Common Courses

Master of Technology

(Full Time)

Volume - 5

Academic Year 2020 - 2021

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STAR Board of Management Meeting 30. 06. 20.20



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)

Kattankulathur, Chengalpattu District 603203, Tamil Nadu, India



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

Kattankulathur, Chengalpattu District 603203, Tamil Nadu, India

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| Institutions | | |
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ERRATA

The course titled "20GNS502T Research Methods in Engineering" is amended as "20GNS502J Research Methodology (Science and Technology)" with LTPC of 2 1 2 4

Skill Enhancement Courses (S)

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India

| Course | 20CNCE041 | Course | DESEABCH DITELLISHING AND DESENTING | SKILLE | Course | c | Still Faltanesses | L T | Ь |
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| Code | CINCONIDAZ | Name | RESERVOI PUBLISHING AND PRESENTING SNILLS | DNILLS | Category | 0 | | 1 0 2 2 | 2 |
| | | | | | | | | | |
| Pre-requisite | NEI | | Co-requisite Aiii | P. | Progressiv ALL | | | | |
| Courses | IMI | | Courses | a | Courses 1711 | | | | |
| Course Offeri | ing Department | All Department | hts Data Book / Codes/Standards Nii | tandards Nii | | | | | |

| Course (CLR): | Course Learning Rationale The purpose of learning this course is to: | Learning | | | 4 | Program Learning Outcomes (PLO) | n Le | arnin | 0 g | rtco | mes | PLO | | | |
|------------------|--|----------------------|--------|----------------|---------|---------------------------------|------|---------|----------|----------|----------|--------|---------|--------|---------|
| CLR-1 | Practice different oral presentation material preparations | 1 2 3 | - 2 | က | 4 | 5 | 9 | -1 | 05 | 6 | 10 11 12 | 1 12 | ω (| 4 | 15 |
| CLR-2 | Practice presenting techniques suitable for different audiences | | - | | - | | | | | | - | | | | |
| CLR-3 | Prepare and typeset scientific documents for disseminating research findings | | | | | | | | | | | | | | |
| CLR-4 | Analyze different disseminating techniques available | | | - | | | | | | | | | | | |
| CLR-5 | Utilize different intellectual property sharing mechanisms | cλ (%) | əɓpa | | bu | | | б | | | etence | tname | Money | | |
| CLR-6 | Evaluate amongst different options available to present, publish research findings | inking (toficien | Knowle | Jking Jaing | inosses | Skills | , | easonir | Lyluklug | ed Learn | dmoD l | Bulnos | . Engag | Skills | earning |
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| Dura | Duration | Oral Content Preparation | Presenting Methods | Written Content Preparation | Publishing Methods | Intellectual Property & Plagiarism |
|------------|----------------|---|--|---|--|---|
| <u>S</u> | (nour) | 6 | 6 | 6 | 6 | 6 |
| 2 | SLO-1 | Oral Presentation Structure: SLO-1 Manuscript, Impromptu, Memory, Extempore | Describe Audience; knowledge, Experience, Needs, Goals | Writing Preface, Prelude, Prologue, foreword, Introduction, Abstract, | Typesetting: LaTex, Word, XML etc., | Public License, Creative Commons, Share-alike, Reciprocal License, |
| ā | SLO-2 | context, need, agenda ,task, SLO-2 and object of the presentation document | Plan, Prepare, Practice, Present Creating a Positive First Impression, | Writing Dedication, Acknowledgement, Forward, Background | Indexing: ISI, SCI, SCIE, SCOPUS, SCIMAGO, ESCI, WoS, Public Domain | Copyleff, Patentleft, Open patent, Public Domain |
| s.3 | SLO-1 SLO-2 | SLO-1 Practice-1: Create Structure of Audience Audience | | Practice-7: Writing Preface, Prelude, Prologue, foreword, Introduction, Abstract | Practice-12: LaTex Editor, Word Editor | Practice-13: GNU-GPL, Public License Creative Commons License, Unlicense |
| 8.4 | SL0-1 | Gather data, evidence to present, visual-auditory balance, engagement techniques | Increasing Credibility, Presenting Literature Review: Narrative Complex Material, Communicating Systematic, Argumentative, with Impact | Literature Review: Narrative, Systematic, Argumentative, Integrative, Theoretical | Disseminating Research Findings: Intellectual Property Rights, Public Domain, Open Information, Copyrights, Patents, Trade Wikipedia | Intellectual Property Rights, Copyrights, Patents, Trademarks, and Trade secrets |
| | SLO-2 | SLO-2 Introduction, body, closure, question-answer | Motivating Others, Responding to Pressure Situations, Inspiring People | Writing Problem Statement, Limitations, Method Adapted, Tools & Technology used | Media, Press Release, Flyers, Brochure, Research Summary, Posters, Websites | Industrial design rights, Plant variety rights, trade dress, geographical indications |
| s-6 5-6 | SLO-1 SLO-2 | SLO-1 <i>Practice-2</i> : Create a structured SLO-2 oral presentation module | Practice-5: Communicating with Greater Impact, Rehersals and Retrials | Practice-8: Writing Literature Review | Practice-11: Study of Various Open Publishing Methods | Practice-14: IPR Law, Private Domain |
| | SL0-1 | Tools: Presentation Slides, SLO-1 Whiteboard Animators, Immersive Technologies | Delivery Styles: Visual, Freeform, Lessig Instructor, Coach, Storytelling, Connector | Main Body: Analysis, Design, Development Steps, Implementation Steps, Evaluations | Patents, Journals, Conferences, Reports, RFCs etc., | Infringements: Copylefts, Copyrights, Patentlefts, Patentrights, |
| 'n | SLO-2 | Handouts, Visual Aids, Demonstrative Aids, Thought Provoking Questions | Persuasive, Inferactive, Decision Making, Educational, Takahasi Arousing | Referencing: Documentary, Parenthetical, Numbered, Vancouver, IEEE, Harvard etc., | Journal Index, Impact Factor, Quality Standards | Plagiarism: Paraphrasing, Verbatim, Mosaic, Global, Self, Accidental etc., |
| o 6.8 | SLO-1 SLO-2 | SLO-1 Practice-3: Demonstrating a multi technology oral presentation | Practice-6: Presenting same content using different delivery styles | Practice-9: Writing Main Body | Practice-12:Study of h-index, i10-index, g-index, r-index | Practice-15. Plagiarism checking and correcting techniques |

| nce, Improve Public Speaking", Amazing king", Amazing Reads, 2018 Writing: How to Write Effective Titles and | rse, 201 |
|---|---|
| Learning 2. Dale Carnegie, "Develop Self-Confidence, Impro Reads, 2018 2. Dale Carnegie, "The Art of Public Speaking", An (seources) 3. Joseph Murah "Essentials of Scientific Writing". | Abstracts for Research Papers and Proposals", Authorhouse, 2016 |

| Bloom's Level 1 Continuous Learning Assessment (60% weightage) CLA - 2 (25%) CLA - 3 (15%) Final Examination (40% weightage) Level 1 Theory Practice Theory Practice | | | | | Learning A | Learning Assessment | | | | |
|--|-------|--------------------|-------|----------|----------------------|----------------------|--------|----------|------------|--------------|
| Level of Thinking Theory Practice Theory Theory Practice Theory Theory Practice Theory | | واستمال | | Cont | inuous Learning Asse | essment (60% weights | ige) | | Final Exam | ination (40% |
| Level of fillibiting Theory Practice Theory Practice Theory Practice Theory Remember 20% 20% 15% 15% 15% 15% 15% Apply 20% 20% 20% 20% 20% 20% Analyze 10% 15% 15% 15% 15% Create 10% 100% 100% 100% | | DIOUIII S | | | CLA- | 2 (25%) | | 3# (15%) | weigl | htage) |
| Remember 20% 15 | | Level of Hilliking | Theor | Practice | Theory | Practice | Theory | Practice | Theory | Practice |
| Understand 20% | 1 100 | Remember | /000 | 7000 | 150/ | 450/ | 450/ | 150/ | /63/ | 450/ |
| Apply Apply Evaluate Evaluate Total 20% | - E | Understand | 2070 | 0/.07 | 1070 | 1070 | 1070 | 1370 | 0.50 | 8/07 |
| Analyze 20% | 6 | Apply | 7000 | 2000 | 7000 | 7000 | 7000 | 2000 | 7600 | /000 |
| Evaluate 10% 10% 15% 15% 15% 15% 15% 15% Total 100 % | 7 12 | Analyze | 20.70 | 0//07 | 0/07 | 0/07 | 20.70 | 0//07 | 05.77 | W 0.7 |
| Create 10% 10% 100% 100% 100% 100% | 6 | Evaluate | 400/ | 400/ | 150/ | 450/ | 450/ | 150/ | 169/ | 450/ |
| 100 % 100 % | C C | Create | 10% | 1070 | 1070 | 0/07 | 0.70 | 10% | 1020 | 80 |
| | | Total | 10 | % 0 | 100 | % C | 10(| %0 | 10 | %0 |

CLA – 3 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

| | conise Designers | |
|---|--|--------------------------------|
| Experts from Industry | Experts from Higher Technical Institutions | In:ernal Experts |
| 1. Dr. Sainarayanan Gopalakrishnan, HCL Technologies, sai.jgk@gmail.com venkatadhikari@iisc.ac.in | nt Adhikari, Technology Licensing Manager, IISC, hikari@iisc.ac.in | 1. Dr. Rajeer Sukumaran SRMIST |
| 2. Dr. Sricharan Srinivasan, Wipro Technologies, sricharanms@gmail.com ipmarket | Mr. Ateet Palmurkar, Senior Manager IP Licensing, IITM, ipmarketing@iltm.ac.in | 2. Dr. V. Nithyananthan SRMIST |

| ě | 1001011000 | Course | WOO JONITOTE Land Touristic Noo logo. If the Logaristic | Course | c | CL: II Enhangement | _ | _ | _ |
|-----|------------|--------|---|----------|---|--------------------|---|---|---|
| | CZOCKNOOZ | | RESEARCH METHODOLOGI (SCIENCE and LECTINOLOGI) | Cotton | 0 | | · | 7 | c |
| ode | | Name | | Category | | | 7 | - | 7 |

| Co-requisite Courses | urses Nii Courses Nii |
|----------------------|-----------------------|
| Dat | Book/ |

| Course | Course Learning Rationale (CLR): The purpose of learning this course is to: | Lea | rning | | | | | Pro | gram | Learn | o gui | utcoi | nes (| PLO) | | | | |
|--------|---|------|----------------|---|------|---------------|---------------|------|------|-------|-------|-------|-------|------|-----|-------|-------|---------------|
| CLR-1: | CLR-1: Get overall picture of research methodology | 1 | 2 3 | | 1 | 2 3 | 8 | 5 | 9 | 7 | 8 | 6 | 10 | 11 | 12 | 13 | 14 | 15 |
| CLR-2: | CLR-2: Search and find research resources and to review it | _ | _ | | | | _ | | | | _ | | _ | | | | | |
| CLR-3: | CLR-3: Get expertise in academic writing and presentation skills | _ | _ | | | | _ | | _ | | | - | əo | | ţu | | | |
| CLR-4: | CLR-4: Learn the importance of modern statistical tools for research | | - | | əßp | | DL | 6. | | b | - | - | _ | | әше | | | |
| C. B.5 | Learn optimization tools, modelling tools and case studies in the domain | 6ui> | eioite mnis | | owle | | linos | | _ | nino | ıking | earr | ошь | | 696 | | SIIi | <u> B</u> uju |
| OFIL O | of study | _ | | Ī | _ | _ | _ | - | _ | + | - | | _ | | - | | SK | esı |
| | | _ | _ | | _ | iidT 20 cm | 22 m 3 ls2 | Ch S | Work | | - | | _ | S9A | _ | SIII. | dide: | ր ճս |

Life Long Learning

| Course L | Course Learning Outcomes (CLO): | At the end of this course, learners will be able to: | гелеј о | Expecte | Expecte | nilqiosiQ | Critical 7 | Problem | Analytic | Researc | V твэТ | Ritneis Titneis | Reflecting | Self-Dire | Multicul | Ethical I UmmoD | ICT SKI | Leaders |
|----------|---|--|---------|---------|---------|-----------|------------|---------|----------|---------|--------|--------------------|------------|-----------|----------|--------------------|---------|---------|
| : t-070 | Demonstrate ability to identify research topic and using the scientific methods of enquiry. | ntify research topic and draft research proposal Is of enquiry. | + | | 20 | H | - | | I | , | • | | | | | | | 100 |
| CLO-2: | Carry out literature survey / review in library resources and modern tools. | Carry out literature survey / review in research domains using online, library resources and modern tools. | - | 80 | 02 | | 9. | . A | H | Ι | N | , | , | 31. | î | , | 1 | ж, |
| C70-3: | Write project proposals, re and moral responsibilities. | Write project proposals, research reports and publish the work with ethical and moral responsibilities. | 1 | 08 | 20 | 2. | 3. | 31 | H | | , | I | , | - 31 | | | H | 9 |
| CL0-4: | Apply statistical principles prediction. | Apply statistical principles in data collection, analysis, inference and prediction. | 2 | 98 | 20 | ľ | H | I | Н | 100 | 100 | | | 300 | (8) | 6 | 30) | (00) |
| CTO-5: | CLO-5: Apply basic principles and modern tools to model ε engineering systems | I modern tools to model and simulate | 2 | 80 | 70 | | S | I | I | | | ì | * | Z | | V | M | 1. |

| ă | Duration | Research Preparation and | Research Resources | Academic Writing & | Data Collection, Analysis and Modelling and Case Studies | Modelling and Case Studies |
|----------|----------|---------------------------|---------------------------------|---|---|----------------------------|
| | (hour) | Planning (9+2 Tutorial) | (9+2 tutorial) | Presentation (6+5 Tutorial) | Inference (12) | 12(practice) |
| | | | | Preparation of project proposal for | reparation of project proposal for Basic probability distributions - Optimization studies and | Optimization studies and |
| | | Introduction to research | Sources of information – types, | funding – Identification of funding types – applications in | types – applications in | modern |
| ر- ام | SL0-1 | SLO-1 methodology, Need | ICT enabled tools | agencies - format - elements of | Engineering – statistics – types | |
| | | | | Style | | |

| | SLO-2 | Research – objectives, definitions – Databases, knowledge economy | Databases, repositories, public and private sources, indexes | Organization of proposals – current Normal distribution – exercises – tools usage in the field of status in national & global scenario problem solving using software study – tools | Normal distribution – exercises – problem solving using software tools | tools usage in the field of study – case studies, use cases, |
|--------|-------|---|--|---|---|---|
| S-2 | SLO-1 | Perspectives of stakeholders | Literature search – Keyword, backward and forward search | Research report writing: Identification of line of argument – article type | Binominal and Poisson distributions – exercises using software | exercises |
| | SLO-2 | Types of research - examples | Area of research – background knowledge – new approach | Communication model – audience analysis – tailoring for audience | Weibull and exponential distributions | |
| S-3 | SLO-1 | Understanding research goals – examples | Quality measurement tools: Identification of suitable journal – citation index, impact factor, h-index, format – instructions to authors – g-index, 110 index, JCR | Identification of suitable journal – format – instructions to authors – structure – major headings | Sampling: types – size of sample – sample designs | |
| | SLO-2 | Critical thinking Vs Creative thinking | | Writing discussion & conclusions | | |
| 2 | SLO-1 | Templates for design problem definition | Reading research article – meta analysis | Conference presentation types: Oral, poster – difference in audience interaction | Sampling tests: Student t-test – applications in engineering / research – exercises using | Mcdelling and Simulation in the field of study – case studies, use cases, |
| 5 | SLO-2 | Research proposal – rational techniques to find research ideas | Literature review: Grouping, analyzing & comparison of articles | Synopsis – Thesis - extended abstract – graphical and video abstract - short communications | | exercises (to Improve analyzing and evaluating skills of schclars) |
| 0 | SLO-1 | Techniques for generating research Reporting Ill topic – attributes, justification | Reporting literature review | Contributions of the work – Novelty F-test and its application in research studies – exercise using software | F-test and its application in research studies – exercises using software | |
| c h | SLO-2 | Identifying broad research question Literature gap, refining and objectives. objectives – case studi | Literature gap, refining research question and objectives – case studies | Referencing – style – tools for referencing, Appendix – Manual for research studies – exercises preparation of Synopsis using software | X2 test and its application in research studies – exercises using software | |
| 9-8 | SLO-1 | Methods of scientific enquiry – Theoretical, Experimental and Emperical - Examples | Identification of research methods – Experiments – results – Examples | Thesis Writing: Structure – Preliminary pages, Main body, References – contents - Manual | Correlation and regression Analysis- Time series analysis | |
| | SLO-2 | | | Evaluation of Thesis – examiner reports – example - Oral defense | Forecasting methods | |
| | SLO-1 | Innovation, Tools for scientific enquiry - Questionnaire | Intellectual Property Rights – Motivation – WIPO and WTO – IPR laws – TRIPS | Tutorial on writing an abstract from Factor analysis, Cluster Analysis a manuscript | Factor analysis, Cluster Analysis and Discriminant Analysis | 1. Recent inventions and innovations in the field of study – |
| S-7 | SLO-2 | Techniques in designing questionnaire – case studies | Copyright – patent – invention – trademark – trade secret – Geographical indication – industrial designs – Technology transfer | | | Case studies. 2. Adoction of Artificial |

| 6 | SLO-1 | Hypothesis - Formulation | Patenting procedures; Patent search – case studies | Tutorial on writing materials and methods and methodology / | Design of experiments - basic experimental designs: | Intelligence and Machine Learning tools in the field of |
|------|------------|---|---|--|---|--|
| 'n | SLO-2 | Hypothesis testing – examples / case studies | | experiments | Completely Randomized Design study – case studies. | study – case studies. |
| | SL0-1 | Procedural guidelines in research | Exercise on literature review | Tutorial on presenting | Randomized Block Design, Latin | |
| S-9 | SLO-2 | process – example / use case | | experimental results using charts and graphs | Square Design - Exercises | |
| | SLO-1 | SLO-1 Tutorial on questionnaire | Tutorial on reading a research | Tutorial on writing discussion | Full factorial design - 2, 23 and Analysis of thesis from library | Analysis of thesis from library |
| S-10 | SLO-2 | preparation | article | section from experimental results 24 only - exercises and literature review. | 24 only - exercises | / UGC/ other University web portals, etc |
| | SLO-1 | SLO-1 Tutorial on hypothesis formulation Tutorial on writing literature | Tutorial on writing literature | Tutorial on thesis preparation | Fractional factorial designs - | |
| S-11 | 1 SLO-2 | and testing | review report from literature search | | exercises | |
| 5 | SL0-1 | | | | Accuracy, Precision and error | |
| 21-0 | 3-14 SLO-2 | | | | analysis | |

11. Kornuta, H.M., and Germaine, R.W., (2006), A concise guide to writing a Thesis or 14. Theil, D.V., (2014), Research Methods for Engineers, Cambridge University Press, 10. Gastel, B., and Day, R.A., (2016), How to Write and Publish a Scientific paper, 8th 12. Greenfield, T., and Greener, S., John Wiley & Son (2016), Research Methods for 13. Turabian, T.L., (2007), A Manual for Writers of Research Papers, Thesis and Dissertation, 7th Edition, The University of Chicago Press, Chicago, USA 9. Adams, K.A., and Lawrence, E.K., (2019), Research Methods, Statistics and 15. Web resources: Suitable web resources shall be referred by learners. applications, Sage Publication, Thousand ORKS, California, USA Dissertation, 2nd Edition, Taylor & Francis Group, New York Post Graduates, West Sussex, United Kingdom. Edition, Greenwood, California Cambridge, UK. Dawson, C., (2002), Practical Research Methods, How to Books, Oxford OX4.1E, 3. Locharoenrat, K., (2017), Research Methodology for beginners, CRC Press, Taylor 6. Ganesan R, Research Methodology for Engineers, MJP Publishers, Chennai. 2011 7. Walpole R.A., Myers R.H., Myers S.L. and Ye, King. Probability & Statistics for Research Problems, Tasks and Methods, CRC Press, Taylor & Francis Group, New 4. Alvi, M.H., (2016), A Manual for Referencing styles in Research, University of 2. Bairagi, V., and Munot. M.V., (2019), Research Methodology: A practical and Engineers and Scientists, Pearson Prentice Hall, Pearson Education, Inc. 2007. 1. Mukerjee, S.P., (2020), A Guide to Research Methodology: An Overview of 5. IEEE Reference Guide (2018), IEEE Periodicals, Transactions / Journal scientific approach, CRC Press, Taylor & Francis Group, New York. Department, Piscataway, New Jersey, USA & Francis Group, New York Karachi, Karachi, Pakistan. United Kingdom. Resources Learning

| | | | | Learning A | Learning Assessment | | | | |
|--------|--------------------|---------------|----------|----------------------|----------------------|-------|----------------|-------------|------------------------|
| | ما میں م | | Cont | inuous Learning Asse | essment (60% weights | ide) | | Final Exam | Final Examination (40% |
| | DIOOM S | CLA - 1 (15%) | | CLA- | CLA – 2 (20%) | | CLA - 3 #(25%) | weigh | weightage) |
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| C love | Apply | 70 07 | | 70 07 | | | 80% | 73 07 | |
| 7 124 | Analyze | R/ 0+ | | 9/ 04 | | | 9,00 | P. O+ | |
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| | Total | 100 | 100 % | 100 | 100 % | 100 | 100% | 101 | 100 % |

CLA - 3 shall be from Modelling and case studies unit.

| Course Designers | | |
|--|---|---|
| Experts from Industry | Experts from Higher Technical Institutions | Internal Exp∋rts |
| 1. Mr. Anuj Kumar, Bombardier Transportation, Ahmedabad, | 1. Dr. Meenakshi, Professor of ECE, CEG, Anna University, | 1. Prof. A. Subbarayan., |
| kumaranuj.anii@gmail.com | meena68@annauniv.edu | SRMIST |
| 2. Mr. Hariharasudhan - Johnson Controls, Pune, hariharasudhan.v@jci.com | 2. Dr. Venkatesan, Sr. Scientist, NIOT, Chennai, venkat@niot.res.in | 2. Prof. D. Kingsly Jeba Singh, SRMIST |

Project Work, Internship In
Industry / Higher Technical Institutions(P)

Master of Technology
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India

_ 0 0 0 Project Work, Internship In Industry / Higher Technical Institutions ۵. Course Category INTERNSHIP Course Name 20AUP601L / 20BMP601L / 20BTP601L / 20CHP601L / 20CEP601L / 20CSP601L / 20EPF601L / 20EPF601L / 20ITP601L / 20MEP601L/ 20MHP601L / 20NTP601L Course Code

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| Program Learning Outcomes (PLO) | 7 | 6 | ujuose | Scientific Re | | | H | I | Σ |
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| Le | - | (mools | a) Bujyı | Level of Thir | | | - | 7 | က |
| Course Learning Rationale The purpose of learning this course is to: | Provide an exposure to an industrial environment or research laboratory / institution | CLR-2: Acquire practical knowledge of theoretical concepts | Understand the organization structure, functions and protocols | | Course Learning Outcomes At the end of this course, | learners will be able to: | CLO-1: Appreciate the functioning of an organization | CLO-2: Apply the theoretical concepts to solve engineering problems | CLO-3: Take up different roles in a career with confidence |
| Course (CLR): | CLR-1: | CLR-2: | CLR-3: | | Course | (CLO): | CL0-1: | CL0-2: | CL0-3: |

It is mandatory for every student to undergo this course.

Every student is expected to spend a minimum of 4 to 6 weeks in an Industry/ Company/ Organization, during the summer vacation between II and III semester

The type of industry must be NOT below the Medium Scale category in his / her domain of the degree programme.

The student must submit the "Training Completion Certificate" issued by the industry / company / Organisation as well as a technical report not exceeding 15 pages, within the stipulated time to be eligible for making a presentation before the committee constituted by the department.

The committee will then assess the student based on the report submitted and the presentation made.

Marks will be awarded out of maximum 100.

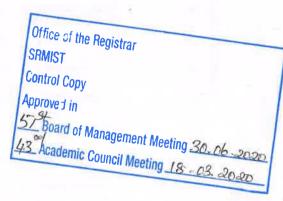
Appropriate grades will be assigned as per the regulations.

Only if a student gets a minimum of pass grade, appropriate credit will be transferred towards the degree requirements, as per the regulations.

It is solely the responsibility of the individual student to fulfill the above conditions to earn the credits.

The attendance for this course, for the purpose of awarding attendance grade, will be considered 100%, if the credits are transferred, after satisfying the above (1) to (8) norms; else if the credits are not transferred or transferable, the attendance will be considered as ZERO. The committee must recommend redoing the course, if it collectively concludes, based on the assessment made from the report and presentations submitted by the student, that either the level of training received or the skill and / or knowledge gained is NOT satisfactory.

| Assessment for Semester Internship | ster Internship | | |
|------------------------------------|---|-----------|--|
| | Final Evaluation (100% weightage). | | |
| | Report along with completion certificate from company | Viva-Voce | |
| Semester Internship 50 % | 50% | 20 % | |



| 20AUP602L / 20BMP602L / 20BTP602L / 20CHP602L / 20CEP602L / 20CEP602L / 20EP602L / 20EP602L / 20EP602L / 20EP602L / 20MHP602L |
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| Pre-requisite | Co-requisite | isite | AIT | | | | | Progressive | ssive | | | | | | | | | |
|---|--|-------------|------------|-----------|--------------------------------|--------------|---------|-------------|--------|---------------------------------|----------|----------|-------------|-----------|---------|---------|---------|---------|
| Courses | Courses | es | 2 | | | | | Courses | ses | | | | | | | | | |
| Course Offering Department | All Departments | | | Code | Data Book / Codes/Standards | ok/ dards | | III | | | | | | | | | | |
| arning Rationale | Course Learning Rationale The purpose of learning this course is to: | .s | Learning | ing | | | | | Pro | Program Learning Outcomes (PLO) | earni | υο gr | соте | (PLo | _ | | | |
| conceptualize a no | CLR-1: Conceptualize a novel idea / technique | _ | 2 | က | - | 2 | က | 4 | 2 | 9 | 7 | ∞ | တ | 10 | = | 12 | 13 1 | 14 15 |
| Think in terms of so applications | Think in terms of social or commercial applications | | | | | | | | | | | | | | | | | |
| CLR-3: Understand the manage implementing a project | Understand the management techniques of implementing a project | (шо | | | əí | | Mestro | A front | | | | | | aou | | tnə | | |
| Prepare a technical professional manne | CLR-4: Prepare a technical report and present in a professional manner | inking (Blo | Yoficiency | trainment | , Knowledg | бијуг | guivio | yeasoning) | kills | ? | Bujuosea | рілкіпд | ad Learning | eteqmoO I | | Engagem | -111-10 | SKIIIS |
| | | 41 J | _ | | (Jeu | ЛЧТ | ວຽ ແ | 1 lec | ср 2 | Vork | A oï | Гэи | _ | _ | -41 | | - | - |
| arning Outcomes | Course Learning Outcomes At the end of this course, (CLO): | Level o | | _ | Discipli | Critical | Probler | oliylisnA | Лезеал | У твэТ | Scientif | Reflecti | | 70. Al | Ethical | | ICT SKI | crobac. |
| dentify and solve saroblems | CLO-1: Identify and solve simple engineering / biologica problems | 1 1 | 20 | | I | Н | Н | I | N | H | H | I | | | | | | - |
| ssess the feasibili | CLO-2: Assess the feasibility of project commercialization | 2 10 | 80 | 7.5 | H | H | H | I | Ξ | I | エ | Ξ | I | Z | I | Z | I | H |
| lanage the implem | CLO-3: Manage the implementation of a project | က | 99 | 09 | Н | N | 7 | 7 | N | N | N | N | 7 | 7 | 7 | 7 | 1 7 | M M |
| CLO-4: Document a project report | report | 3 | 75 | 70 | H | I | H | H | 7 | Z | H | Σ | I | Z | N | Z | I | MH |

An in-house project to be taken up by the individual student and complete the minor project before the end of III semester

The project can be a development of an experimental kit/ method, an innovative concept or idea or methodology or algorithm / technique, a 3D model, simulation, prototyce product, blueprint for a larger project or any other similar developmental work that the respective department approved by the department, are permitted.

The student must be attached to a faculty supervisor / mentor

A comprehensive report is to be submitted.

A presentation is to be made on the work done by the student to committee of reviewers

Learning Assessment weightage

| | Continuous Learning Assessment (70% weightage) | ing Assessment ghtage) | Final Final 130% v | Final Evaluation |
|---------------|--|---------------------------|--------------------|------------------|
| | Review I | Review II | Report | Viva-Voce |
| Minor Project | 20 % | 20 % | 15 % | 15 % |

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| Project Work, Internship In | Industry / Higher Technical | Institutions |
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| 00000 | Cotogory | category |
| DDO IECT MODIV | DHACE Course | ויייןטעווי |
| 3 | Namo | Maille |
| 20AUP603L / 20BMP603L / 20BTP603L / 20CHP603L / 20CEP603L | Course / 20CSP603L / 20ECP603L / 20EEP603L / 20EIP603L / 20FPP603L / Name | Code 20GEP603L / 20ITP603L / 20MEP603L / 20MHP603L / 20NTP603L |
| | nrse / | age |

| Course / 20AU Code 20GI | P603L / 20 SP603L / 20 EP603L / 20 | BMP603L / 20BTP6 IECP603L / 20EEP0 ITP603L / 20MEP6 | Course / 20CSP603L / 20BMP603L / 20ETP603L / 20EHP603L / 20CSP603L / 20ECP603L / 20EEP603L / 20EEP603L / 20EEP603L / 20MHP603L / 20MHP603L / 20NHP603L | 20CEP603L Co :0FPP603L / N: :0NTP603L | ame | PROJECT WORK Course PHASE - I Category | Course | <u>a</u> | Project Work, Internship In L T P C Industry / Higher Technical 0 0 12 6 Institutions | 0 | F 6 | ပေဖ |
|-------------------------------|--|---|--|---|-------------------|--|--------|----------|---|---|-----|-----|
| Pre-requisite | III | | Courses Nill | | | Progressive Courses | | | | | | |
| Course Offering Department | ffering | All Departments | | Data Book / | 3ook / andards | Nii | | | | | | |

| Course | Course Learning The purpose of learning this course is Rationale (CLR): to: | L L | Learning | - | | | | | Prog | Program Learning Outcomes (PLO) | arning | Outco | mes (F | (0) | | | | |
|----------|--|-----------|----------|---------|----------|----------|---------|----------|--------|---------------------------------|-------------------|---------|--------|---------|---------|--------|--------|------------------|
| CLR-1: | Provide students with the opportunity to explore a CLR-1: problem or issue of particular personal or professional interest | - | 2 | ო | - | 2 | က | 4 | D. | 2 9 | - 80 | 6 | 10 | Ξ | 12 | 5 | 4 | 15 |
| CLR-2: | | (шос | (%) | (%) | ə6 | | | 1 | | | | Di | | | tnen | | - 50 | |
| CLR-3: | | ola) gnix | ficiency | tnəmnis | pəlwou | биј | | Sujuose | SII | bajaosa | soning | Learnir | teqmoC | | ingager | | Kills | puime |
| | | InidT 1 | oı9 be | stiA be | nary K | iłnidT | | sal Re | | | | | - | | ∃ (tinu | slli | S qida | eə Tou |
| Course | Course Learning At the end of this course, learners will Outcomes (CLO); be able to: | р [әле] | Expect | Expecte | ilqiseiQ | Critical | Probler | olytisnA | Resear | / mseT | nneloc Reflect | | | Ethical | пттоЭ | ICT SK | Leader | io <u>l</u> əfil |
| | Understand problem pertaining to various social | | | 1 | : | : | : | | | - |): | | - | | : | | : | |
| CL0-1: | CLO-1: relevant issues based on individual or Community | - | 82 | 92 | I | H | I | I | I | | • | I | Ι. | ï | I | × | Ξ | I |
| | base | | | | | | | | | | | | | | | | | |
| . 6-0-12 | Apply their expertise to provide a suitable long- | 2 | 85 | 0.5 | I | I | I | I | I | 3) | | I | I | - 34 | I | 9 | Ξ | I |
| . 4.O.1 | term solution to research problems | 1 | 3 | 3 | = | : | : | : | : | - | - | | - | | : | | : | |
| 2 | Compile the output in a scientific way and present | c | D. | 0.5 | ב | Ξ | 7 | 7 | 7 | | | | 7 | | I | , | 1 | I |
| CLO-3 | it to scientific community | 2 | 3 | 3 | : | = | : | = | : | | | - | - | | = | | 3 | = |

The project work (Phase – I) is the preparatory phase for the major project to be taken up during the final semester of the programme. Each student is expected to identify an engineering problem in his / her specialization of study.

Each student must study in-depth the issues / causes & effects underlying the problem and define the objective of the subsequent work.

A faculty supervisor / mentor will be assigned to each project.

A report of the work done during Phase – I must be submitted at the end of the semester, for evaluation. Assessment will be made as per the table below:

| rment Final Evaluation (30% weightage) | Review – 3 Project Report | 30 % |
|---|---------------------------|--------------|
| Confinuous Learning Assessment (70% weightage) | Review - 2 | 25 % |
| 0 | Review - 1 | 15% |
| | | Project Work |

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| | Course | category |
| | PROJECT WORK | |
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| | Course | 2000 |

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| Course L (CLR): | Course Learning Rationale The purpose o (CLR): | The purpose of learning this course is to: | Lea | Learning | | | | Ā | ogra | E L | arni | ng (| nţcc | Program Learning Outcomes (PLO) | (PL | 6 | | |
|--------------------|---|--|----------|--------------------|-------|-----------|------------|---------|----------------------|--------|-----------|-----------|----------|---------------------------------|-----------|---------------------|---------|-----------|
| CLR-1: | Provide students with the opportunity t personal or professional interest | to explore a problem or issue of particular | 1 | 3 | | _ | 2 3 | 4 | 2 | 9 | 1- | ∞ | 6 | 10 11 12 13 14 | 1, | 73 | 14 | 15 |
| CLR-2: | Address the problem or issue through | focused study and applied research | | | | | | | | | | | | | | | | |
| CLR-3: | Demonstrate the student's ability to sy acquired in his/her academic program | Demonstrate the student's ability to synthesize and apply the knowledge and skills acquired in his/her academic program to real-world issues and problems | | | (2.1) | əf | | | | _ | | | 6 | uce | ţuo | פווו | | |
| CLR-4: | Affirm students' ability to think critically make reasoned and ethical decisions, | y and creatively, to solve practical problems, to and to communicate effectively | | | | owledg | | | | | Bujuo | | ดยเมเมริ | | | uiaga Baga | SII | |
| CLR-5: | Prepare a technical report and presen | ıt in a professional manner | | | | sıy Kr | | | | | | | peto: | | | | _ | |
| Course L (CLO): | Course Learning Outcomes At the end of the (CLO): | his course, learners will be able to: | Level of | Expecte Expecte | | Disciplin | Critical 1 | Problem | Analytic: Researc | W mseT | Scientiff | vitoelteA | əniG-NəS | Multicult | Ethical F | Commur ICT SKIII | Leaders | rife Long |
| CL0-1: | CLO-1: Understand problem pertaining to vari | Understand problem pertaining to various social relevant issues based on individual or Community base | 1 | 85 90 | | H | | | | | _ | | T | | I | | I | |
| CL0-2: | pply their expertise to provide a suite | CLO-2: Apply their expertise to provide a suitable long-term solution to research problems | 2 | 85 90 | | I | Ξ | H | H | H | I | Z | I | I | H | I | I | H |
| CL0-3: | npart his/her specialization knowledg | CLO-3: Impart his/her specialization knowledge in addressing issues pertaining to the society | က | 85 90 | | I | I | H | H | エ | I | Z | I | I | I | N. | H | I |
| CL0-4: | Recommend with suitable justification, regulations | , by comparing with various standards and | m | 85 90 | _ | H | H | I | H | I | Ħ | Z | I | I | H | W. | H | Ξ |
| CLO-5: | compile the output in a scientific way | CLO-5: Compile the output in a scientific way and present it to scientific community | က | 85 90 | | I | Ή | H | H | エエ | I | Z | I | I | H | N. | H | I |

The project shall be driven by realistic constraints like that related to economic, environmental, social, political, ethical, health & safety, manufacturability and sustainability. The project work Phase - Il is to extend their academic experience into areas of personal interest, working with new ideas, issues, organizations, and individuals. A report of the work done during Phase - II must be submitted at the end of the semester, for evaluation.

Assessment will be made as per the table below:

| | | Continuous Learning Assessment (70% weightage) | ssessment e) | Fir (30 | Final Evaluation (30% weightage) |
|---------------------------|------------|--|-----------------|----------------|----------------------------------|
| | Review - 1 | Review - 2 | Review - 3 | Project Report | Viva-Voce |
| Project Work (Phase I) | 15 % | 25 % | 30 % | 15 % | 15 % |

AUDIT COURSES (A)
For All Specializations

Master of Technology
(Full Time)

Academic Year 2020 - 2021



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956) Kattankulathur, Chengalpattu District 603203, Tamil Nadu,

India

| | 20CEA531J | Course | DISASTEI | DISASTER MANAGEMENT | Course Category | 4 | Audit | 1 L 0 - 1 |
|-------------------------------|-------------------|--------|-------------------------|---------------------------------|---------------------|-----|-------|-----------|
| isite | Nii | | Co-requisite Courses | Nii | Progressive Courses | Nil | | |
| Course Offering Department | Civil Engineering | | | Data Book / Codes/Standards Nii | Nil | | | |

| Course L (CLR): | Course Learning Rationale (CLR): | The purpose of learning this course is to: | Learning | guir | | | | Progr | am Le | Program Learning Outcomes (PLO) | Outcom | es (PLC | 6 | | | |
|--------------------|---|---|----------|---------|--------|---------|--------|---------|--------|---------------------------------|--------|--------------------|-------|---------|----------|----------|
| CLR-1: | Introduce various ty management | ntroduce various types of disasters and role of various stakeholders in disaster nanagement | 1 2 | m | - | 2 | က | 4 | 5 | 9 | -1 | 8 | 10 | 1 | 1 12 | |
| CLR-2: | Understand various | Understand various phases of disaster management and risk reduction measures | _ | | | | | цο | | | lity | I. | | | | |
| CLR-3: | Acquire knowledge | Acquire knowledge on hazard management systems | | - | əf | | Įι | 169 | | | ider | 114 | XII. | | _ | |
| CLR-4: | Manage the pre and | Manage the pre and post disaster scenario | - | - | pəl | | nem | Кеѕ | əi | | nista | 0/// | 014 | Jue | _ | |
| CLR-5: | Understand the role | Understand the role of disaster management and development | - | | MOL | sis | doje | ʻuf | ses | H | ene | | | - | _ | Rum |
| CLR-6: | Understand various | Understand various disaster management acts | | - | 9 Kı | usly | 949(| jisə(| U lo | - | .g tu | OT 1 | - | | - | uno |
| | | | - | _ | n'ne | ıA n | 3 % |] 's | οT | H | əш | , la | | | _ | - 6 |
| Course Lo | Course Learning Outcomes (CLO): | At the end of this course, learners will be able to: | Level o | Expecte | engine | Problen | ngisəQ | isylsnA | Modern | Society | noivn∃ | Ethics Individu | Commu | 109jord | Life Lon | 107 0117 |
| CL0-1: | Understand the role | Understand the role of various stakeholders in risk reduction measures | _ | _ | Z | Z | r | ı | | | | | | | | |
| CL0-2: | Develop management measures by recovery and mitigation techniques | onsidering preparedness, response and | 2 85 | 5 75 | M | M | i) | | Z | ŧ | 6 | | 8 | S | | 20 |
| CL0-3: | Evaluate the key co | Evaluate the key concepts of hazard management systems | 3 80 |) 75 | Z | Ø | ā | ij | Z | i, | 1 | | - | • | 7 | |
| CL0-4: | Distinguish various | Distinguish various approaches of pre and post disaster scenarios | 2 85 | 5 75 | Z | N | í | , | | N | ₹ | | 8 | Z | - | 97 |
| CL0-5: | Integrate the manag | Integrate the management principles in disaster management | 3 85 | 5 80 | Z | t | | ٠ | | i | ì | | | • | • | l. |
| : 9-OTO | Apply various rules | Apply various rules and regulation employed in disaster management | 2 80 |) 75 | M | M | ī | * | | , | | M | | | | Toe T |
| | | | | | | | | | | | | | | | | 1 |

| Durat | Duration (hour) | 5 | 5 | 5 | 22 | 2 |
|-------|-----------------|---|--|--|--|--|
| S-1 | SLO-1 | Disaster management; Global Issues; History of Disaster management | Hazards- Geological | Vulnerability and Risk- Quantitative and qualitative approach of risk evaluation | Pre-Disaster Management ; Post Disaster Management | Role of Technology in Disaster Management in India; Emergency Management Systems (EMS) |
| | SLO-2 | SLO-2 Case Study | Case Study | Example of risk evaluation | Discussion- With Case Study | Discussion- NDMP Manual |
| S-2 | SLO-1 | Global Scenario (1970's-80's)- Yokohoma and UN Strategy for Disaster Reduction, Hygo Framework for Action | Hazards- Hydrologic, Meteorological | Risk Perception; Vulnerability | Integrated Developmental Flanning for Disaster Management Role of Remote sensing. GIS a Government agencies and NGO's ir. GPS in Disaster Management Mitigation & Management | Role of Remote sensing, GIS and GPS in Disaster Management |
| | SLO-2 | SLO-2 Discussion on various strategies | Case Study | Example of Risk assessment | Discussion- With Case Study | Discussion- NDMP Manual |

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| Dura | Duration (hour) | 5 | တ | 5 | 5 | 5 |
|------|-----------------|--|--|---|---|--|
| S-3 | SLO-1 | SLO-1 Disaster Management- Phases | Hazards- Biological/ health related, Infrastructure | Principles of mitigation measures; Preparedness | Vulnerable Groups in Disasters Management; Essential Supplies; Site Management, Medical Trauma and Stress Management | Disaster Management in India- NDRF |
| | SLO-2 | SLO-2 Discussion- NDMP- Manual | Case Study | Discussion- Need for Preparedness, Role of feam work | Discussion- With Case Study | Discussion- NDMP Manual |
| S-4 | SLO-1 | Disaster Trends, Relation between Poverty Development | Hazards- Transportation, Infrastructure | Agencies involved; Mitigation- Types of Disasters; Emotional Impacts of Disasters | Physical and Socio-economic Impacts of Disasters; Emotional Impacts of Disasters | Disaster Management Act (2005), Disaster Management Policy (2009) |
| | SLO-2 | SLO-2 Discussion- NDMP- Manual | Case Study | Discussion on various types of mitigation and their importance | Discussion- With Case Study | Discussion- NDMP Manual |
| S-5 | SLO-1 | SLO-1 Disaster Management- Indian Scenario | Hazards- Industrial, Intentional | Obstacles in Mitigation Process; Role of Insurance | Rehabilitation and Reconstruction; Education and Public awareness; Capacity building | Major Disasters in India |
| | SLO-2 | SLO-2 Case Study | Case Study | Case Study | Discussion- With Case Study | Case Studies |

| | _ | Alexandra Metrical Disease III C Deser 1000 | 5. Disaster Management Act "2005", Ministry of Home Affairs, Govt. of India, 2005 |
|-----------|--------|---|---|
| | - | D. Alexanuer, Indiural Disasters, ULO Fress, 1999 | Reports of "National Disaster Management Authority" Gout of India 2013 |
| | 2 | W.N. Carter, Disaster Management: A Disaster Management Handbook, Asian | https://ontal ac.in/courses/105104183# |
| Daiarea | _ | Development Bank, 2008 | |
| , Lean | က - | Damon P. Coppola, Introduction to International Disaster Management, 3 rd edition, |). IIIIps.///ipter.ac.////courses/124107070/ |
| Resources | ွှ | Elsevier, 2015 | |
| | 4. | C.J. Barrow, Developing the Environment: Problems and Management, Harlow: | |
| | _ | Londmon 100K | |

| earning | earning Assessment | | | | | | | | |
|---------|--------------------|---------------|----------|-----------------------|---|---------------|----------|------------|-----------------------|
| | - | | Conti | nuous Learning Assess | Continuous Learning Assessment (100% weightage) | (e | | Final Exam | Final Examination (0% |
| | Bloom's Level of | CLA – 1 (30%) | | CLA - 2 (50%) | ; (20%) | CLA - 3#(20%) | 3#(20%) | weig | weightage) |
| | l ninking | Theory | Practice | Theory | Practice | Theory | Practice | Theory | Practice |
| 7 | Remember | /000 | 2000 | 150% | 15% | 10% | 10% | 3 | <u> </u> |
| revel | Understand | 70.70 | 20.70 | 10/0 | 0/0 | 20 | 200 | | |
| - | Apply | 7000 | 7000 | 150% | 15% | 20% | %02 | × | İ |
| revel 2 | Analyze | 0/.07 | 20.70 | 0/01 | 0/0 | 0/07 | 20.03 | | |
| 6 101.0 | Evaluate | 400% | 10% | %00 | 20% | %00 | %00 | (3)) | 4 |
| revel 5 | Create | 1070 | 10.70 | 0/07 | 20.70 | 0/07 | 20.02 | | |
| | Total | 100 % | % | 100 % | %(| 100 | 100 % | | 1 |

CLA - 3 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, and Conf. Paper etc.

| Course Designers | | |
|--|---|------------------------------|
| Experts from Industry | Experts from Higher Technical Institutions | Internal Experts |
| Mr. Suyash Misra, Arcadis, Bangalore, suyash.misra@gmail.com | Dr. Harish Gupta, Osmania University, Hyderabad, harishgupta78@gmail.com Dr. R. Sivakumar, SRM:ST | Dr. R. Sivakumar, SRM:ST |
| or. Rajkumar, Director, HECS, Chennai. rajkumar@hecs.in | Dr. E.S.M Suresh, Professor & Head, NITTIR, Chennai, esmsuresh@amail.com | Dr. F. Purushothaman, SRMIST |

| Course | 20GNA511T | Course Name | CONSTITUTION OF INDIA | Course A Category | Audit | 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
|-------------------------------|----------------|----------------|----------------------------------|----------------------|-------|---|
| Pre-requisite Courses | Nil | +- | Co-requisite Nii Courses | Progressive N | 11 | |
| Course Offering Department | All Department | ənt | Data Book / Codes/ Nii Standards | | | |

| CLR-3: Identify the basic provisions in the Indian constitution CLR-3: List the fundamental rights, rights to equality, freedom, religion, culture, education and the right language exploitation CLR-3: against exploitation CLR-3: Identify the fundamental duties of the Union of India, President, Vice-President, Union Ministers Identify the fundamental duties of the Union of India, President, Vice-President, Union Ministers CLR-4: Identify the fundamental duties of the Union of India, President, Vice-President, Union Ministers CLR-5: Identify the fundamental duties of the Union of India, President, Vice-President, Union Ministers CLR-6: Identify the fundamental duties of the Union of India, President, Vice-President, Union Ministers CLR-6: Identify the fundamental duties of the Union of India, President, Vice-President, Union Ministers CLR-6: Individual tax and GST CLR-7: Individual tax and GST CLR-6: Individual tax and GST CLR-6: Individual tax and GST CLR-7: Individual tax and GST CLR-6: Individual tax and GST CLR-6: Individual tax and GST CLR-7: Individual tax and GST CLR-6: Individual tax and GST CLR-7: Individual tax and GST CLR-6: Individual tax and GST CLR-7: Individual tax and GST CLR-8: Individual tax and GST CLR-9: Individ | Course | -earning Rationale (CLR): | Course Learning Rationale (CLR): At the end of this course, learners will be able to: | ت | Learning | <u>D</u> | | | Pro | Program Learning Outcomes (PLO) | earnir- | ng Out | come | s (PL(| <u> </u> | | |
|--|--------|---|---|------------|----------|----------|-----|----|----------|---------------------------------|---------|--------|------|---------|----------|----------|---------|
| List the fundamental rights, rights to equality, freedom, religion, culture, education and the right against exploitation Identify the fundamental duties of the Union of India, President, Vice-President, Union Ministers and Parliament functions Individual to a most separate in the Indian Constitution, its provisions and right of a citizen and the society List the special provisions and functionality of electron commission, public service commission, individual tax and CST Build knowledge on the various aspects in the Indian Constitution, its provisions and right of a citizen and the society Carlos of the Union of India, President, Vice-President, Union Ministers Carlos of the Union of India, Freedom, Vice-President, Union Ministers Carlos of the Union of India, Freedom, Vice-President, Union Ministers Carlos of the Union of India, President, Vice-President, Vice-President, Union Ministers Carlos of the Union of India, President, Vice-President, Vice- | CLR-1: | Identify the basic provisions | in the Indian constitution | - | 2 | w | H | H | \vdash | H | 9 | 7 | ω | 6 | 10 | 1 | 12 |
| Identify the fundamental duties of the Union of India, President, Union Ministers and Parliament functions Identify the power of states, its legislature, Governors role and the state judiciary List the special provisions and functionality of election commission, public service commission, individual tax and GST Build knowledge on the various aspects in the Indian Constitution, its provisions and right of a citizen and the society Citizen and the society Coordination | CLR-2: | List the fundamental rights, I against exploitation | rights to equality, freedom, religion, culture, education and the right | | | | | | | | | | | | | | |
| Identify the power of states, its legislature, Governors role and the state judiciary individual tax and functionality of election commission, public service commission, individual tax and GST Build knowledge on the various aspects in the Indian Constitution, its provisions and right of a colitizen and the society Constitution of the society Constitution o | CLR-3: | Identify the fundamental duti and Parliament functions | | (| (| | | | LCh | | | yillic | | | | | |
| List the special provisions and functionality of election commission, public service commission, individual tax and GST Build knowledge on the various aspects in the Indian Constitution, its provisions and right of a citizen and the society Citizen and the society Citizen and the society Citizen and functionality of election commission, public service commission, individual tax and GST Build knowledge on the various aspects in the Indian Constitution, its provisions and right of a citizen and the society Citizen and the society Citizen and functionality of election commission, public service commissio | CLR-4: | | its legislature, Governors role and the state judiciary | шо | (%) | (%) | əб | +0 | _ | nés | | eni | | οτk | | əc | |
| Build knowledge on the various aspects in the Indian Constitution, its provisions and right of a citizen and the society | CLR-5: | List the special provisions are individual tax and GST | nd functionality of election commission, public service commission, | ola) gni | γουeiοί | tnəmri | | | | | | | | W mse | u | Financ | gnin |
| Note | CLR-6: | Build knowledge on the varie | ous aspects in the Indian Constitution, its provisions and right of a | l Think | ed Prof | sttA be | | | | | | | | T & leu | oiteoinu | t Mgt. & | ud resi |
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| 75 70 85 80 80 - - - <td< td=""><td></td><td></td><td></td><td>2</td><td>80</td><td>75</td><td></td><td></td><td></td><td></td><td>1</td><td>×</td><td>Н</td><td>Н</td><td>Н</td><td>M</td><td>Н</td></td<> | | | | 2 | 80 | 75 | | | | | 1 | × | Н | Н | Н | M | Н |
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| Dur | Duration (hour) | 8 | က | 3 | 3 | ణ |
|----------------|--------------------|--|--|---|---|--|
| | SL0-1 | SLO-1 Meaning of the constitution law and The Directive Principles of State Policy | The Directive Principles of State Policy | President of India (with Powers and Governor of the State (with Powers Local Self Government – Functions) Constitutional Scheme in | Governor of the State (with Powers and Functions) | Local Self Government – Constitutional Scheme in India |
| . . | SLO-2 | SLO-2 Historical perspective of the Constitution of India | Scheme of the Fundamental Right to Prime Minister of India (with Powers The Chief Minister of the State (with Emergency Provisions : National, Equality And Functions) And Functions F | Prime Minister of India (with Powers and Functions) | The Chief Minister of the State (with Powers and Functions) | Emergency Provisions: National, President Rule, Financial Emergency |
| 3 | SLO-1 | Salient features and characteristics of the Constitution of India | SLO-1 Salient features and characteristics Scheme of the Fundamental Right to Union Judiciary (Supreme Court) of the Constitution of India | | State Judiciary (High Courts) | Election Commission of India (with Powers and Functions) |
| 4 | SLO-2 | SLO-2 Citizenship | Scope of the Right to Life and | State Government | Union Territories, Panchayats, | The Union Public Service |

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| Dar E | Duration (hour) | 3 | 3 | က | ю | m |
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| | | | Personal Liberty under Article 21 | | | Commission (with Powers and Functions) |
| | SLO-1 | SLO-1 Scheme of the fundamental rights | Union Government, Union Legislature (Parliament) | State Legislature, Legislative Assembly, Legislative Council | Municipalities, Scheduled and Tribal Amendment of the Constitutional Areas | Amendment of the Constitutional Powers and Procedure |
| S-3 | SLO-2 | The scheme of the Fundamental SLO-2 Duties and its legal status | Lok Sabha and Rajya Sabha (with Powers and Functions), Union Executive | Powers and Functions of the State Co-operative Societies Legislature, State Executive | Co-operative Societies | Licome Tex, Goods and Services Tax |

| | 1. Durgadas Basu, Introduction to the Constitution of India, Lexis- Nexis, 2015 | lia, Lexis- Nexis, 2015 3. Kaushal Kumar Agarwal, India's No 1 book on Tax : Simple Larguage Advanced Problems: Income |
|-----------|---|--|
| Learning | 2. Subash C Kashyap, Our Parliament, National Books Trust, 2011 | Tax, Kindle, 2017 |
| Resources | | 4. Vivek K R Agarwal, GST Guide for students: Making GST - Gocd and Simple Tax, Neclam Book |
| | | House. 2017 |

| Level 1 Remember Level of Analyze CLA – 1 (30%) CLA – 2 (50%) CLA – 3#(20%) Fnal Examination (0% weightage) Level 2 Remember Understand Apply Analyze 40% - 40% - 40% - <th>Learning</th> <th>earning Assessment</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> | Learning | earning Assessment | | | | | | | | |
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| Remember Aow Indepting | | Thinking | CLA-1 | (30%) | CLA-2 | (20%) | CLA - | 3#(20%) | weig | htage) |
| Remember Understand Understand Apply 40% - 30% 30% Analyze Evaluate Create 20% - 40% 40% Total 100 % - 30% 30% | | בו בו | Theory | Practice | Theory | Practice | Theory | Practice | Theory | Practice |
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CLA - 3 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, and Conf. Paper etc.

| Experts from Industry | Experts from Higher Technical Institutions | | Internal Experts |
|--|--|------------------------------|-----------------------------------|
| 1. Dr. Usha Kodandaraman, ABK AOTS, Chenna | 1 .Dr. S. P.Dhanavel, IITM, Chennai, | 1. Dr. K. Anbazhagan, SRMIST | 3. Dr. Sukanya Saha, SRMIST |
| drushak@gmail.com | dhanavelsp@iltm@ac.in | | |
| 2. Mr. Durga Prasad Bokka, TCS Chennai, | 2. Ms. Subashree, VIT, Chennai, | 2. Ms. Cauveri B, SRMIST | 4. Dr. M. M Umarraheswari, SRMIST |
| durgaprasad@tcs.com | subashree@vit.ac.in | | 5 S. Ramya, SRMIST |

| Course | \$ | 20GNA513J | Course | VALUE EDUCATION | NOI | ပ ဖွဲ့ | Course Category | 4 | | | - | Audit | .= | | | | - 0 | ₽ ← O O |
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| Pre-re Cou | Pre-requisite Niil | | Co-requisite VIII | | Progressive Courses | W. | li. | | | | | | | | | | | |
| Cou | ffering ment | All Department | | Data Book / Codes/Standards | Nil | | | | | | | | | | | | | |
| Course L (CLR): | Course Learning Rationale (CLR): | | At the end of this course, learners will be | e able to: | | Learning | guin | | | Pro | gram | Program Learning Outcomes (PLO) | o gui | ntco | nes (| PLO) | | |
| CLR-1: | Connect the learne world | rs to their potential, ide | CLR-1: Connect the learners to their potential, identify their potential to create a new positive world | ate a new positive | | - | 2 3 | | 7 | 3 4 | ည | 2 9 | ∞ | ත | 10 11 | 1 12 | 13 | 14 15 |
| CLR-2: | Analyze the merits an systems of education | and demerits of differer on | CLR-2: Analyze the merits and demerits of different educational systems. Identify the different systems of education | dentify the different | | | | | | | | | | | | | | |
| CLR-3: | Draw attention town | ards the weaknesses th | CLR-3: Draw attention towards the weaknesses they are susceptible to and inspire them through positive models | d inspire them through | | | | | | ι | | | (5) | | | | | |
| CLR-4: | Instill a sense of proprosperous society | ofessional ethics which | CLR-4: Instill a sense of professional ethics which help them develop a safe comfortable and prosperous society | fe comfortable and | | | | əfipe | | | | lideniet | uan un | Vork | 000 | 2011 | | |
| CLR-5: | Cultivate a spirit of | willing accommodation | CLR-5: Cultivate a spirit of willing accommodation in an increasingly diverse world | se world | | - | _ |)MC | _ | | _ | | 200 | ١ш١ | | | _ | |
| CLR-6: | Strengthen, enhand spheres of life | se the spirit of positivity | CLR-6: Strengthen, enhance the spirit of positivity and facilitate positive contribution in various spheres of life | antribution in various | | i Thinkin | oford be | ering Kno | s ylsnA n | & Develorigies S, Design | eU looT | S. Cultul | s Jnem | səT & İsi | noitsoini | Mgt. & F ng Learn | | |
| Course L (CLO): | Course Learning Outcomes (CLO): | | At the end of this course, learners will be | e able to: | | | - | enign3 | | | | _ | Ethics | ubivibul | | | - OSd | -08d 2-08d |
| CL0-1: | Equipped with an | awareness of their posi | CLO-1: Equipped with an awareness of their positive energy and power | | | - | | 7 | | | ≊ | Ξ | I | 王 | Ξ | I | E. | |
| CL0-2: | Identify the meani masses | ng of 'education'; have | a clearer and better und | CLO-2: Identify the meaning of 'education'; have a clearer and better understanding in taking education to the masses | ation to the | 2 7 | 75 70 | Z | Ξ | 2 | I | H | 2 | I | I | I | • | |
| CLO-3: | | nesses; understand ris s | Assess their weaknesses; understand risks involved and rectify the negative instances | nem through learning from positive and | positive and | 2 8 | 80 75 | Z | Ĩ | | S | I | M | H | I | H | ٠ | · · |
| CLO-4: | Realize their profe | CLO-4: Realize their professional responsibilities | +60 | | | 2 7 | 75 70 | I | Z | 1100 | I | H | H | I | I | Ξ, | .1 | ją, |
| CLO-5: | Acquire the requir | ed values in an expand | ling pluralistic world not t | CLO-5: Acquire the required values in an expanding pluralistic world not be swept off their feet due to the rapid changes | to the rapid | 2 8 | 85 80 | Z | | | H | H | H | I | I | H . | | ř |
| : 9-OTO | | understanding of thems | selves, society they live. | Equip with better understanding of themselves, society they live. Identify responsibilities in creating a peaceful world | creating a | 2 8 | 80 75 | Z | 2 | | H | H | H | I | I | H | | 9. 1 |

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| Da | Duration | Visions for Youth | Youth and Education | Youth and Society | Youth as Professionals | Youth in Pluralistic Society |
|-----|----------|--|---|---|--|---|
| = | (nont) | 9 | 9 | 9 | 9 | 9 |
| | SLO-1 | Introduction | Meaning and the significance of education | Need for social values in the present context | Introduction to professional values | Introduction to pluralistic society, forces of globalization |
| S-1 | SLO-2 | Quiz | Brainstorming | Poem – "Where the mind is without Brainstorming through visual fear" Write up on various instances from real life | Brainstorming through visual cues | Group Discussion |
| | SLO-1 | Two speeches by great personalities | Overview of different (traditional, modern)educational systems | Individual and group behavior, respect for others | Engineering societies ir. India | Science and technology intercultural proximity |
| S-2 | SLO-2 | Oral presentations | Debate | Case study on recent happenings | Quiz | Narration of stories from various religions to illustrate the oneness of humanity |
| S-3 | SLO-1 | Quotes, proverbs relating to the power Overview of different (traditional, and potential of youth, Excerpts: Wings of Fire | Overview of different (traditional, modern) educational systems | Civic sense, bullying-substance abuse, uses of expletives | Challenges to be addressed by Engineers in India | Challenges to be addressed by Positive, Negetive impact: religion, Engineers in India politics, gender, economic status, aesthetics |
| | SLO-2 | Collecting proverbs highlighting the potential of youth | Debate | Case study on recent happenings | Case Study | Discussion on "To Kill a Mocking Bird" |
| 73 | SLO-1 | Two news articles highlighting the initiatives for social causes by youth | Role of youth in education, Urban and Rural set up, dissemination | Hero worship, gender insensitivity, moral policing | Challenges in different sectors: agriculture | Challenges in different sectors: Values required to live in a global agriculture |
| 5 | SLO-2 | Role play in a similar context | Student presentations | Case study on recent happenings | Case Study | Poster presentation on festivals of various religions |
| S-5 | SLO-1 | Two news articles highlighting the initiatives for social causes by youth | Designing and framing educational Positive contribution by youth in curriculum and materials promoting social welfare | Positive contribution by youth in promoting social welfare | Challenges in different sectors: urban development, environment | Challenges in different sectors: Learning the etiquettes of various urban development, societies environment |
| | SL0-2 | Role play in a similar context | Students' Presentation based on write ups | Short videos followed by discussions | Group activity (oral and written) | Group activity (oral and written) Poster presentation on festivals of various religions |
| 9-8 | SLO-1 | One song exhibiting the positive energy of youth | The pressing challenges in current Positive contribution by youth in educational system | Positive contribution by youth in promoting social welfare | Challenges in different sectors: sustainable development, cyber security | Challenges in different sectors: Success of pluralistic society, enliven sustainable development, cyber the society, religious harmony through security |
| | SLO-2 | Discussion on the song | Collage Design | Short videos followed by discussions | Case Study – from Newspapers | Case Study – from Newspapers Writing the aspects of pluralistic society based on the text |

| Kalam, APJ Abdul. Wings of Fire: AN Autobiography of APJ Abdul Kalam. Ed. Sangam Books Ltd., 1999 Banaras Hindu University Speech" and "To Students". The Voice of Truth. General Editor Shriman Narayan. Resources Navajivan Publishing House. pp. 3-13 and pp. 425-30. www.mkgandhi.org Piroda, Sam. "Challenges in Science and Technology": www.nfdindia.org/loc19.htm Warterscarcity |
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| Kalam, APJ Abdul. Wings of Fire: AN Autobiography of APJ Abdul Kalam. Ed. Sangam Books Ltd., 1999 "Banaras Hindu University Speech" and "To Students". The Voice of Truth. General Editor Shriman Narayan. Navajivan Publishing House. pp. 3-13 and pp. 425-30. www.mkgandhi.org Piroda, Sam. "Challenges in Science and Technology". www.nfdindia.org/loc19.htm |
| Kalam, APJ Abdul. Wings of Fire: AN Autobiography "Banaras Hindu University Speech" and "To Students Navajivan Publishing House. pp. 3-13 and pp. 425-3 Piroda, Sam. "Challenges in Science and Technolog |
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| earnin | earning Assessment | | | | | | | | |
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| | Bloom's Level of | CLA – 1 (30%) | (30%) | CLA-2 (50%) | 5 (50%) | CLA- | CLA - 3#(20%) | weig | weightage) |
| | BIJINITI | Theory | Practice | Theory | Practice | Theory | Practice | Theory | Practice |
| 10.00 | Remember | 7000 | 2000 | 150% | 15% | 15% | 15% | v | £ |
| revel | Understand | 20.70 | 20.70 | 10/0 | 200 | 200 | 0/01 | | |
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CLA - 3 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, and Conf. Paper etc.

| | Course D | Course Designers | | |
|------------------------------------|--|--|---------------------------|------------------------|
| Experts from Industry | Experts from Higher Technical Institutions | | Internal Experts | |
| . Dr. Usha Kodandaraman, ABK AOTS, | 1. Dr. S. P.Dhanavel, IIT Madras, | 1. Dr. K. Anbazhagan, SRMIST | 2. Dr. B. Cauveri, SRMIST | |
| drushsk@amail.com | dhanavelsp@iitmac.in | | | |
| . Mr. Durga Prasad Bokka, TCS, | 2. Ms. Subashree, VIT, Chennai, | 3. Dr. M. M. Umamaheswari, SRMIST 4. Dr. Sukanya Saha, | 4. Dr. Sukanya Saha, | 5. Ms.S. Ramya, SRMIST |
| duraaprasad@tcs.com | subashree@vit.ac.in | | SRMIST | |

| Course | se e | 20GNA512L | Course | PHYSICAL AND MENT | PHYSICAL AND MENTAL HEALTH USING YOGA | 4 | | Course | | 4 | | | Audit | ŧ | | | - 0 | -0 | 2 Б | 00 |
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| Pre-re | Pre-requisite Niil Courses | | | Co-requisite Courses | III | | P.C | Progressive Courses | .iii | | | | | | | | | | | |
| Cour | Course Offering Department | Centre for Applic | Centre for Applied Research in Education | uc | Data Book / Codes/ Standards | IN | | | | | | | | | | | | | | |
| Course | Course Learning Rationale (CLR): | | At the end of this course, learners | learners will be able to: | | Lea | Learning | | | 1 | rogra | Program Learning Outcomes (PLO) | arnir | no 6 | tcom | es (F | 10) | | | |
| CLR-1: | Utilize rich Indi | ian heritage and kr | nowledge for self-healing | Utilize rich Indian heritage and knowledge for self-healing and self-protection from diseases | diseases | - | 2 | 3 | 7 | 60 | 4 | ٤ | 7 | 80 | 9 10 | = | 12 | 13 | 4 | 13 |
| CLR-2: | Apply meditatic body | on for attaining ha | Apply meditation for attaining happiness and balancing emotions body | emotions and state of mind and | and | (w | | | | | 110.1104 | | tilids | K | | | | | | |
| CLR-3: | | Intellectually develop oneself by ide towards absolute oneness in space | dentifying oneness with ce | Intellectually develop oneself by identifying oneness with divine state and transform towards absolute oneness in space | | oola) g | | | | | | ə. | nistauS | noW m | | inance | 6u | | | |
| CLR-4: | Socially transfc | orm into a meaning | iful and purposeful indiv | CLR-4: Socially transform into a meaningful and purposeful individual to both self and society | ety | nkin | | | | | | ırışırı | 18.1 | səT | | 8. F | ยรยม | | | |
| CLR-5: | Spiritually enlig | ahten oneself by pu | CLR-5: Spiritually enlighten oneself by purifying the body, soul and have | nd have a blissful existence | 93 | <u> 1</u> 41 | _ | | | | | ប្ប | ueu | βle | | .¹gt. | эү б | | | |
| CLR-6: | Achieve personal benefits of emotional and mental fitness | nal benefits of who mental fitness | Achieve personal benefits of whole health and wellbeing by pract emotional and mental fitness | by practicing yoga for physical, | sical, | ło ləvə. | xbecte | etoecte | торет |) ngisəC sisylsnA | Modern | (teloos | noiivn <u>=</u> | ebircs ndividus | пшшос | 1 toejon ^c | ite Long | 1-0Sc | Z-030 | E-056 |
| Course L | earning Outco | omes (CLO): At t | Course Learning Outcomes (CLO): At the end of this course, learners will be able to: | earners will be able to: | | ı | - | | | | | | | | | 1 | 1 | | | 1 |
| CL0-1: | Identify Indiar for the same | n heritage, culture. | Identify key anatomical | Identify Indian heritage, culture. Identify key anatomical structures in the human body and basic exercises for the same | ody and basic exercises | 2 | 80 7 | - 22 | Z | | 1 | Н | I | I | H | (1) | H | | 181 | DOM: |
| CL0-2: | | reditation practices | Apply yoga meditation practices for emotional development and | nent and wellbeing | | 2 | 75 7 | - 02 | Z | i | 1 | H | H | H | H | 9 | H | 3 | ā | -01 |
| CLO-3: | Identify educe | ational and intellec | tual development metho | Identify educational and intellectual development methods using five sense realization and transformation | ation and transformation | 3 | 80 7 | - 2/ | Z | 1 | | H | H | H H | ı. | • | H | Ō | ā | т |
| CL0-4: | Demonstrate habits | human values and | l emotions through thor | Demonstrate human values and emotions through thorough understanding about life, naturopathy and food habits | life, naturopathy and food | က | 75 7 | - 02 | 2 | | 1. | Н | H | + H | Н Н | ٠ | Н | Ť | a | 9 |
| CLO-5: | Impact self ar. | nd society by peac | eful coexistence with se | Impact self and society by peaceful coexistence with self-introspection and balanced diet charts | sed diet charts | 3 | 85 8 | - 08 | Ŋ | 1 | • | Ή | Η | H H | H | | Н | | | а |
| :9-OTO | | yoga exercises an | d postures to stretch an | Demonstrate yoga exercises and postures to stretch and strengthen the body and mind | l mind | က | 85 8 | - 08 | Σ | 1 | - | H | H | H | H H | ٠ | Ξ | | 9 | , |

| Da | Duration | Physical Development | Emotional Development | Intellectual Development | Social Development | Spiritual Development |
|----------|----------------|---|---|---|--|--|
| ٥ | (hour) | 9 | 9 | 9 | 9 | 9 |
| | SLO-1 | Indian Heritage & Culture, Concept of Brain Functions Yoga, Objectives, Science & Art of Yoga Cognitive Mind | Brain Functions, Bio-Magnetism, aCognitive Mind | Education & Intelligence Development using Yoga. Improving Intelligence | Introduction: Social Intelligence Spiritual Connect & Yoga: Self-Realization, Self-Awareness, Self-Actualization | Spiritual Connect & Yoga: Self- Realization, Self-Awareness, Self- Actualization |
| એ | SLO-2 | Women and Yoga Practice – Classification, Modern Age, Philosophy of Life | Emotional Intelligences, Managing Stress and Emotions | Learnability through Concentration, Intelligence through learning sense organs | Human values, Ethics & Morality | Cause and Effect Realization (Karma Yoga), Harmony in Life |
| S-2 | SLO-1 SLO-2 | Practice1: Standing exercise, Surya Practice4: Surya Namaskar Meditation (Self Realization), Relaxation Meditation (Five Selaxation | Practice4: Surya Namaskar, Standing asanas Meditation (Five Sense Realization), Relaxation | Namaskar, Practice7: Yoga for Youthfulness (Kayakalpah Yoga) Sense Realization), Meditation (Five Sense Realization), Relaxation | Practice 10: Kayakalpha, Bhandas, Meditation (Crown) Self-introspection Practice (Moralization of Desire) & | Practice 13: Management of Physical problems (Yoga therapy) Meditation (Nine centre) & Relaxation |
| | SLO-1 | Physical Health: Body Structure, Diseases and Causes, Science of Himan Rody | Meditation for Emotional development: Eyebrow Center (Acma) Meditation | Theory of Intellectual Transformation: Exercises for Self-Introspection: Spiritual Enlightenment Divine state origin, absolute space, Maalysis of thoughts, Moralization of desires | Kelaxation Exercises for Self-Introspection: Analysis of thoughts, Moralization of desires | Spiritual Enlightenment |
| | SLO-2 | Yoga & Youthfulness. Benefits, Comparison between other exercises and Yoga | Genetic Centre (Santhi) Meditation. Stress Relaxation Exercises | Transformation of universe, living beings, Intelligence, Knowledge, Wisdom & Peace | Anger Management, Purifyir Eradicating worries, concerns & center) challenges | Purifying the Body (Genetic center) |
| 8-4 | SLO-1 | Surya Namaskar, | Practice5: Surya Namaskar, Sitting asanas, | Practice8: Kayakalpha Yoga, Pranayama Maditation (Acna) - Relaxation | Practice11: Kayakalpha Yoga, Krisya Yoga Yoga Midhras Meditation | Practice14: Project Submission Meditation Introspection |
| | SLO-2 | iveditation (sell realization) – Relaxation | Wednalloff (Ayria) & Nelakalloff | Weditalioli (Aylıa) - Nelakalıdı | (Santhi) & Relaxation | Sublimination |
| ς, rċ | SL0-1 | Exercises: Hands, Legs, Neuro- Muscular breathing, Eye, Ears, Nostrils, kidney, brain | Asanas (Postures) for Body Structure: Full Body Structure Maintenance | Exercises: Intellectual development Brain Crown Centre (Thuriyam) Meditation | Therapy for Social Development: Gestures Yoga (Mudhras) – Body locks (Bhandhas) | Spirituality for Stress Management |
| | SLO-2 | digestive tract, stomach, lungs, spine, hip, neck. Pressure points in our body | Standing, Sitting, Prone & Supine Posture, Benefits of asanas | Five Senses (Panchendriya) Meditation, Consciousness and Law of nature | Indian Medical System: Naturopathy, Food, Nutrition, Diet Chart for Youthfulness | Yoga Practices for blissful existence |
| လ ဇ | SLO-1 | Practice3: Prone & Supine posture Exercises | Practice6: Surya Namaskar, Prone & Supine posture Asanas | Practice9: Kayakalpha, Mudhras, Self- introspection Practice (Thought Analysis) | Practice12: Balancing Asanas, | Practice15: Practical Exam |
| | SLO-2 | Meditation (Self Realization) – Relaxation | Meditation (Shanthi) & Relaxation | Meditation (Santhi), & Relaxation | Meditation (Crown) & Relaxation | Meditation & Relaxation |

| Learning Resources | Sadhguru Jaggi Vasudev, Inner Engineering – A yogi's guide to joy, 2016 Shri Shri Ravi Shankar, The Art of stress-free Living, 2011 | Vivekananda Kenthria Prkasan Trust, Yogam, 2006 Swami Chetanananda, Meditation and Its Methods According to Swami Vivekananda, |
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| | 3. Swa | Swami Ramdev Ji Yog Its Philosophy and Practice, 2008 | Jan 2001 |
|---|---------|---|---|
| | 4. Yogi | 4. Yogiraj Vethathiri Maharishi, Yoga for Modern Age, Tenth edition, Vethathiri | 8. Dr. Lakshminarain Sharma, Yoga for the cure of Common Diseases, Mar 2016 |
| | Publ | Publications, 2007 | 9. Swami Satyananda Saraswati, Asana Pranayama Mudra Bandha, Bihar School of |
| 7 | 5. Yogi | . Yogiraj Vethathiri Maharishi, Simplified Physical Exercises, Forty Second edition, Jan- | Yoga, 1993 |
| | 2014 | 4 | 10. Dr. Asana Andiappan, Thirumoolar's Astanga Yoga, International Yoga Academy, 2017 |

| -earning | Learning Assessment | | | | | | | | |
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| | go lette l'elected | | Contin | uous Learning Asses | Continuous Learning Assessment (100% weightage) | (e) | | Final Exam | Final Examination (0% |
| | Thinking Thinking | CLA - 1 (30%) | (30%) | CLA - 2 (50%) | 2 (50%) | CLA - 3 | CLA - 3#(20%) | weig | weightage) |
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| | Course Designers | |
|---|---|---------------------------------|
| Experts from Industry | Experts from Higher Technical Institutions | Irternal Experts |
| 1. Mr. K. Sivakumar, LIC of India, ksivalic1970@gmail.com | 1. Dr. R. Elangovan, Tamilnadu Physical Education and Sports University, | 1. Dr. V. Nithyananthan, SRMIST |
| | relangovantnpesu@yahoo.co.in | |
| 2. Mrs. R. Piramukutty, World Community Service Centre, | 2.Dr. N. Perumal, Vethathiri Maharishi Institute for Spiritual and Intuitional Education, | 2. Dr. S. Jahira Parveen SRMIST |
| iramukutty.gdvmvkm@gmail.com | visionacademy@vethathiri.edu.in | |

Mandatory Courses (M)
For All Specializations

Master of Technology
(Full Time)

Academic Year 2020 - 2021



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)

Kattankulathur, Chengalpattu District 603203, Tamil Nadu,
India

| Mandatory L T P C | | |
|------------------------------|-----------------------------|---------------------------------|
| Course M | Progressive Nii Courses | Nii |
| COURSE FOR ENGINEERS-I Ca | | Data Book / Codes/ Standards |
| CAREER ADVANCEMENT COURSE FO | Co-requisite Nil | Career Development Centre |
| Course | | Career Dev. |
| 20PDM501T | ite Nii | Course Offering Department |
| Course | Pre-requisite Niil | Cours |

| Course (CLR): | Course Learning Rationale (CLR): | The purpose of learning this course is to: | Lea | earning | | | | | Ē | ogram | Learn | Program Learning Outcomes (PLO) | tcomes | » (PLO | | | | |
|------------------|---|---|-----------|---------|---------|--------------------|---------|------------|----------|----------|------------|---------------------------------|----------|--------|-----------|--------------------|------|------|
| CLR-1: | Become an expert in c | CLR-1: Become an expert in communication and problem solving skills | 1 2 | က | - | 2 | က | 4 | 2 | 9 | | 8 | 0. | 0 11 | 12 | 13 | 14 | 15 |
| CLR-2: | Recapitulate fundamer | CLR-2: Recapitulate fundamental mathematical concepts and skills | | | | | | | | | | | | | | | | |
| CLR-3: | Strengthen writing skills pr mathematical applications | Strengthen writing skills professionally and understand commercial mathematical applications | | | | | | | | | | | | | | | | |
| CLR-4: | | Identification of relationships between words based on their function, usage and characteristics | | - | | 26 | Ju | | | | (tillidsn | | JIK | | Э | | | |
| CLR-5: | Sharpen logical and cr. | CLR-5: Sharpen logical and critical reasoning through skillful conceptualization | | - | | nai | шeш | | _ | | ista | | ρM | | | f | | |
| CLR-6: | Acquire the right knowlexamination | Acquire the right knowledge, skill and aptitude to face any competitive examination | _ | - | | | - | | | Culture | u2 & tne | | твэТ х | - | | resuulo | | |
| Course (CIO): | Course Learning Outcomes | At the end of this course, learners will be able to: | T to lava | xbected | xpected | inəənign Məldor | esign & | nalysis, I | odern To | ocjety & | mvironme | thics | lsubivib | junumo | gM toelon | OS - J Je Fougl | Z-0S | £-08 |
| CL0-1: | Acquire communication | CLO-1: Acquire communication and problem solving skills | 1 | H | H | | Н | | + | S ' | Э, | 3 - | ul I | | | + | | + |
| CL0-2: | Build a strong base in | CLO-2: Build a strong base in the fundamental mathematical concepts | | | | - H | | | * | | 10 | e | H | H | | H | | 40 |
| CL0-3: | Acquire writing skill to | CLO-3: Acquire writing skill to communicate with clarity | | . 08 | | H - | - | H | Ü | | 6 3 | •0 | H | H | | H | | χ. |
| CL0-4: | CLO-4: Use apt vocabulary to embellish language | embellish language | Н | . 2/ | - 02 | H | • | Н | Ť | . 6 | :00 | 10 | Н | H | E) | H | •0 | - |
| : cro-5 | Gain appropriate skills recruitment | CLO.5: Gain appropriate skills to succeed in preliminary selection process for recruitment | 3 | 85 (| - 08 | H . | _ | H | 9 | 4 | į | , | Н | H | , | . Н | | |
| :9-O73 | Enhance aptitude skills | CLO-6: Enhance aptitude skills though systematic application of knowledge | 2 | 85 (| - 08 | H | | H | 1 | .1 | : :: | | Ή | Ŧ | | H | 10 | α |
| | | | | | | | | | | | | | | | | | | |

| Dura | uration (hour) | 9 | 9 | 9 | 9 | 9 |
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| ۲ . | S-1 SLO-1 | Types of numbers, Divisibility tests | Fractions and Decimals, Surds | Percentage - Introduction | Sentence Correction | Number and Alphabet Series |
| | SL0-2 | Solving Problems | Solving Problems | Solving Problems | Practice | Direction Test |
| S-2 | SLO-1 | SLO-1 LCM and GCD | Square roots, Cube roots, Remainder | Percentage Problems | Reading Comprehension | Blood Relations |
| | SLO-2 | SLO-2 Solving Problems | Solving Problems | Solving Problems | Practice | Arrangements Linear, Curcular |

| Duration (hour) | (hour) | 9 | 9 | 9 | 9 |
|------------------|---|------------------|---------------------|-------------------------|----------------------------------|
| S-3 SLO-1 | Unit digit, Number of zeroes, Factorial notation | Identities | Profit and Loss | Reading Comprehension | Ranking |
| SLO-2 | | Solving Problems | Solving Problems | Practice | Practice |
| | П | Spotting Errors | Discount | Reading Comprehension | Critical Reasoning-Strengthening |
| 5-4 SLO-2 | | | Solving Problems | Practice | Practice |
| SLO | | Spotting Errors | Sentence Correction | Linear Equations | Critical Reasoning-Weakening |
| 5-5 SLO-2 | | Practice | Practice | Solving Problems | Practice |
| | | Spotting Errors | Sentence Correction | Logical Reasoning-Intro | Critical Reasoning-Assumption |
| OTS are | | | Practice | Coding and Decoding | Practice |

| | 1. Khattar D. "Quantitative Aptitude", Pearson's Publications, Third Edition (2015). 2. Praveen R.V. "Quantitative Aptitude and Reasoning", EEE Publications, Third Edition | 5. Arihant. "IBPS PO - CWE Success Master", Arihant Publications(I) Pvt.Ltd – Meerut, First Edition (2018) |
|-----------------------|---|---|
| Learning Resources | Learning (2016) 3. Guha A. "Quantitative Aptitude", TATA McGraw Hill Publications, Sixth Edition Resources | Nisnit Sinna. Verbai Ability for CA1 , Pearson India, First Edition (2016). Archana Ram, "Placementor", Oxford University Press, (2018). Rharadwai A P. "General English for Competitive Examination." Pearson Education. |
| | (2017). 4. P.A. Anand, "Quantitative Aptitude for Competitive Examination", WILEY Publications (2019) | First Edition (2013) 9. Thorpe S. "English for Competitive Examination", Pearson Education, Sixth Edition (2012). |

| earning | Learning Assessment | | | | | | | | |
|----------|---------------------|---------------|----------|----------------------|---|---------------|----------|------------|-----------------------|
| | - | | Contir | nous Learning Assess | Continuous Learning Assessment (100% weightage) | (a) | | Final Exam | Final Examination (0% |
| | Bloom's Level of | CLA - 1 (30%) | (30%) | CLA – 2 (50%) | (20%) | CLA - 3#(20%) | 3#(20%) | weigl | weightage) |
| | i ninking | Theory | Practice | Theory | Practice | Theory | Practice | Theory | Practice |
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| | Total | 100 % | % | 100 % | %(| 100 | 100 % | | 長日 |

CLA - 3 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, and Conf. Paper etc.

| | Course Designers | |
|--|---|----------------------------|
| Experts from Industry | | Internal Experts |
| 1. Mr. Ajay Zener, Career Launcher, ajay.z@careerlauncher.com | Dr. P. Madhusoodhanan, Head CDC, SRMIST | Dr. M. Snehalatha., SRMIST |
| | Mr. J.Jayapragash , Assistant Professor, SRMIST | Dr.A.Clement, SRMIST |

| Course 20 | 20PDM502T | Course | CAREER | CAREER ADVANCEMENT COURSE FC | URSE FOR ENGINEERS - II | Course | W | Mandatory | 1 L L D C C |
|-----------------------------|-----------|---------------------------|------------|------------------------------|---------------------------------|---------|-----------------|-----------|-------------|
| Pre-requisite Nill Courses | Nil | | | Co-requisite Nii | | Progres | rogressive Niil | | |
| Course Offeri Department | | Career Development Centre | ant Centre | | Data Book / Codes/ Standards | Nii | | | |

| Course (CLR): | Course Learning Rationale (CLR): | The purpose of learning this course is to: | Le | Learning | | | | | P | ogram | Learn | no bu | Program Learning Outcomes (PLO) | (PLO) | | | | |
|---------------|--|--|----------|-----------------------|--------|-------------------|--------|---------|--------------|---------|---------|--------|---------------------------------|--------|---------------------|----------------|---------|-------|
| CLR-1: | Recapitulate fundame resume | Recapitulate fundamental mathematical concepts and building the resume | - | 2 | က | 1 2 | es | 4 | 2 | 9 | 7 | œ | о О | 10 11 | 1 12 | 13 | 14 | 15 |
| CLR-2: | Become an expert in | CLR-2: Become an expert in communication and problem solving skills | | | | | | | | | | | | | | | | _ |
| CLR-3: | Sharpen interpretation | CLR-3: Sharpen interpretational skills through skillful conceptualization, | | | | | | | | | | | | | | | | |
| CLR-4: | Sharpen analytical rea | CLR-4: Sharpen analytical reasoning skills and professional skills | (| | | | | цэ | | | ţility | | | | | | | |
| CLR-5: | Utilize professionalisn govern the behavior | CLR-5: Utilize professionalism with idealistic, practical and moral values that govern the behavior | (moola) | (%) აა | _ | egge | ment | Resear | əl | | deniste | | Work | 6506 | | | | |
| CLR-6: | | Acquire the right knowledge, skill and aptitude to face any competitive examination | inking (| 19ioifo1 ^o | | g Know | _ | ubjsə(| ol Usag | Culture | u2 & tn | | | | | 6. u. u. n. a. | | |
| 3 | | | 41 J | l be | - | - | - | g 's | 0 <u>Τ</u> Ι | 8 (| əwı | | - | | | - | - | |
| Course (CLO): | Course Learning Outcomes (CLO): | At the end of this course, learners will be able to: | гелеј о | Expect | Expect | Engine Problen | Design | ieylsnA | Modern | Society | noiivn∃ | Ethics | ubivibul | треіог | Project Life Lor | 1 - OSd | Z - OSd | - OSd |
| CL0-1: | Build a strong base in resume | CLO-1: Build a strong base in the fundamental mathematical concepts and resume | 2 | 80 | 75 | H - | | Z | • | | 3. | | | | | | | |
| CL0-2: | Acquire communication | CLO-2: Acquire communication and problem solving skills. | 2 | 75 | 20 | H | (4) | M | ¥ | ID. | i k | ь | | H | H | * | - | 1 |
| CL0-3: | Gain appropriate skills recruitment | CLO-3: Gain appropriate skills to succeed in preliminary selection process for recruitment | 2 | 90 | 22 | H | * | M | 00 | | | T | I | H | I | 3 | | ì |
| CL0-4: | Acquire interpretation. | CLO-4: Acquire interpretational skills and professional skills | 3 | 75 | 20 | H - | | ≊ | 9 | ×. | -1 | 2001 | H | H | H - | | | |
| CLO-5: | Develop professionali | CLO-5: Develop professionalism with idealistic, practical and moral values | 3 | 85 | 80 | - H | - 1 | M | 5 | ::• | -31 | а | | H | H | | 73.07 | · |
| : 9-OTO | Enhance lexical skills careful analysis of sty | Enhance lexical skills through systematic application of concepts and careful analysis of style, syntax, semantics and logic | 2 | 85 | 90 | I | į. | N | 1 | 10 | | | | Н | I | Ñ | #2 | X |

| Durat | uration (hour) | 9 | 9 | 9 | 9 | 9 |
|--------|----------------|-----------------------------|-------------------------------|--------------------|----------------------------|--------------------|
| 7 | SL0-1 | Ratio and Proportion-Intro | Sets-Rules | Group Discussion-3 | Data Sufficiency-Intro | Personal Interview |
| - 0 | SLO-2 | Solving Problems | Solving Problems | Practice | Solving Problems | Practice |
| 5 | SL0-1 | Ratio and Proportion | Sets-Identities, Venn Diagram | Group Discussion-4 | Data Sufficiency | Personal Interview |
| 7-0 | SLO-2 | Solving Problems | Solving Problems | Practice | Solving Problems | Practice |
| S-3 | 3-3 SLO-1 | Mixture and Solutions-Intro | Functions-Intro | Group Discussion-5 | Analytical Reasoning-Infro | Mock Interview |

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| | SLO-2 | Solving Problems | Solving Problems | Practice | Solving Problems | Mock Interview |
| | SLO-1 | SLO-1 Mixture and Solutions | Group Discussion- Do's and Don'ts Data Interpretation-Intro | Data Interpretation-Intro | Analytical Reasoning | Mock Interview |
| 4 | SLO-2 | Solving Problems | Practice | Solving Problems | Solving Problems | Mock Interview |
| S-5 | SLO-1 | Profile Building | Group Discussion-1 | Data Interpretation-Tables, Pie Chart | Personal Interview-Do's and Don'ts Mock Interview | Mock Interview |
| | SLO-2 | Profile Building | Practice | Solving Problems | Practice | Mock Interview |
| 9 - 8 | SLO-1 | Resume Building | Group Discussion-2 | Data Interpretation-Lines, Bar Graphs | Personal Interview | Quantitative Reasoning Revision |
| | SLO-2 | Resume Building | Practice | Solving Problems | Practice | Solving Problems |

| | 1. Khattar D. "Quantitative Aptitude", Pearson's Publications, Third Edition (2015). | 4. Bono E.D. "Six Thinking Hats is a book", Little Brown and Company, First Edition |
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| Learning | Learning 2. Guha A. "Quantitative Aptitude", TATA McGraw Hill Publications, Sixth Edition (2017). Resources 3. Butterfield J. "Soft Skills for Everyone", Cengage Learning India Private Ltd. First Edition. | 5. P.A. Anand, "Quantitative Aptitude for Competitive Examination", WILEY Publications |
| | (2011). | (2019) 6. Archana Ram. "Placementor". Oxford University Press. (2018) |

re Aptitude for Competitive Examination", WILEY Publications 6. Archana Ram, "Placementor", Oxford University Press, (2018)

| Thinking Theory CLA – 1 (30%) Continuous Learning As CLA – 1 (30%) Thinking Theory Theory Theory Imper 40 % - 40 % Imper 40 % - 40 % Imper 20 % - 40 % Imper - 40 % Imper - 40 % Imper - - Imper - - | | | | | |
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| Diloom's Level of Thinking Theory Practice CLA - 1 (30%) | : Learning Assessment (100% weightage) | | | Final Exam | Final Examination (0% |
| Theory Practice Theory Practice Theory Remember 40 % - 30 % Apply 40 % - 40 % - 40 % | CLA – 2 (50%) | CLA - 3#(20%) | (%) | weigh | weightage) |
| Remember 40% - 30 % Understand Apply - 40 % Analyze - 40 % Evaluate 20 % - 30 % Create - 30 % | | Theory | Practice | Theory | Practice |
| Understand 40 % 40 % Apply 40 % 40 % Evaluate 20 % 30 % Create 40 % 100 % | %08 | 30% | | × | 71 |
| Apply 40 % - 40 % Analyze - 30 % Evaluate 20 % - 30 % Create 100 % - 30 % | | | | | |
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CLA - 3 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, and Conf. Paper etc.

| Course Designers | | |
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| Experts from Industry | | Internal Experts |
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| | 3. Mr.P.Priyanand , Assistant Professor, SRMIST | 4. Mrs. Kaviatha Srisarann, Assistant Professor, SRMIST |

| Course | 20PDM601T | Course | CAREER ADVANCEMENT COURSE FOR ENGINEERS - III | R ENGINE | ERS - | | Course | W , | | | | Manc | Mandatory | | | | 1 T | ₽ - |
|-------------------------|--|----------------|--|---------------------|--------------------------------|---------------|------------|------------------------|----------|--------|---------|---------|----------------|---------------------------------|---------|---------|-------|---------|
| Pre-requisit Courses | Pre-requisite Nii Courses | | Co-requisite Nii | | | | Prog Co | Progressive Courses | Ni. | | | | | | | | | |
| S G | Course Offering Department | Career De | Career Development Centre | _ 8 | Data Book / Codes/Standards | ok/ ndards | İİ | | | | | | | | | | | |
| Course Lo | Course Learning Rationale (CLR): | The pu | The purpose of learning this course is to: | Learning | ing | | | | | Progr | am Lea | rning (| Jutcom | Program Learning Outcomes (PLO) | ô | | | |
| CLR-1: | acquire knowledge o program | on planning | acquire knowledge on planning, preparing and designing a learning program | 1 2 | က | - | 2 | ო | 4 | 5 6 | 3 7 | . W | ග | 10 | = | 12 | 13 | 4 |
| 3LR-2: | prepare effective lea | arning resou | CLR-2: prepare effective learning resources for active practice sessions | | | | | | - | | _^ | | | | | | | |
| 3LR-3: | facilitate active learn | ning with ne | CLR-3: facilitate active learning with new methodologies and approaches | - | - | | | | пср | | 1IIIq | | | | | | | |
| 3LR-4: | CLR-4: create balanced assessment tools | sessment to | ols | - | - | әбр | | ļue | eese | | euje | | Ork | | ลก | | | |
| 3LR-5: | CLR-5: hone teaching skills for further enrichment | for further | enrichment | - | - | əlw | s | шd | | - | | | Mπ | | IIRII | би | | |
| CLR-6: | CLR-6: define standards, goals and objectives | oals and ob | iectives | - | _ | ouy 6 | isylsi | ојеле | | | _ | | r <u>T</u> ear | noite | . S. Fi | innsė | | |
| | | | | | - | guļue | пΑг | a s | | - | - | | થી જ | soin | յոն | 9 Т 6 | | |
| Course Lo | Course Learning Outcomes (CLO): | | At the end of this course, learners will be able to: | Level or Expecte | Expecte | eeuigu∃ | Problem | ngisəQ | Analysis | Modern | Society | soit1)3 | ubivibn | пшшоე | ไวษโบเ | rod eli | l-OSc | z - OSc |
| 3.LO-1: | Build a strong found | lation in des | CLO-1: Build a strong foundation in designing a lesson plan | _ | _ | а | I | I | | | | | I | Ξ | ٠ | I | | |
| 3L0-2: | Acquire knowledge c | of learning | CLO-2: Acquire knowledge of learning resources for effective delivery | 2 75 | 0. | 1 | ェ | Ŧ | エ | N N | | | Ξ | I | | I | | ž |
| 3.0-3: | Sharpen teaching sk | kills with the | CLO-3: Sharpen teaching skills with the latest methodologies and techniques | 2 80 | 75 | 1 | Ŧ | I | T | | | | ェ | I | | I | , | , |
| 3L0-4: | Develop practical as | sessment t | CLO-4: Develop practical assessment tools to ensure validity and flexibility | 3 75 | 20 | 1 | I | ェ | | N | | | ェ | Ŧ | | Ŧ | | 4 |
| CO-5: | Enhance effective pr | resentation | CLO-5: Enhance effective presentation and teaching methods | 3 85 | | 1 | т | ェ | Ŧ | Σ | * | * | Ŧ | Ŧ | | I | 9 | 3 |
| :9-07: | Reinforce Bloom's T. | axonomy o | CLO-6: Reinforce Bloom's Taxonomy of educational goals and objectives | 2 85 | 8 | 1 | Ŧ | Ŧ | I | _ | * | | I | 1 | | I | -3 | , |

| Dura | Duration (hour) | 9 | 9 | ဖ | 9 | 9 |
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| | SLO-1 | Lower and Higher order learning | Definition and purpose of assessment | Peer Teaching practice | Live Teaching Sessions | Live Teaching Sessions |
| - 6 | SLO-2 | Outcomes from lower order learning | Practice | Discussion and feedback | Live Teaching Sessions | Live Teaching Sessions |
| S-2 | SLO-1 | Planning and preparing a Distinction between form learning programme and session summative assessment | Distinction between formative and summative assessment | Peer Teaching practice | Live Teaching Sessions | Live Teaching Sessions |
| | SLO-2 | Practice | Examples and discussions | Discussion and feedback | Live Teaching Sessions | Live Teaching Sessions |
| S-3 | S-3 SLO-1 | Teacher and Student-Centered class room | Instructional materials | Cooperative learning procedure | Live Teaching Sessions | Live Teaching Sessions |

| Dura | Duration (hour) | 9 | 9 | 9 | 9 | 9 |
|--------|-----------------|---|------------------------------|--|------------------------|------------------------|
| | SL0-2 | Discussion | Examples and discussion | Different models of cooperative learning | Live Teaching Sessions | Live Teaching Sessions |
| | SLO-1 | Roles of teachers and students Instructional design | Instructional design | Limitations of cooperative learning Live Teaching Sessions | Live Teaching Sessions | Live Teaching Sessions |
| ų 4 | SLO-2 | Discussion | Practice | Discussion | Live Teaching Sessions | Live Teaching Sessions |
| L C | SLO-1 | Discussion Strategies | Presentation of lesson plans | Structure of a lecture | Live Teaching Sessions | Live Teaching Sessions |
| ဂ ဂ | SLO-2 | Practice | Discussion | Practice | Live Teaching Sessions | Live Teaching Sessions |
| 9. | SLO-1 | Bloom's Taxonomy of educational goal | Group Work in learning | Live Teaching Sessions | Live Teaching Sessions | Live Teaching Sessions |
|) | SLO-2 | Practice | Discussion | Live Teaching Sessions | Live Teaching Sessions | Live Teaching Sessions |

| | 1. Barker I. "Cambridge International Diploma for Teachers and Trainers", Cambridge | 3. Vicki Phillips and Lynn Olson, "Ensuring Effective Instruction: How do I improve teaching |
|-----------|---|---|
| Learning | University Press, 2006. | using multiple measures?" Bill & Melinda Gates Foundation, 2013 |
| Resources | 2. Whitehead Jack, Creating a Living Educational Theory fro | m Questions of the kind: How do 4. Dr G M Chaudhary, "Teaching Methodology. Effective Teaching Strategies", |
| | I immuno mi Drontino Combridge Journal of Education 2008 | Independently Duhlished 2010 |

| earning | earning Assessment | | | | | | | | |
|---------|--------------------|---------------|----------|----------------------|---|---------------|----------|------------|-----------------------|
| | - | | Confi | nuous Learning Asses | Continuous Learning Assessment (100% weightage) | (e) | | Final Exam | Final Examination (0% |
| | Bloom's Level of | CLA - 1 (30%) | | CLA-2 | CLA - 2 (50%) | CLA - 3#(20%) | 3#(20%) | weigh | weightage) |
| | I DIDKING | Theory | Practice | Theory | Practice | Theory | Practice | Theory | Practice |
| 1 1000 | Remember | 70 07 | 30 | 30 % | , | 30 % | | : 1 | • |
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| | Total | 100 % | % | 100 | 100 % | 100 | 100 % | | |

CLA - 3 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, and Conf. Paper etc.

| Experts from Industry | | Internal Experts |
|---|-------------------------------|---------------------------|
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