |   |

| Course Outcomes |                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1             | Introduction of International Phonetic Alphabet and Pronunciation practice.                                                                                                                                                                                                                                                                                                                                    |
| CO2             | From a psychological perspective, objective and outcome of self-description in formal communication situations means that you are focusing attention on you and your behavior, which allows you to evaluate what you see based on the standards and expectations that you have developed throughout your life.                                                                                                 |
| CO3             | The CO of this unit is breeding fresh ideas and taking inputs from a particular group of students... Identify a solution to a specific problem or issue. Selecting candidates after their written test for hiring in a company.                                                                                                                                                                                |
| CO4             | The key objectives outcomes that underline a good presentation often include the following: To establish credibility with your audience. To communicate information clearly to your audience. To persuade and/or influence your audience. The CO of this unit is to establish credibility with your audience. To communicate information clearly to your audience. To persuade and/or influence your audience. |
| CO5             | The CO of this unit is to differentiate between views and facts, to formulate and delineate useful questions, to choose and apply suitable research methods, to look critically at acquired information and to doubt information that has been offered                                                                                                                                                         |

| Unit No. | Title of the Unit                             |                                                                                                                                                                                                                                                                                                                                                                                     | Contact Hrs. | Mapped CO |
|----------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| 1        | Introduction to speech sounds                 | Introduction to speech sounds through (IPA) International Phonetic Alphabet. - Pronunciation practice emphasizing the articulation of vocal sounds & Word stress. - Pronunciation Practice emphasizing the words with spelling pronunciation Mismatch.                                                                                                                              | 4            | 1         |
| 2        | Techniques of giving focused self-description | Techniques of giving focused self-description in formal communication Situations. - Practice in describing objects.                                                                                                                                                                                                                                                                 | 4            | 2         |
| 3        | The basics of group discussion                | The basics of group discussion. - Common pitfalls in group discussion. - Techniques for making a claim & supporting it in group discussion. - Techniques for offering polite but firm counter arguments. - Participating in a Debate.                                                                                                                                               | 4            | 3         |
| 4        | The essentials of Seminar Presentation        | The essentials of Seminar Presentation. - Techniques for preparing a Seminar Presentation. - Mock Interview: Preparation, unfolding of personality and expressing Ideas effectively. - Role Play/General Conversation, Making polite enquiries at Railway station, Post Office and other Public Places.                                                                             | 4            | 4         |
| 5        | Project                                       | Project: At the beginning of the Semester each student in the class will be given topics for one informative & one persuasive speech to be delivered by him/her towards the end of the semester. The students will research for, organize and finalize the speeches under the guidance of the subject teacher. For each speech, the student will submit a one-page written outline. | 4            | 5         |

### References Books:

Grant Taylor: English Conversation Practice (T.M.H.) 2. Grathe King: Colloquial English Routledge London  
 Grant Taylor : English Conversation Practice (T.M.H.) 2. Grathe King: Colloquial English Routledge London

### e-Learning Source:

<https://siayainstitute.ac.ke/wp-content/uploads/2021/05/COMM-SKILLS-NOTES.pdf>  
<https://mrcet.com/downloads/MBA/Professional%20Communication%20Skills.pdf>  
<https://www.scribd.com/document/389612555/COMMUNICATION-SKILLS-SELF-STUDY-NOTES-1-pdf>

| PO-PSO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PSO1 | PSO2 | PSO3 | PSO4 |
|--------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| CO     |     |     |     |     |     |     |     |      |      |      |      |
| CO1    | 3   | 1   |     |     |     |     |     |      |      |      |      |
| CO2    | 2   | 1   |     |     |     |     |     |      |      |      |      |
| CO3    | 2   | 1   |     |     |     |     |     |      |      |      |      |
| CO4    | 1   | 2   |     |     |     |     |     |      |      |      |      |
| CO5    | 1   | 1   |     |     |     |     |     |      |      |      |      |

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

|                                    |                    |
|------------------------------------|--------------------|
| Name & Sign of Program Coordinator | Sign & Seal of HoD |
|------------------------------------|--------------------|