NAME OF THE FACULTY : Ms. Preetpal Kaur (Instructor)
DISCIPLINE : Arch, Mech (B) ,Plastic, Auto

SEMESTER : First

**SUBJECT** : English and communication skill (Practical)

**LESSION PLAN DURATION**: 15 WEEKS

**WORK LOAD PER WEEK** : Practicals 4+4+2+4

| WEEK | Practical   |  |  |
|------|---|--|--|
|      | Reading Practice of lessons in the Lab Activity classes.                        |  |  |
| 1    | Comprehension exercises of unseen passages along with the lessons prescribed.   |  |  |
|      | Vocabulary enrichment and grammar exercises based on the selected readings      |  |  |
| 2    | Conversation Practice   |  |  |
| 3    | Chapter-1.3 Comprehension Passages  |  |  |
| 4    | Chapter 1.4 Comprehension Passages  |  |  |
| 5    | Chapter 1.5 Comprehension Passages  |  |  |
| 6    | Reading aloud Newspaper headlines and important articles                        |  |  |
| 7    | Introducing oneself, others and leave- taking(talking about yourself)           |  |  |
| 8    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |
| 9    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |
| 10   | Narayan Murthy's speech at LBSNA  |  |  |
| 11   | Offering-Responding to offers   |  |  |
| 12   | Apologizing & Forgiving, Complaining;   |  |  |
| 13   | Talking about likes and dislikes  |  |  |
| 4.4  | Self-introduction Mock  |  |  |
| 14   | Situational Conversation  |  |  |
| 45   | Revision  |  |  |
| 15   | Revision  |  |  |

NAME OF THE FACULTY : Ms. Neetu Gupta (Guest Faculty)

DISCIPLINE : Civil(A), Electrical, Plastic

SEMESTER : 1<sup>st</sup>

SUBJECT : English & communication skill

LESSION PLAN DURATION : 15 WEEKS

**WORK LOAD PER WEEK** : Lectures (Theory) =  $\underline{02} + 02 + 02$ 

| WEEK |                    |                  | THEORY   |  |  |  |
|------|--------------------|------------------|--|--|--|--|
|      | LECT<br>URE<br>DAY | Coverage<br>Date | TOPIC (WITH ASSIGNMENT & TESTS)  |  |  |  |
| 1    | 1                  |                  | Techniques of reading: Skimming and Scanning, Extensive and Intensive Reading: Textual Study |  |  |  |
|      | 2                  |                  | Homecoming – R.N. Tagore   |  |  |  |
| 2    | 3                  |                  | Life Sketch of Sir Mokshagundam Visvesvarayya,   |  |  |  |
|      | 4                  |                  | Nouns  |  |  |  |
| 3    | 5                  |                  | Pronouns   |  |  |  |
|      | 6                  |                  | Significance, essentials and effectiveness of Written Communication                          |  |  |  |
| 4    | 7                  |                  | Revision   |  |  |  |
|      | 8                  |                  | Revision   |  |  |  |
|      |                    |                  | 1 <sup>st</sup> sessional test   |  |  |  |
| 5    | 9                  |                  | Life Sketch of Dr. Abdul Kalam   |  |  |  |
|      | 10                 |                  | Concept and Process of Communication   |  |  |  |
| 6    | 11                 |                  | Types of Communication (Verbal Communication)  |  |  |  |
|      | 12                 |                  | Barriers to communication  |  |  |  |
| 7    | 13                 |                  | Articles   |  |  |  |
|      | 14                 |                  | Verbs(Main and Auxiliary)  |  |  |  |
| 8    |                    |                  | Speaking Skill: Significance and essentials of Spoken Communication                          |  |  |  |
|      | 16                 |                  | Listening Skill: Significance and essentials of Listening, Revision                          |  |  |  |
|      |                    | ı                | 2 <sup>nd</sup> sessional test   |  |  |  |
|      |                    |                  | Narayan Murthy's speech at LBSNA   |  |  |  |
|      | 18                 |                  | Narayan Murthy's speech at LBSNA   |  |  |  |
| 10   | 19                 |                  | Tenses   |  |  |  |
|      | 20                 |                  | Tenses   |  |  |  |
| 11   | 21                 |                  | Notice Writing   |  |  |  |
|      | 22                 |                  | Notice Writing   |  |  |  |
| 12   | 23                 |                  | Official Letters and E-mails   |  |  |  |
|      | 24                 |                  | Official Letters and E-mails   |  |  |  |
|      |                    |                  | 3 <sup>rd</sup> sessional test   |  |  |  |
| 13   | 25                 |                  | Frequently-used Abbreviations used in Letter-Writing   |  |  |  |
| 4.4  | 26                 |                  | Paragraph Writing  |  |  |  |
| 14   | 27                 |                  | Paragraph Writing  |  |  |  |
|      | 28                 |                  | Netiquettes  |  |  |  |
| 15   | 29                 |                  | Revision   |  |  |  |
|      | 30                 |                  | Revision   |  |  |  |

NAME OF THE FACULTY : Ms. Neetu Gupta (Guest Faculty)

**DISCIPLINE** : Civil(A), Electrical

SEMESTER : First

**SUBJECT** : English and communication skill (Practical)

LESSION PLAN DURATION : 15 WEEKS WORK LOAD PER WEEK : Practicals 4+4

| WEEK | Practical   |  |  |
|------|---|--|--|
|      | Reading Practice of lessons in the Lab Activity classes.                        |  |  |
| 1    | Comprehension exercises of unseen passages along with the lessons prescribed.   |  |  |
|      | Vocabulary enrichment and grammar exercises based on the selected readings      |  |  |
| 2    | Conversation Practice   |  |  |
| 3    | Chapter-1.3 Comprehension Passages  |  |  |
| 4    | Chapter 1.4 Comprehension Passages  |  |  |
| 5    | Chapter 1.5 Comprehension Passages  |  |  |
| 6    | Reading aloud Newspaper headlines and important articles                        |  |  |
| 7    | Introducing oneself, others and leave- taking(talking about yourself)           |  |  |
| 8    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |
| 9    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |
| 10   | Narayan Murthy's speech at LBSNA  |  |  |
| 11   | Offering-Responding to offers   |  |  |
| 12   | Apologizing & Forgiving, Complaining;   |  |  |
| 13   | Talking about likes and dislikes  |  |  |
| 4.4  | Self-introduction Mock  |  |  |
| 14   | Situational Conversation  |  |  |
| 45   | Revision  |  |  |
| 15   | Revision  |  |  |

NAME OF THE FACULTY : Ms. Jashanpreet Kaur (Lecturer)
DISCIPLINE : Mech A, Mech B, Comp,Auto

SEMESTER : 1<sup>st</sup>

SUBJECT : English & communication skill

LESSION PLAN DURATION : 15 WEEKS

**WORK LOAD PER WEEK** : Lectures (Theory) = 02 + 02 + 02 + 02

| WEEK | THEORY             |                                  |  |  |  |  |
|------|--------------------|----------------------------------|--|--|--|--|
|      | LECT<br>URE<br>DAY | Coverage<br>Date                 | TOPIC (WITH ASSIGNMENT & TESTS)  |  |  |  |
| 1    | 1                  |                                  | Techniques of reading: Skimming and Scanning, Extensive and Intensive Reading: Textual Study |  |  |  |
|      | 2                  |                                  | Homecoming – R.N. Tagore   |  |  |  |
| 2    | 3                  |                                  | Life Sketch of Sir Mokshagundam Visvesvarayya,   |  |  |  |
|      | 4                  |                                  | Nouns  |  |  |  |
| 3    | 5                  |                                  | Pronouns   |  |  |  |
|      | 6                  |                                  | Significance, essentials and effectiveness of Written Communication                          |  |  |  |
| 4    | 7                  |                                  | Revision   |  |  |  |
|      | 8                  |                                  | Revision   |  |  |  |
|      |                    |                                  | 1 <sup>st</sup> sessional test   |  |  |  |
| 5    | 9                  |                                  | Life Sketch of Dr. Abdul Kalam   |  |  |  |
|      | 10                 |                                  | Concept and Process of Communication   |  |  |  |
| 6    | 11                 |                                  | Types of Communication (Verbal Communication)  |  |  |  |
|      | 12                 |                                  | Barriers to communication  |  |  |  |
| 7    | 13                 |                                  | Articles   |  |  |  |
|      | 14                 |                                  | Verbs(Main and Auxiliary)  |  |  |  |
| 8    |                    |                                  | Speaking Skill: Significance and essentials of Spoken Communication                          |  |  |  |
|      | 16                 |                                  | Listening Skill: Significance and essentials of Listening, Revision                          |  |  |  |
|      |                    | •                                | 2 <sup>nd</sup> sessional test   |  |  |  |
|      |                    | Narayan Murthy's speech at LBSNA |  |  |  |  |
|      | 18                 |                                  | Narayan Murthy's speech at LBSNA   |  |  |  |
| 10   | 19                 |                                  | Tenses   |  |  |  |
|      | 20                 |                                  | Tenses   |  |  |  |
| 11   | 21                 |                                  | Notice Writing   |  |  |  |
|      | 22                 |                                  | Notice Writing   |  |  |  |
| 12   | 23                 |                                  | Official Letters and E-mails   |  |  |  |
|      | 24                 |                                  | Official Letters and E-mails   |  |  |  |
|      |                    | •                                | 3 <sup>rd</sup> sessional test   |  |  |  |
| 13   | 25                 |                                  | Frequently-used Abbreviations used in Letter-Writing   |  |  |  |
| 1.4  | 26                 |                                  | Paragraph Writing  |  |  |  |
| 14   | 27                 |                                  | Paragraph Writing  |  |  |  |
|      | 28                 |                                  | Netiquettes  |  |  |  |
| 15   | 29                 |                                  | Revision   |  |  |  |
|      | 30                 |                                  | Revision   |  |  |  |

NAME OF THE FACULTY : Dr. Jashanpreet Kaur (Lecturer)

DISCIPLINE : Mech A, Comp.

SEMESTER : First

**SUBJECT** : English and communication skill (Practical)

LESSION PLAN DURATION : 15 WEEKS

**WORK LOAD PER WEEK** : Practicals = 4+4

| WEEK | Practical   |  |  |  |
|------|---|--|--|--|
|      | Reading Practice of lessons in the Lab Activity classes.                        |  |  |  |
| 1    | Comprehension exercises of unseen passages along with the lessons prescribed.   |  |  |  |
|      | Vocabulary enrichment and grammar exercises based on the selected readings      |  |  |  |
| 2    | Conversation Practice   |  |  |  |
| 3    | Chapter-1.3 Comprehension Passages  |  |  |  |
| 4    | Chapter 1.4 Comprehension Passages  |  |  |  |
| 5    | Chapter 1.5 Comprehension Passages  |  |  |  |
| 6    | Reading aloud Newspaper headlines and important articles                        |  |  |  |
| 7    | Introducing oneself, others and leave- taking(talking about yourself)           |  |  |  |
| 8    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |  |
| 9    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |  |
| 10   | Narayan Murthy's speech at LBSNA  |  |  |  |
| 11   | Offering-Responding to offers   |  |  |  |
| 12   | Apologizing & Forgiving, Complaining;   |  |  |  |
| 13   | Talking about likes and dislikes  |  |  |  |
|      |   |  |  |  |

| 14 | Self-introduction Mock   |
|----|--------------------------|
|    | Situational Conversation |
| 15 | Revision                 |
|    | Revision                 |

NAME OF THE FACULTY : Mrs. Sharmila Sharma (Guest Faculty)

DISCIPLINE :ECE, Arch, Civil B

SEMESTER : 1<sup>st</sup>

SUBJECT : English & communication skill

LESSION PLAN DURATION : 15 WEEKS

**WORK LOAD PER WEEK** : Lectures (Theory) = 02 + 02 + 02

| WEEK |                    | THEORY                           |  |
|------|--------------------|----------------------------------|--|
|      | LECT<br>URE<br>DAY | Coverage<br>Date                 | TOPIC (WITH ASSIGNMENT & TESTS)  |
| 1    | 1                  |                                  | Techniques of reading: Skimming and Scanning, Extensive and Intensive Reading: Textual Study |
|      | 2                  |                                  | Homecoming – R.N. Tagore   |
| 2    | 3                  |                                  | Life Sketch of Sir Mokshagundam Visvesvarayya,   |
|      | 4                  |                                  | Nouns  |
| 3    | 5                  |                                  | Pronouns   |
|      | 6                  |                                  | Significance, essentials and effectiveness of Written Communication                          |
| 4    | 7                  |                                  | Revision   |
|      | 8                  |                                  | Revision   |
|      |                    |                                  | 1 <sup>st</sup> sessional test   |
| 5    | 9                  |                                  | Life Sketch of Dr. Abdul Kalam   |
|      | 10                 |                                  | Concept and Process of Communication   |
| 6    | 11                 |                                  | Types of Communication (Verbal Communication)  |
|      | 12                 |                                  | Barriers to communication  |
| 7    | 13                 |                                  | Articles   |
|      | 14                 |                                  | Verbs(Main and Auxiliary)  |
| 8    |                    |                                  | Speaking Skill: Significance and essentials of Spoken Communication                          |
|      | 16                 |                                  | Listening Skill: Significance and essentials of Listening, Revision                          |
|      |                    | ı                                | 2 <sup>nd</sup> sessional test   |
|      |                    | Narayan Murthy's speech at LBSNA |  |
|      | 18                 |                                  | Narayan Murthy's speech at LBSNA   |
| 10   | 19                 |                                  | Tenses   |
|      | 20                 |                                  | Tenses   |
| 11   | 21                 |                                  | Notice Writing   |
|      | 22                 |                                  | Notice Writing   |
| 12   | 23                 |                                  | Official Letters and E-mails   |
|      | 24                 |                                  | Official Letters and E-mails   |
|      |                    |                                  | 3 <sup>rd</sup> sessional test   |
| 13   | 25                 |                                  | Frequently-used Abbreviations used in Letter-Writing   |
| 4.4  | 26                 |                                  | Paragraph Writing  |
| 14   | 27                 |                                  | Paragraph Writing  |
|      | 28                 |                                  | Netiquettes  |
| 15   | 29                 |                                  | Revision   |
|      | 30                 |                                  | Revision   |

NAME OF THE FACULTY : Ms. Sharmila (Guest Faculty)

DISCIPLINE : Civil-B,ECE.

SEMESTER : First

**SUBJECT** : English and communication skill (Practical)

LESSION PLAN DURATION : 15 WEEKS

**WORK LOAD PER WEEK** : Practicals = 4+4

| WEEK | Practical   |  |  |  |  |
|------|---|--|--|--|--|
|      | Reading Practice of lessons in the Lab Activity classes.                        |  |  |  |  |
| 1    | Comprehension exercises of unseen passages along with the lessons prescribed.   |  |  |  |  |
|      | Vocabulary enrichment and grammar exercises based on the selected readings      |  |  |  |  |
| 2    | Conversation Practice   |  |  |  |  |
| 3    | Chapter-1.3 Comprehension Passages  |  |  |  |  |
| 4    | Chapter 1.4 Comprehension Passages  |  |  |  |  |
| 5    | Chapter 1.5 Comprehension Passages  |  |  |  |  |
| 6    | Reading aloud Newspaper headlines and important articles                        |  |  |  |  |
| 7    | Introducing oneself, others and leave- taking(talking about yourself)           |  |  |  |  |
| 8    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |  |  |
| 9    | Just a minute (JAM) sessions: Speaking extempore for one minute on given topics |  |  |  |  |
| 10   | Narayan Murthy's speech at LBSNA  |  |  |  |  |
| 11   | Offering-Responding to offers   |  |  |  |  |
| 12   | Apologizing & Forgiving, Complaining;   |  |  |  |  |
| 13   | Talking about likes and dislikes  |  |  |  |  |

| 14 | Self-introduction Mock   |
|----|--------------------------|
|    | Situational Conversation |
| 15 | Revision                 |
|    | Revision                 |

NAME OF THE FACULTY : SARITA MANN (Lecturer)

DISCIPLINE : Elect., Mech A, Mech B

SEMESTER :FIRST

SUBJECT : APPLIED PHYSICS

LESSION PLAN DURATION : 15 WEEKS

WORK LOAD PER WEEK : Lectures =  $\underline{2+2+2}$  Practicals =  $\underline{4+4+2}$ 

| WEEK |                    | THEORY   |    | PRACTICAL   |
|------|--------------------|--|----|---|
|      | LECT<br>URE<br>DAY | TOPIC (WITH ASSIGNMENT & TESTS)  |    | TOPIC   |
| 1    | 1                  | Definition of physics and physical quantities  | 1  | Familiarization of measuring  |
|      | 2                  | Units-fundamental and derived units  |    | instruments-Vernier caliper, screw gauge spherometer                    |
| 2    | 3                  | System of units-FPS, CGS, MKS, SI  | 2  | To find the diameter of a solid   |
|      | 4                  | Dimensions and dimensional formulae  |    | cylinder using Vernier caliper  |
| 3    | 5                  | SI unit and dimensions of some physical quantities   | 3  | To find the internal diameter and                                       |
|      | 6                  | Dimensional equations and principle of homogeneity   |    | depth of a beaker using Vernier calliper                                |
| 4    | 7                  | scalar and vector quantities with examples, Vector addition-triangle and parallelogram law and               | 4  | Checking of files and viva voce   |
|      | 8                  | Force, its units and resolution of force, Newton's laws of motion with examples                              |    |   |
|      |                    | 1 <sup>st</sup> Sessional test   |    |   |
| 5    | 9                  | Discussion of sessional  | 5  | To find the diameter of wire using                                      |
|      | 10                 | Linear momentum, impulse and law of conservation   |    | screw gauge   |
| 6    | 11                 | Angular displacement, velocity, acceleration, time period, frequency   | 6  | To find thickness of paper using screw gauge.                           |
|      | 12                 | Relation between linear and angular velocity   |    |   |
| 7    | 13                 | Centripetal and centrifugal force and banking of roads   | _  | Checking of files & viva-voce   |
| 0    | 14<br>15           | Work-definition, formula and unit and types of work,  Energy-definition, units and transformation of energy, | 7  | T 14 : 41 41:1 C 1  |
| 8    | 13                 | Kinetic energy and potential energy  | 8  | To determine the thickness of glass                                     |
|      | 16                 | Law of conservation of energy with derivation, Power-  | 0  | strip using a spherometer   |
|      |                    | definition, formula and units  2 <sup>nd</sup> Sessional test  |    |   |
|      |                    | 2 Sessional test   |    |   |
| 9    | 17                 | Discussion of sessional  | 9  | To determine the radius of curvature of a given spherical surface using |
|      | 18                 | Elasticity and plasticity, deforming and restoring force   | )  | spherometer   |
| 10   | 19                 | Definition of stress and strain, Hooke's law   | 10 | To verify parallelogram law of  |
|      | 20                 | Types of modulus of elasticity   |    | forces  |

| 11 | 21 | Pressure-atmospheric pressure, gauge  |    | To determine atmospheric pressure                            |
|----|----|---|----|--|
|    | 22 | Surface tension and applications  | 11 | using Fortin's barometer                                     |
| 12 | 23 | Viscosity-definition, examples and effect of  |    | To determine force constant of a                             |
|    | 24 | Definition of heat and temperature, Difference between heat and temperature   | 12 | spring using Hooke's law                                     |
| 13 | 25 | Principle and working of mercury thermometer  |    | Checking of files & viva-voce                                |
|    | 26 | Modes of transfer of heat-conduction, convection, radiation, Different scales of temperature and their relationship | 13 |  |
|    |    | 3 <sup>rd</sup> Sessional test  | l  |  |
| 14 | 27 | Revision of Unit 1 and Unit 2   | 14 | To measure room temperature with the help of thermometer and |
|    | 28 | Revision of Unit 3 and Unit 4   | 14 | convert to different scales                                  |
| 15 | 29 | Revision of Unit 5 and numerical problem  | 15 | Revision of Practicals                                       |
|    | 30 | Discussion of previous year Q. Papers   |    |  |

NAME OF THE FACULTY : Mayur Rohilla (Guest Faculty)

DISCIPLINE : Civil A, ECE, Arch, Electrical (Only Practical)

SEMESTER :FIRST

SUBJECT : APPLIED PHYSICS

LESSION PLAN DURATION : 15 WEEKS

WORK LOAD PER WEEK : Lectures =  $\underline{2+2+2}$  Practicals =  $\underline{4+4+4+2}$ 

| WEEK |                    | THEORY   | PRACTICAL |  |  |
|------|--------------------|--|-----------|--|--|
|      | LECT<br>URE<br>DAY | TOPIC (WITH ASSIGNMENT & TESTS)  |           | TOPIC  |  |
| 1    | 1                  | Definition of physics and physical quantities  | 1         | Familiarization of measuring                         |  |
|      | 2                  | Units-fundamental and derived units  |           | instruments-Vernier caliper, screw gauge spherometer |  |
| 2    | 3                  | System of units-FPS, CGS, MKS, SI  | 2         | To find the diameter of a solid                      |  |
|      | 4                  | Dimensions and dimensional formulae  |           | cylinder using Vernier caliper                       |  |
| 3    | 5                  | SI unit and dimensions of some physical quantities   | 3         | To find the internal diameter and                    |  |
|      | 6                  | Dimensional equations and principle of homogeneity   |           | depth of a beaker using Vernier calliper             |  |
| 4    | 7                  | scalar and vector quantities with examples, Vector addition-triangle and parallelogram law and | 4         | Checking of files and viva voce                      |  |
|      | 8                  | Force, its units and resolution of force, Newton's laws  |           |  |  |
|      |                    | of motion with examples  |           |  |  |
|      |                    | 1 <sup>st</sup> Sessional test   |           | ,  |  |
| 5    | 9                  | Discussion of sessional  | 5         | To find the diameter of wire using                   |  |
|      | 10                 | Linear momentum, impulse and law of conservation   |           | screw gauge  |  |
| 6    | 11                 | Angular displacement, velocity, acceleration, time   |           | To find thickness of paper using                     |  |
|      |                    | period, frequency  | 6         | screw gauge.   |  |
|      | 12                 | Relation between linear and angular velocity   |           |  |  |
| 7    | 13                 | Centripetal and centrifugal force and banking of roads   |           | Checking of files & viva-voce                        |  |
|      | 14                 | Work-definition, formula and unit and types of work,   | 7         |  |  |
| 8    | 15                 | Energy-definition, units and transformation of energy,   |           | To determine the thickness of glass                  |  |
|      |                    | Kinetic energy and potential energy  | 8         | strip using a spherometer                            |  |
|      | 16                 | Law of conservation of energy with derivation, Power-  |           |  |  |
|      |                    | definition, formula and units  2 <sup>nd</sup> Sessional test                                  |           |  |  |
|      | 1.7                |  |           | T = 1  |  |
| 9    | 17                 | Discussion of sessional  |           | To determine the radius of curvature                 |  |
|      | 18                 | Elasticity and plasticity, deforming and restoring force                                       | 9         | of a given spherical surface using spherometer       |  |
| 10   | 19                 | Definition of stress and strain, Hooke's law   | 10        | To verify parallelogram law of                       |  |
|      | 20                 | Types of modulus of elasticity   |           | forces   |  |
| 11   | 21                 | Pressure-atmospheric pressure, gauge   |           |  |  |

|    | 22    | Surface tension and applications  | 11 | To determine atmospheric pressure using Fortin's barometer   |
|----|-------|---|----|--|
| 12 | 23 24 | Viscosity-definition, examples and effect of  Definition of heat and temperature, Difference between heat and temperature | 12 | To determine force constant of a spring using Hooke's law    |
| 13 | 25    | Principle and working of mercury thermometer  |    | Checking of files & viva-voce                                |
|    | 26    | Modes of transfer of heat-conduction, convection, radiation, Different scales of temperature and their relationship       | 13 |  |
|    | 1     | 3 <sup>rd</sup> Sessional test  | 1  |  |
| 14 | 27    | Revision of Unit 1 and Unit 2   | 14 | To measure room temperature with the help of thermometer and |
|    | 28    | Revision of Unit 3 and Unit 4   | 14 | convert to different scales                                  |
| 15 | 29    | Revision of Unit 5 and numerical problem  | 15 | Revision of Practicals                                       |
|    | 30    | Discussion of previous year Q. Papers   | 13 |  |

NAME OF THE FACULTY : Mr. Mayur Rohilla (Guest Faculty)

DISCIPLINE : Mech B
SEMESTER : 1st
SUBJECT : ESDM
LESSION PLAN DURATION : 15 WEEKS
WORK LOAD PER WEEK : Lectures = 02

| WEEK |      | THEORY   |
|------|------|--|
|      | LECT | TOPIC (WITH ASSIGNMENT & TESTS)  |
|      | URE  |  |
|      | DAY  |  |
| 1    | 1    | Introduction   |
|      | 2    | Basics of ecology, Eco system- concept   |
| 2    | 3    | Sustainable development  |
|      | 4    | Renewable and non-renewable Sources of energy and their advantages & disadvantages                             |
| 3    | 5    | Rain water harvesting  |
|      | 6    | Deforestation – its effects & control measures   |
| 4    | 7    | Air Pollution: Source of air pollution   |
|      | 8    | Effect of air pollution on human health, economy, Air pollution control methods                                |
|      |      | 1 <sup>st</sup> sessional test   |
| 5    | 9    | Defination and Source of noise pollution, Unit of noise, Effect of noise pollution,                            |
|      |      | Acceptable noise level, Different method of minimizing noise pollution   |
|      | 10   | Revision of Soil and Noise Pollution   |
| 6    | 11   | Water Pollution: Impurities in water, Cause of water pollution   |
|      | 12   | Source of water pollution. Effect of water pollution on human health, Concept of DO, BOD COD                   |
| 7    | 13   | Prevention of water pollution- Water treatment processes, Sewage treatment                                     |
|      | 14   | Water quality standard. Defination and Sources of soil pollution   |
| 8    | 15   | Effects and Control of soil pollution, Types of Solid waste- House hold, Industrial, Agricultural, Biomedical, |
|      | 16   | Disposal of solid waste, Solid waste management E-waste, E – waste management                                  |
|      |      | 2 <sup>nd</sup> sessional test   |
| 9    | 17   | Impact of Energy Usage on Environment Global Warming   |
|      | 18   | Green House Effect, Depletion of Ozone Layer, Acid Rain  |
| 10   | 19   | Eco-friendly Material, Recycling of Material, Concept of Green Buildings                                       |
|      | 20   | Concept of Carbon Credit & Carbon footprint.   |
| 11   | 21   | Revision of Impact of Energy Usage on Environment  |

|    | 22 | Natural Disaster: such as Flood, Cyclone   |
|----|----|--|
| 12 | 23 | Natural Disaster: Earthquakes and Landslides etc   |
|    | 24 | Man-made Disaster: such as Fire, Industrial Pollution  |
| 13 | 25 | Man-made Disaster: Nuclear Disaster, Biological Disasters, Accidents (Air, Sea Rail & Road)                      |
|    | 26 | Man-made Disaster: Structural failures (Building and Bridge), War & Terrorism etc.                               |
| 14 | 27 | Disaster Preparedness Plan Prediction, Disaster Preparedness Early Warnings and Safety<br>Measures of Disaster   |
|    | 28 | Psychological response and Management (Trauma, Stress), Psychological response and Management (Rumour and Panic) |
|    | •  | 3 <sup>rd</sup> Sessional test   |
| 15 | 29 | Revision and discussion of previous year Q. Papers   |
|    | 30 | Revision and discussion of previous year Q. Papers   |

NAME OF THE FACULTY : Lavaney Mahajan (Guest Faculty)

DISCIPLINE : Comp, Civil B, Auto, Plastic

SEMESTER :FIRST

SUBJECT : APPLIED PHYSICS

LESSION PLAN DURATION : 15 WEEKS

WORK LOAD PER WEEK : Lectures =  $\underline{2+2+2}+2$  Practicals =  $\underline{4+4+4+2}$ 

| WEEK |                    | THEORY  |    | PRACTICAL   |
|------|--------------------|---|----|---|
|      | LECT<br>URE<br>DAY | TOPIC (WITH ASSIGNMENT & TESTS)   |    | TOPIC   |
| 1    | 1 2                | Definition of physics and physical quantities Units-fundamental and derived units   | 1  | Familiarization of measuring instruments-Vernier caliper, screw gauge spherometer   |
| 2    | 3 4                | System of units-FPS, CGS, MKS, SI  Dimensions and dimensional formulae  | 2  | To find the diameter of a solid cylinder using Vernier caliper                      |
| 3    | 5                  | SI unit and dimensions of some physical quantities  Dimensional equations and principle of homogeneity  | 3  | To find the internal diameter and depth of a beaker using Vernier calliper          |
| 4    | 7 8                | scalar and vector quantities with examples, Vector addition-triangle and parallelogram law and  Force, its units and resolution of force, Newton's laws of motion with examples | 4  | Checking of files and viva voce   |
|      |                    | 1 <sup>st</sup> Sessional test  |    |   |
| 5    | 9                  | Discussion of sessional   | 5  | To find the diameter of wire using screw gauge                                      |
| 6    | 10<br>11<br>12     | Linear momentum, impulse and law of conservation  Angular displacement, velocity, acceleration, time period, frequency  Relation between linear and angular velocity            | 6  | To find thickness of paper using screw gauge.                                       |
| 7    | 13<br>14           | Centripetal and centrifugal force and banking of roads Work-definition, formula and unit and types of work,   | 7  | Checking of files & viva-voce   |
| 8    | 15<br>16           | Energy-definition, units and transformation of energy, Kinetic energy and potential energy  Law of conservation of energy with derivation, Power- definition, formula and units | 8  | To determine the thickness of glass strip using a spherometer                       |
|      |                    | 2 <sup>nd</sup> Sessional test  | •  |   |
| 9    | 17<br>18           | Discussion of sessional  Elasticity and plasticity, deforming and restoring   | 9  | To determine the radius of curvature of a given spherical surface using spherometer |
| 10   | 19<br>20           | Definition of stress and strain, Hooke's law  Types of modulus of elasticity  | 10 | To verify parallelogram law of forces   |

| 11 | 21       | Pressure-atmospheric pressure, gauge  |    | To determine atmospheric pressure                            |
|----|----------|---|----|--|
|    | 22       | Surface tension and applications  | 11 | using Fortin's barometer                                     |
| 12 | 23       | Viscosity-definition, examples and effect of  |    | To determine force constant of a                             |
|    | 24       | Definition of heat and temperature, Difference between heat and temperature   | 12 | spring using Hooke's law                                     |
| 13 | 25       | Principle and working of mercury thermometer  |    | Checking of files & viva-voce                                |
|    | 26       | Modes of transfer of heat-conduction, convection, radiation, Different scales of temperature and their relationship | 13 |  |
|    | <u> </u> | 3 <sup>rd</sup> Sessional test  |    |  |
| 14 | 27       | Revision of Unit 1 and Unit 2   | 14 | To measure room temperature with the help of thermometer and |
|    | 28       | Revision of Unit 3 and Unit 4   | 14 | convert to different scales                                  |
| 15 | 29       | Revision of Unit 5 and numerical problem  | 15 | Revision of Practicals                                       |

**Subject: Applied Maths** 

Name of Faculty: Visiting Faculty

Discipline: Civil A, Mech A, Plastic, Arch, ECE

Work Load Per week: 4+4+4+4+4

| Week | DAY                                   | Theory (Topics)  | Coverage<br>Date |
|------|---------------------------------------|--|------------------|
|      | 1                                     | Definition of complex number, real and imaginary parts   |                  |
| 4    | 2                                     | Polar and Cartesian Form and their inter conversion  |                  |
| 1    | 3                                     | Conjugate of a complex number  |                  |
|      | 4                                     | Modulus/argument of complex No   |                  |
|      | 1                                     | Addition subtraction, multiplication and division of complex number.   |                  |
|      | 2                                     | Numericals complex number And Assignment-I   |                  |
| 2    | 3                                     | Fundamental Rules of Logarithms  |                  |
|      | 4                                     | Logarithm Conversation Log to exp and vice versa   |                  |
|      | 1                                     | Numericals Logarithms  |                  |
|      | 2                                     | Numericals And Assignment-II   |                  |
| 3    | 3                                     | Factorial  |                  |
|      | 4                                     | Permutation, combination   |                  |
|      | 1                                     | Binomial theorem expansion   |                  |
|      | 2                                     | General Term, Middle Term/Co- eff of xn  |                  |
| 4    | 3                                     | Binomial theorem for any index And Assignment-III  |                  |
|      | 4                                     | Revision   |                  |
|      | · · · · · · · · · · · · · · · · · · · | 1st Sessional test   |                  |
|      | 1                                     | Matrics: Define/Types  |                  |
|      | 2                                     | Addition subtraction of Matrices   |                  |
| 5    | 3                                     | Multiplication of Matrices   |                  |
| _    | 4                                     | Determinants (up to 2 order) by laplace method   |                  |
|      | 1                                     | Solution of equation by Cramer's Rule And Assignment-IV  |                  |
|      | 2                                     | Trigonometry: Concept of angle: measurement of angle   |                  |
| 6    | 3                                     | Conversion of angles   |                  |
|      | 4                                     | Fundamental Identities, Allied angles  |                  |
|      | 1                                     | Addition and subtraction formula   |                  |
|      | 2                                     | Addition and subtraction formula Numericals  |                  |
| 7    | 3                                     | Transformation formula   |                  |
|      | 4                                     | Numericals   |                  |
|      | 1                                     | Numericals   |                  |
| _    | 2                                     | Application: Angle of elevation/height/distance  |                  |
| 8    | 3                                     | Numericals And Assignment-V  |                  |
|      | 4                                     | Revision   |                  |
|      | +                                     | 2 <sup>nd</sup> Sessional test   |                  |
|      | 1                                     | Point: Distance Formula  |                  |
| -    | 2                                     | Mid Point Formula  |                  |
| 9    | 3                                     | Area of Triangle   |                  |
| -    | 4                                     | Straight line: Slope of a line   |                  |
|      | 1                                     | Equation of straight line in various standards forms   |                  |
|      | 2                                     |  |                  |
| 10   |                                       | Equation of straight line in various standards forms  Intersection of two straight lines, concurrency of lines |                  |
| -    | 3                                     | Intersection of two straight lines, concurrency of lines   |                  |
|      | 4                                     | Angle between two straight lines, parallel and perpendicular lines   |                  |

|     | _ |  |  |
|-----|---|--|--|
|     | 2 | Conversion of general form of equation to the various forms And Assignment-VI                  |  |
|     | 3 | Circle: General equation of a circle   |  |
|     | 4 | Centre and radius of circle  |  |
|     | 1 | Find Standard equation of circle and centre and radius   |  |
|     | 2 | Find general equation of circle and centre and radius  |  |
| 12  | 3 | To find the equation of a circle, given three points lying on it                               |  |
|     | 4 | To find the equation of a circle given coordinates of end points of a diameter, Assignment-VII |  |
|     | 1 | Theoretical Introduction of MATLAB   |  |
|     | 2 | Addition and subtraction of values Trigonometric functions                                     |  |
| 13  | 3 | Addition and subtraction of values Inverse Trigonometric functions                             |  |
|     | 4 | General Practice And Assignment-VIII   |  |
|     |   | 3 <sup>rd</sup> Sessional test   |  |
|     | 1 | Practice of Previous Question Papers   |  |
| 1.4 | 2 | Practice of Previous Question Papers   |  |
| 14  | 3 | Practice of Previous Question Papers   |  |
|     | 4 | Practice of Previous Question Papers   |  |
|     | 1 | Revision   |  |
| 15  | 2 | Revision   |  |
| 15  | 3 | Revision   |  |
|     | 4 | Revision   |  |

**Subject: Applied Maths** 

Name of Faculty: Ms. Kanupriya (Lecturer)

Discipline: Comp, Civil B, Mech B, Electrical, Auto

Work Load Per week: 4+4+4+4+4

| Week | DAY      | Theory (Topics)  | Coverage<br>Date |
|------|----------|--|------------------|
|      | 1        | Definition of complex number, real and imaginary parts   |                  |
| 4    | 2        | Polar and Cartesian Form and their inter conversion  |                  |
| 1    | 3        | Conjugate of a complex number  |                  |
| -    | 4        | Modulus/argument of complex No   |                  |
|      | 1        | Addition subtraction, multiplication and division of complex number.                                       |                  |
|      | 2        | Numericals complex number And Assignment-I   |                  |
| 2    | 3        | Fundamental Rules of Logarithms  |                  |
| -    | 4        | Logarithm Conversation Log to exp and vice versa   |                  |
|      | 1        | Numericals Logarithms  |                  |
| _    | 2        | Numericals And Assignment-II   |                  |
| 3    | 3        | Factorial  |                  |
| -    | 4        | Permutation, combination   |                  |
|      | 1        | Binomial theorem expansion   |                  |
| -    | 2        | General Term, Middle Term/ Co- eff of xn   |                  |
| 4    | 3        | Binomial theorem for any index And Assignment-III  |                  |
| -    | 4        | Revision   |                  |
|      | <u> </u> | 1st Sessional test   |                  |
|      | 1        | Matrics: Define/Types  |                  |
| -    | 2        | Addition subtraction of Matrices   |                  |
| 5    | 3        | Multiplication of Matrices   |                  |
| -    | 4        | Determinants (up to 2 order) by laplace method   |                  |
|      | 1        | Solution of equation by Cramer's Rule And Assignment-IV  |                  |
| -    | 2        | Trigonometry: Concept of angle: measurement of angle   |                  |
| 6    | 3        | Conversion of angles   |                  |
| -    | 4        | Fundamental Identities, Allied angles  |                  |
|      | 1        | Addition and subtraction formula   |                  |
| -    | 2        | Addition and subtraction formula Numericals  |                  |
| 7    | 3        | Transformation formula   |                  |
| -    | 4        | Numericals   |                  |
|      | 1        | Numericals   |                  |
| -    | 2        | Application: Angle of elevation/height/distance  |                  |
| 8    | 3        | Numericals And Assignment-V  |                  |
| _    | 4        | Revision   |                  |
|      |          | 2 <sup>nd</sup> Sessional test   |                  |
|      | 1        | Point: Distance Formula  |                  |
| -    | 2        | Mid Point Formula  |                  |
| 9    | 3        | Area of Triangle   |                  |
| -    | 4        | Straight line: Slope of a line   |                  |
|      |          | Equation of straight line in various standards forms   |                  |
| -    | 1        | Equation of straight line in various standards forms  Equation of straight line in various standards forms |                  |
| 10   | 2        |  |                  |
| -    | 3        | Intersection of two straight lines, concurrency of lines   |                  |
| 11   | 4        | Angle between two straight lines, parallel and perpendicular lines   |                  |
| 11   | 1        | Perpendicular distance formula,  |                  |

|     | 1 |  |  |
|-----|---|--|--|
|     | 2 | Conversion of general form of equation to the various forms And Assignment-VI                  |  |
|     | 3 | Circle: General equation of a circle   |  |
|     | 4 | Centre and radius of circle  |  |
|     | 1 | Find Standard equation of circle and centre and radius   |  |
|     | 2 | Find general equation of circle and centre and radius  |  |
| 12  | 3 | To find the equation of a circle, given three points lying on it                               |  |
|     | 4 | To find the equation of a circle given coordinates of end points of a diameter, Assignment-VII |  |
|     | 1 | Theoretical Introduction of MATLAB   |  |
|     | 2 | Addition and subtraction of values Trigonometric functions                                     |  |
| 13  | 3 | Addition and subtraction of values Inverse Trigonometric functions                             |  |
|     | 4 | General Practice And Assignment-VIII   |  |
|     |   | 3 <sup>rd</sup> Sessional test   |  |
|     | 1 | Practice of Previous Question Papers   |  |
| 1.4 | 2 | Practice of Previous Question Papers   |  |
| 14  | 3 | Practice of Previous Question Papers   |  |
|     | 4 | Practice of Previous Question Papers   |  |
|     | 1 | Revision   |  |
| 15  | 2 | Revision   |  |
| 15  | 3 | Revision   |  |
|     | 4 | Revision   |  |

NAME OF THE FACULTY : Mr. Ravinder Kumar (Lecturer)

DISCIPLINE : Mech A, Auto

SEMESTER : 1<sup>st</sup>

SUBJECT : ESDM LESSION PLAN DURATION : 15 WEEKS

WORK LOAD PER WEEK : Lectures = 02 + 02

| WEEK |            | THEORY   |
|------|------------|--|
|      | LECT       | TOPIC (WITH ASSIGNMENT & TESTS)  |
|      | URE<br>DAY |  |
| 1    | 1          | Introduction   |
|      | 2          | Basics of ecology, Eco system- concept   |
| 2    | 3          | Sustainable development  |
|      | 4          | Renewable and non-renewable Sources of energy and their advantages & disadvantages                             |
| 3    | 5          | Rain water harvesting  |
|      | 6          | Deforestation – its effects & control measures   |
| 4    | 7          | Air Pollution: Source of air pollution   |
|      | 8          | Effect of air pollution on human health, economy, Air pollution control methods                                |
|      |            | 1 <sup>st</sup> sessional test   |
| 5    | 9          | Defination and Source of noise pollution, Unit of noise, Effect of noise pollution,                            |
|      |            | Acceptable noise level, Different method of minimizing noise pollution   |
|      | 10         | Revision of Soil and Noise Pollution   |
| 6    | 11         | Water Pollution: Impurities in water, Cause of water pollution   |
|      | 12         | Source of water pollution. Effect of water pollution on human health, Concept of DO, BOD, COD                  |
| 7    | 13         | Prevention of water pollution- Water treatment processes, Sewage treatment                                     |
|      | 14         | Water quality standard. Defination and Sources of soil pollution   |
| 8    | 15         | Effects and Control of soil pollution, Types of Solid waste- House hold, Industrial, Agricultural, Biomedical, |
|      | 16         | Disposal of solid waste, Solid waste management E-waste, E – waste management                                  |
|      | 1 1        | 2 <sup>nd</sup> sessional test   |
| 9    | 17         | Impact of Energy Usage on Environment Global Warming   |
|      |            |  |
|      | 18         | Green House Effect, Depletion of Ozone Layer, Acid Rain  |
| 10   | 19         | Eco-friendly Material, Recycling of Material, Concept of Green Buildings                                       |
|      | 20         | Concept of Carbon Credit & Carbon footprint.   |
| 11   | 21         | Revision of Impact of Energy Usage on Environment  |

| Natural Disaster: such as Flood, Cyclone  Natural Disaster: Earthquakes and Landslides etc  Man-made Disaster: such as Fire, Industrial Pollution |
|---|
| ^   |
| Man-made Disaster: such as Fire, Industrial Pollution   |
|   |
| Man-made Disaster: Nuclear Disaster, Biological Disasters, Accidents (Air, Sea Rail & Road)   |
| Man-made Disaster: Structural failures (Building and Bridge), War & Terrorism etc.  |
| Disaster Preparedness Plan Prediction, Disaster Preparedness Early Warnings and Safety<br>Measures of Disaster                                    |
| Psychological response and Management (Trauma, Stress), Psychological response and Management (Rumour and Panic)                                  |
| 3 <sup>rd</sup> Sessional test  |
| Revision and discussion of previous year Q. Papers  |
| Revision and discussion of previous year Q. Papers  |
|   |

NAME OF THE FACULTY : Ravinder Kumar (Lecturer)
DISCIPLINE : Civil B, Arch, Plastic

SEMESTER : First

SUBJECT : APPLIED CHEMISTRY (Theory)

LESSION PLAN DURATION : 15 WEEKS

WORK LOAD PER WEEK : Lectures = 3+3+3

|      |                | THEORY  |
|------|----------------|---|
| WEEK | LECTURE<br>DAY | TOPIC (WITH ASSIGNMENT & TESTS)   |
|      | 1              | Introduction of Atomic Structure, Bohr's model of atom  |
| 1    | 2              | Dual character of matter: derivation of de-Broglie's equation<br>Heisenberg's Principle of Uncertainty, modern concept of atomic<br>structure                                 |
|      | 3              | Definition of orbitals shapes of s, p and d-orbitals  |
|      | 4              | Quantum numbers and their significance  |
| 2    | 5              | Aufbau and Pauli's exclusion principles Hund's rule   |
|      | 6              | Electronic configuration of elements up to atomic number 30.  |
|      | 7              | Periodic Table Modern Periodic law and Periodic table,<br>Classification of elements into s, p  |
| 3    | 8              | Classification of elements into d, f-blocks, metals, non-metals and   |
|      | 9              | Chemical bonding: cause of bonding, ionic bond Physical   |
|      | 10             | Covalent bond, and metallic bond (electronsea or gas model),  |
|      | 11             | Doubt Quarries and Revision   |
| 4    | 12             | Metals: mechanical properties of metals such as conductivity, elasticity, strength and stiffness, luster, hardness, toughness, ductility, malleability                        |
|      | l .            | 1 <sup>st</sup> Sessional test  |
|      | 13             | Metals: mechanical properties of metals such as, brittleness, and impact resistance and their uses. Definition of a mineral, ore, gangue flux and slag                        |
| 5    | 14             | Metallurgy of iron from haematite using a blast furnace<br>Commercial varieties of iron   |
|      | 15             | Alloys: definition, necessity of making alloys, composition, properties and uses of duralumin and steel. Heat treatment of steelnormalizing, annealing, quenching, tempering. |
|      | 16             | Doubt Quarries and Revision   |
| 6    | 17             | Solutions: definition, expression of the concentration of a solution in percentage (w/w, w/v and v/v), normality, molarity and molality and ppm.                              |
|      | 18             | Simple problems on solution preparation   |
|      | 19             | Arrhenius concept of acids and bases, strong and weak acids and bases, pH value of a solution and its significance, pH scale  |
| 7    | 20             | Simple numerical problems on pH of acids and bases.   |
|      | 21             | Hard and soft water, causes of hardness of water, types of hardness  – temporary and permanent hardness   |

|    | 1                              | T  |  |  |
|----|--------------------------------|--|--|--|
| 8  | 22                             | Expression of hardness of water, ppm unit of hardness; disadvantages of hard water; removal of hardness  |  |  |
|    | 23                             | Removal of temporary hardness by boiling and Clark's method; removal of permanent hardness of water by Ion-Exchange method   |  |  |
|    | 24                             | Boiler problems caused by hard water: scale and sludge formation, priming and foaming, caustic embrittlement; water sterilization by chlorine, UV radiation and RO |  |  |
| 9  | 25                             | Doubt Quarries and Revision  |  |  |
|    | 26                             | Fuels: definition and classification of higher and lower calorific   |  |  |
|    | 27                             | Characteristics of an ideal fuel. Petroleum: composition and refining of petroleum   |  |  |
|    |                                | 2 <sup>nd</sup> Sessional Test   |  |  |
|    | 28                             | Gaseousfuels: composition, properties and uses of CNG, PNG, LNG, LPG   |  |  |
| 10 | 20                             | Relative advantages of liquid and gaseous fuels over solid fuels.  |  |  |
| 10 | 29                             | Scope of hydrogen as future fuel.  |  |  |
|    | 30                             | Lubricants- Functions and qualities of a good lubricant, classification of lubricants  |  |  |
|    | 31                             | Lubrication mechanism (brief idea only   |  |  |
| 11 | 32                             | Physical properties (brief idea only) of a lubricant: oiliness, viscosity, viscosity index, flash and fire point, ignition temperature, pour point.                |  |  |
|    | 33                             | Doubt Quarries and Revision  |  |  |
| 10 | 34                             | Polymers and Plastics: definition of polymer, classification, addition and condensation polymerization   |  |  |
| 12 | 35                             | Preparation properties and uses of polythene, PVC, Nylon-66  |  |  |
|    | 36                             | Preparation properties and uses Bakelite; definition of plastic  |  |  |
|    | 37                             | Thermoplastics and thermosetting polymers; natural rubber and neoprene, other synthetic rubbers (names only).  |  |  |
| 13 | 38                             | Corrosion: definition, dry and wet corrosion   |  |  |
|    | 39                             | Factors affecting rate of corrosion, methods of prevention of corrosion—hot dipping  |  |  |
| 14 | 40                             | Prevention of corrosion metal cladding, cementation, quenching, cathodic protection methods  |  |  |
| 14 | 41                             | Introduction and application of nanotechnology: nano-materials   |  |  |
|    | 42                             | Classification, applications of nanotechnology in various  |  |  |
|    | 3 <sup>rd</sup> Sessional test |  |  |  |
| 15 | 43                             | Doubt Quarries and Revision  |  |  |
| 15 | 44                             | Revision and discussion of previous year Q. Papers   |  |  |
|    | 45                             | Revision and discussion of previous year Q. Papers   |  |  |

NAME OF THE FACULTY : Ravinder Kumar (Lecturer)

DISCIPLINE : Civil B, Plastic

SEMESTER : First

SUBJECT : APPLIED CHEMISTRY (Practical)

LESSION PLAN DURATION : 15 WEEKS

WORK LOAD PER WEEK : Practicals =  $\frac{4+2}{4}$ 

|      | Practical |               |    |   |  |  |  |
|------|-----------|---------------|----|---|--|--|--|
| WEEK | LECTUR    | Coverage date |    | Name of Practical   |  |  |  |
|      | E DAY     | G1            | G2 |   |  |  |  |
| 1    | 1         |               |    | To prepare standard solution of oxalic acid   |  |  |  |
| 2    | 2         |               |    | To dilute the given KMnO4 solution  |  |  |  |
| 3    | 3         |               |    | To find out the strength in grams per litre of an unknown solution of sodium hydroxide using astandard (N/10) oxalic acid solution      |  |  |  |
| 4    | 4         |               |    | Checking of Practical Files   |  |  |  |
| 5    | 5         |               |    | To find out the total alkalinity in parts per million (ppm) of<br>a water sample with the help of astandard sulphuric acid<br>solution. |  |  |  |
| 6    | 6         |               |    | To determine the total hardness of given water sample by EDTA method  |  |  |  |
| 7    | 7         |               |    | Checking of Practical Files   |  |  |  |
| 8    | 8         |               |    | To determine the total hardness of given water sample by EDTA method  |  |  |  |
| 9    | 9         |               |    | To determine the amount of total dissolved solids(TDS) in ppm in a given sample of watergravimetrically                                 |  |  |  |
| 10   | 10        |               |    | To determine the pH of different solutions using a digital pH meter   |  |  |  |
| 11   | 11        |               |    | To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter  |  |  |  |
| 12   | 12        |               |    | Checking of Practical Files & Viva  |  |  |  |
| 13   | 13        |               |    | To determine the viscosity of a lubricating oil using a Redwood viscometer  |  |  |  |
| 14   | 14        |               |    | To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab   |  |  |  |
| 15   | 15        |               |    | Checking of Practical Files & Viva  |  |  |  |

NAME OF THE FACULTY :Dr. Sunita Rani (HOD Applied Science)

DISCIPLINE : Civil A SEMESTER : First

SUBJECT : APPLIED CHEMISTRY (Theory)

LESSION PLAN DURATION : 15 WEEKS WORK LOAD PER WEEK : Lectures 3

| ,, 01 |                | K LOAD PER WEEK : Lectures 3  THEORY  |  |  |  |  |
|-------|----------------|---|--|--|--|--|
| WEEK  | LECTURE<br>DAY | TOPIC (WITH ASSIGNMENT & TESTS)   |  |  |  |  |
|       | 1              | Introduction of Atomic Structure, Bohr's model of atom  |  |  |  |  |
| 1     | 2              | Dual character of matter: derivation of de-Broglie's equation<br>Heisenberg's Principle of Uncertainty, modern concept of atomic<br>structure                                 |  |  |  |  |
|       | 3              | Definition of orbitals shapes of s, p and d-orbitals  |  |  |  |  |
|       | 4              | Quantum numbers and their significance  |  |  |  |  |
| 2     | 5              | Aufbau and Pauli's exclusion principles Hund's rule   |  |  |  |  |
|       | 6              | Electronic configuration of elements up to atomic number 30.  |  |  |  |  |
|       | 7              | Periodic Table Modern Periodic law and Periodic table,<br>Classification of elements into s, p  |  |  |  |  |
| 3     | 8              | Classification of elements into d, f-blocks, metals, non-metals and   |  |  |  |  |
|       | 9              | Chemical bonding: cause of bonding, ionic bond Physical   |  |  |  |  |
|       | 10             | Covalent bond, and metallic bond (electronsea or gas model),  |  |  |  |  |
|       | 11             | Doubt Quarries and Revision   |  |  |  |  |
| 4     | 12             | Metals: mechanical properties of metals such as conductivity, elasticity, strength and stiffness, luster, hardness, toughness, ductility, malleability                        |  |  |  |  |
|       | l              | 1 <sup>st</sup> Sessional test  |  |  |  |  |
|       | 13             | Metals: mechanical properties of metals such as, brittleness, and impact resistance and their uses. Definition of a mineral, ore, gangue, flux and slag                       |  |  |  |  |
| 5     | 14             | Metallurgy of iron from haematite using a blast furnace<br>Commercial varieties of iron   |  |  |  |  |
|       | 15             | Alloys: definition, necessity of making alloys, composition, properties and uses of duralumin and steel. Heat treatment of steelnormalizing, annealing, quenching, tempering. |  |  |  |  |
|       | 16             | Doubt Quarries and Revision   |  |  |  |  |
| 6     | 17             | Solutions: definition, expression of the concentration of a solution in percentage (w/w, w/v and v/v), normality, molarity and molality and ppm.                              |  |  |  |  |
|       | 18             | Simple problems on solution preparation   |  |  |  |  |
|       | 19             | Arrhenius concept of acids and bases, strong and weak acids and bases, pH value of a solution and its significance, pH scale  |  |  |  |  |
| 7     | 20             | Simple numerical problems on pH of acids and bases.   |  |  |  |  |
|       | 21             | Hard and soft water, causes of hardness of water, types of hardness – temporary and permanent hardness  |  |  |  |  |
| 8     | 22             | Expression of hardness of water, ppm unit of hardness; disadvantages of hard water; removal of hardness   |  |  |  |  |

|    | 23 | Removal of temporary hardness by boiling and Clark's method; removal of permanent hardness of water by Ion-Exchange method   |
|----|----|--|
|    | 24 | Boiler problems caused by hard water: scale and sludge formation, priming and foaming, caustic embrittlement; water sterilization by chlorine, UV radiation and RO |
|    | 25 | Doubt Quarries and Revision  |
| 9  | 26 | Fuels: definition and classification of higher and lower calorific   |
|    | 27 | Characteristics of an ideal fuel. Petroleum: composition and refining of petroleum   |
|    |    | 2 <sup>nd</sup> Sessional Test   |
|    | 28 | Gaseousfuels: composition, properties and uses of CNG, PNG, LNG, LPG   |
| 10 | 29 | Relative advantages of liquid and gaseous fuels over solid fuels.  Scope of hydrogen as future fuel.   |
|    | 30 | Lubricants- Functions and qualities of a good lubricant, classification of lubricants  |
|    | 31 | Lubrication mechanism (brief idea only   |
| 11 | 32 | Physical properties (brief idea only) of a lubricant: oiliness, viscosity, viscosity index, flash and fire point, ignition temperature, pour point.                |
|    | 33 | Doubt Quarries and Revision  |
| 12 | 34 | Polymers and Plastics: definition of polymer, classification, addition and condensation polymerization   |
| 12 | 35 | Preparation properties and uses of polythene, PVC, Nylon-66  |
|    | 36 | Preparation properties and uses Bakelite; definition of plastic  |
|    | 37 | Thermoplastics and thermosetting polymers; natural rubber and neoprene, other synthetic rubbers (names only).  |
| 13 | 38 | Corrosion: definition, dry and wet corrosion   |
|    | 39 | Factors affecting rate of corrosion, methods of prevention of corrosion—hot dipping  |
|    | 40 | Prevention of corrosion metal cladding, cementation, quenching, cathodic protection methods  |
| 14 | 41 | Introduction and application of nanotechnology: nano-materials   |
|    | 42 | Classification, applications of nanotechnology in various  |
|    | 1  | 3 <sup>rd</sup> Sessional test   |
| 15 | 43 | Doubt Quarries and Revision  |
|    | 44 | Revision and discussion of previous year Q. Papers   |
|    | 45 | Revision and discussion of previous year Q. Papers   |

NAME OF THE FACULTY :Dr. Sunita Rani (HOD Applied Science)

DISCIPLINE : Arch ,Civil A

SEMESTER : First

SUBJECT : APPLIED CHEMISTRY (Practical)

LESSION PLAN DURATION : 15 WEEKS WORK LOAD PER WEEK : Practicals 4+4

| WEEK | Practical       |               |    |  |  |  |  |
|------|-----------------|---------------|----|--|--|--|--|
|      | LECTUR<br>E DAY | Coverage date |    | Name of Practical  |  |  |  |
|      |                 | G1            | G2 |  |  |  |  |
| 1    | 1               |               |    | To prepare standard solution of oxalic acid  |  |  |  |
| 2    | 2               |               |    | To dilute the given KMnO4 solution   |  |  |  |
| 3    | 3               |               |    | To find out the strength in grams per litre of an unknown solution of sodium hydroxide using astandard (N/10) oxalic acid solution |  |  |  |
| 4    | 4               |               |    | Checking of Practical Files  |  |  |  |
| 5    | 5               |               |    | To find out the total alkalinity in parts per million (ppm) of a water sample with the help of astandard sulphuric acid solution.  |  |  |  |
| 6    | 6               |               |    | To determine the total hardness of given water sample by EDTA method   |  |  |  |
| 7    | 7               |               |    | Checking of Practical Files  |  |  |  |
| 8    | 8               |               |    | To determine the total hardness of given water sample by EDTA method   |  |  |  |
| 9    | 9               |               |    | To determine the amount of total dissolved solids(TDS) in ppm in a given sample of watergravimetrically                            |  |  |  |
| 10   | 10              |               |    | To determine the pH of different solutions using a digital pH meter  |  |  |  |
| 11   | 11              |               |    | To determine the calorific value of a solid/liquid fuel using a Bomb calorimeter   |  |  |  |
| 12   | 12              |               |    | Checking of Practical Files & Viva   |  |  |  |
| 13   | 13              |               |    | To determine the viscosity of a lubricating oil using a Redwood viscometer   |  |  |  |
| 14   | 14              |               |    | To prepare a sample of Phenol-formaldehyde resin (Bakelite)/Nylon-66 in the lab  |  |  |  |
| 15   | 15              |               |    | Checking of Practical Files & Viva   |  |  |  |