**UNDER GRADUATE DEGREE MANDATORY AND ELECTIVE COURSES IN ENGINEERING**

**DEPARTMENT OF SOCIAL SCIENCES AND MANAGEMENT**

**(NUZVID- SRIKAKULAM- RK VALLEY & ONGOL CAMPUS)**

**CURRICULUM**

**(FROM THE YEAR 2023-24)**

****

**DEPARTMENT OF SOCIAL SCIENCES AND MANAGEMENT**

**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES**

**ANDHRA PRADESH**

**CONTENTS**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Page** | **Title** |
|  |  | **Social Sciences and Management courses (Departmental offered Credit Courses)** |
| 1 |  | Managerial Economics and Financial Analysis |
| 2 |  | Production Design and Innovation lab |
| 3 |  | Personality and professional development skill |
| 4 |  | Placement Skill |
|  |  | **Mandatory Courses** |
| 5 |  | Essence of Indian Knowledge System |
|  |  | **Open Elective Courses** |
| 6 |  | Universal human value II: Understanding harmony |

**MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course code** | **Course name** | **Course Category** | **L-T-P** | **Credits** |
| **22BM 2101(CHE, CE)**  **/BM1201(CSE)**  **/BM3201(ME)/ BM3201 (MME)** | **Managerial Economics and Financial Analysis** | **HSC** | **3-0-0** | **3** |

**Course Learning Objectives:**

1. To strengthen students’ managerial skill.

2. To enhance the conceptual clarity in economic concepts.

3. To develop to forecasting capability.

4. It will help to produce multi-disciplinary thought.

5. It will enhance their conceptual and practical/hand on practice in accounting.

6. It will help to implement and understand the uses of ratios.

**Course Contents:**

**Unit I: (7 hours)**

Introduction to managerial economics, consumer behavior, demand, demand analysis, demand forecasting, supply, supply analysis.

**Unit II: (5 hours)**

Theory of production, production functions, concept of cost, cost analysis, break even analysis.

**Unit III:** **(7 hours)**

Market structure-monopoly, oligopoly, monopolistic, prefect market; Pricing strategy for different market structure, Types of business organizations-sole proprietorship, partnership, private ltd. Companies and public ltd. Companies, formation of company.

**Unit IV: (10 hours)**

Introduction to capital, capital sources, Time value of money, capital budgeting- NPV, IRR, Payback period, profitability index.

**Unit V: (8 hours)**

Introduction to financial accounting, rules of debit-credit, Double-Entry Book Keeping, Journal, Ledger, Trial Balance- Final Accounts (Trading Account, Profit and   
Loss Account and Balance Sheet with simple adjustments, Preparation of final account and other related accounting statements.

**Unit VI: (8 hours)**

Financial statements, comparative statement analysis, common- size statement analysis, ratio analysis, Problems on Ratio analysis

**Learning resources**

**Text book:**

1. 1. Aryasri, A. R., *Managerial Economics & Financial Analysis*, McGraw Hill, 2014.

**Reference Books:**

1. Siddiqui., *Managerial Economics & Financial Analysis*, 2e, New Age International Private Limited, 2017.

2. . Pandey, I.M., “*Financial Management*”, 11e, Vikas Publishing House, 2015.

3. . Prasanna Chandra., “*Financial Management: Theory and Practice*”, 9e, Mc Graw Hill Education, 2015.

**Web resources:**

1. Managerial Economics and Financial Analysis, Dr. Trupti , IIT Bombay *http://nptel.ac.in/courses/110101005/*

**Course outcomes:** At the end of the course, the student will be able to

|  |  |
| --- | --- |
| CO 1 | A student will be able to understand basic economics as well as management concepts. |
| CO 2 | This subject will provide implication facilities of concepts. |
| CO 3 | Students can be able to do primary data collection and classification. |
| CO 4 | Students can also be able to forecast as well as generate trend series by utilizing the available secondary data. |
| CO 5 | They have basic knowledge about accounting and its terminologies. |
| CO 6 | They will be able to prepare and understand accounting tables. |

**For Theory courses only:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course Nature** | | **Theory** | | |
| **Assessment Method** | | | | |
| Assessment Tool | Weekly tests | Monthly tests | End Semester Test | Total |
| Weightage (%) | 10% | 30% | 60% | 100% |

**Product Design and Innovation Lab**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course code** | **Course name** | **Course Category** | **L-T-P** | **Credits** |
| **22HSXY01** | **Product Design and Innovation Lab** | **HSC** | **1: 0: 1** | **1** |

## **Course Learning Objectives**

* 1. To make awareness of the product design process.
  2. This course will give an understanding of methods, tools and techniques applied in product design.

3. This course will enhance the overview of innovation, product design process. 4.Itwillhelptounderstandcompetitivebenchmarking, aspects of human factors in product design, tools for creative concept.

1. one of the objectives of this course is to enable student for advance thinking in designing through case studies and hands-on exercises.
2. It will help students to generate creative ideas in to product design, considering human factors aspects along with its business plan

## **Course Contents**

**UNIT I (4hours)**

introduction to product and Product design, difference between Product development and product design, Need for Innovation and design, user Innovation. Need Problem Identification, product study and market study

## **UNIT II** **(3hours)**

Importance of human factors in product design, physical ergonomics, principles and issues, ergonomic assessment tool, Cognitive issues in product design.

## **UNIT III** **(2hours)**

Creative techniques and tools, concept generation, concept evaluation, concept design and presentations.

## **UNIT IV** **(4 hours)**

Product prototype, model making work flow for prototype, tools and techniques for model making and prototyping, introduction to prototype driven innovation

## **UNIT V** (7hours)

Selection of a product, Designing, marketability of product, Disciplined entrepreneurship canvas

(Students need to fill up the canvas according to their selected product or services)

## **UNIT VI** (10 hours)

## Overview of final product, assignment submission with presentation

## **Learning resources**



## Text Books

Education, 2015.

**Course Outcomes**

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

|  |  |
| --- | --- |
| CO1 | to understand innovation and its applications in different spheres of development and growth |
| CO2 | Understand Design and innovation |
| CO3 | Understand the business models and sustainable innovation models |
| CO4 | Know the entrepreneurship canvas in technology aspects |
| CO5 | Know the Business plan for a product and schemes on Innovation and Entrepreneurship |
| CO6 | Appreciate the technology incubators at Universities by going through case  studies |

**Assessment Method**

**For lab courses only:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course Nature** | | **Theory** | | | |
| **Assessment Method** | | | | | |
| Assessment Tool | Product design | Viva-voce | Record submission | End semester | Total |
| Weightage (%) | 20% | 10% | 10% | 60% | 100% |

**PLACEMENT SKILL**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course code** | **Course name** | **Course Category** | **L-T-P** | **Credits** |
| **HSXY** | **Placement Skill** | **HSC** | **2: 1: 0** | **0** |
|  |  |  |  |  |
|  |  |  |  |  |
| **Course Learning Objectives:** | |  |  |  |

1. To give an in-depth understanding on various aspects of innovation, creativity, evolving business models, incubation and entrepreneurship.
2. The course also includes sessions on blue ocean strategy and technology incubation which are proving as game changer in today's competitive scenario.
3. Course also deals with role of IPR and IP management in innovation management.
4. The course is a blend of theory and practice therefore this course does not require any prerequisite and will be useful

**Course Contents:**

**UNIT I:**  **(4 hours)**

**Behavioral Skills**

Expectation Setting, Personal Strength Analysis/ Strength Blindness, Perception Management, Ethics, Values& Etiquette, Social Etiquette and Role Modeling

**UNIT II: (6 hours)**

**Communication skill**

English Literacy**,** Self- Introduction, Verbal Communication, Non- Verbal communication, time management and placement skill**,** Language Skills**:** Social occasions, communicating in the target language in day-to-day settings

**UNIT III: (8 hours)**

**Intellectual and Subject Knowledge (IT Proficiency)**

Developed I.T skills, in an office environment with colleagues who did not speak English there was no option but to speak the target language, networking skill with various websites

**UNIT IV: (8 hours)**

**Problem Solving and Analytical Skills**

Used initiative to employ problem solving skills in order to overcome obstacles

Think more creatively to solve problems, relatively solve problems by applying familiar concepts to unfamiliar situations, Collecting and analyzing data for Year Abroad Research Project

**UNIT V: (9 hours)**

**Self-management and Personal effectiveness Skills**

Organized work placement and corresponded with employer independently

Initiative to resolve problems at work

Get-up-and-go attitude

Initiative to get to know people and find new ways to use the target language

Forced out of comfort zone – take own initiative to resolve problems

Having to plan and execute new and challenging tasks

Freedom to work by myself to meet targets

Opportunities to be creative– making fliers, posters and decisions for the company’s website

Finding somewhere to live and setting up a bank account, etc.

Being decisive in how to solve problems when there was a communication barrier

**UNIT VI: (10 hours)**

**Team Working Skills**

Working with other members of staff, Used personable skills to work effectively with colleagues, Asked questions when I was unsure as to how to proceed, Working together with people from other cultures, Working and collaborating with other interns, Responsible for leading projects, Working in an office environment**,** Social Responsibility and Global Awareness Skills, GD and personal interview

**Learning Resources**

**Assembled material with motivational videos**

**Course Outcomes**

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

|  |  |
| --- | --- |
| CO1 | It will develop the employability of student |
| CO2 | Modify the way to face interviews |
| CO3 | Clarity on presentation |
| CO4 | Develop time management |
| CO5 | Help to enhance the presentation skill |
| CO6 | develop self confidence |

**Assessment Method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Assessment Tool | Weekly | Monthly tests/ GD and Personal Interview | End Semester | Total |
|  | tests/Assignments | (In semester) | Test |  |
|  | (In semester) |  |  |  |
|  |  |  |  |  |
| Weightage (%) | 10% | 30% | 60% | 100% |
|  |  |  |  |  |

**PERSONALITY AND PROFESSIONAL DEVELOPMENT SKILL**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course code** | **Course name** | **Course Category** | **L-T-P** | **Credits** |
| **HSXY** | **Placement Skill** | **HSC** | **1: 0:1** | **1.5** |
|  |  |  |  |  |
|  |  |  |  |  |
| **Course Learning Objectives:** | |  |  |  |

1. Plan effectively to achieve your personal and professional goals
2. Recognize and overcome barriers to successful time management
3. Keep your sense of perspective to prevent and manage crises
4. Manage resources effectively and efficiently

**Course Contents:**

**UNIT I:**  (**4 hours)**

**Behavioral Skills**

Assessment of self, set your Expectation, Personal Strength Analysis/ Strength Blindness,(SWOT Analysis) Perception Management, Ethics, Values& Etiquette, Analyze your role model.

**UNIT II: (4 hours)**

**Communication skill**

Verbal Communication, Non- Verbal communication, Email correspondence, time management and speaking strategies and persuasion skills**,** advanced ways to edit your writing and polish your pronunciation.

**UNIT III: (5 hours)**

**Intellectual and Subject Knowledge (IT Proficiency)**

Developed I.T skills, research market requirements, networking skill with various websites, Show casing your IT knowledge, rehearsing knowledge in a interview pattern.

**UNIT IV: (5 hours)**

**Problem Solving and Analytical Skills**

Used initiative to employ problem solving skills in order to overcome obstacles

Think more creatively to solve problems, relatively solve problems by applying familiar concepts to unfamiliar situations, Collecting and analyzing data for Year Abroad Research Project

**UNIT V: (6 hours)**

**Personal effectiveness Skills and Group Discussion**

Organized work placement and corresponded with employer independently

Initiative to resolve problems at work, Get-up-and-go attitude, Freedom to work by myself to meet targets proactive in a common discussion forum

**UNIT VI: (6 hours)**

**Personal Presentation and C V writing**

Working together with people from other cultures, Working and collaborating with other interns, Responsible for leading projects, Working in an office environment**,** Social Responsibility and Global Awareness Skills, personal interview, CV writing and submission.

**Learning Resources**

**Assembled material with motivational videos**

**Course Outcomes**

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

|  |  |
| --- | --- |
| CO1 | It will develop the employability of student |
| CO2 | Modify the way to face interviews |
| CO3 | Clarity on presentation |
| CO4 | Develop time management |
| CO5 | Help to enhance the presentation skill |
| CO6 | develop self confidence |

**Assessment Method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Assessment Tool | Weekly | Monthly tests/ GD and Personal Interview | End Semester | Total |
|  | tests/Assignments | (In semester) | Test |  |
|  | (In semester) |  |  |  |
|  |  |  |  |  |
| Weightage (%) | 10% | 30% | 60% | 100% |
|  |  |  |  |  |

**ESSENCE OF INDIAN KNOWLADGE SYSTEM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course code** | **Course name** | **Course Category** | **L-T-P** | **Credits** |
| **HS XY 03** | **Essence of Indian knowledge System** | **MC** | **2: 0: 0** | **0** |

**Course Learning Objectives:**

1. The course aims at imparting basic principles of thought process, reasoning and inferencing. Sustainability is at the core of Indian Traditional Knowledge Systems connecting society and nature.

2. Holistic life style of Yogic-science and wisdom capsules in Sanskrit literature are also important in modern society with rapid technological advancements and societal disruptions.

3. The course focuses on introduction to Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.

**Course Contents**: **(30 hours)**

Basic Structure of Indian Knowledge System (i) वेद, (ii) उऩवेद (आयुवेद, धनुवेद, गन्धवेद, स्थाऩत्य आदद) (iii) वेदाांग (शिक्षा, कल्ऩ, ननरुत, व्याकरण, ज्योनतष छांद), (iv) उऩाइग (धर्म िास्र, र्ीर्ाांसा, ऩुराण, तकमिास्र)

Modern Science and Indian Knowledge System

Yoga and Holistic Health care

Case Studies.

**Learning Resources:**

**Text Books:**

1. V. Sivaramakrishna (Ed.), Cultural Heritage of India-Course Material, Bharatiya Vidya Bhavan, Mumbai, 5th Edition, 2014

2. Swami Jitatmanand, Modern Physics and Vedant, Bharatiya Vidya Bhavan

**Reference Books:**

1. Fritzof Capra, Tao of Physics

2. Fritzof Capra, The wave of Life

3. V N Jha ( Eng. Trans,), Tarkasangraha of Annam Bhatta, Inernational Chinmay Foundation, Velliarnad, Amaku,am

4. Yoga Sutra of Patanjali, Ramakrishna Mission, Kolkatta

5. GN Jha ( Eng. Trans.) Ed. R N Jha, Yoga-darshanam with Vyasa Bhashya, Vidyanidhi Prakasham, Delhi, 2016

6. RN Jha, Science of Consciousness Psychotherapy and Yoga Practices, Vidyanidhi Prakasham, Delhi, 2016

7. P R Sharma ( English translation), Shodashang Hridayam

**Course Outcomes**

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

|  |  |
| --- | --- |
| CO1 | Ability to understand connect up and explain basics of Indian Traditional knowledge modern scientific perspective. |

**Assessment Method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Assessment Tool | Weekly | Monthly tests | End Semester | Total |
|  | tests/Assignments | (In semester) | Test |  |
|  | (In semester) |  |  |  |
|  |  |  |  |  |
| Weightage (%) | 0 | 0 | 0 | 0 |
|  |  |  |  |  |

**UNIVERSAL HUMAN VALUES II: UNDERSTANDING HARMONY**

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| --- | --- | --- | --- | --- |
| **Course code** | **Course name** | **Course Category** | **L-T-P** | **Credits** |
| **22HSXX02** | **Human Value** | **OEC** | **2: 1: 0** | **3** |
|  |  |  |  |  |

**Course Learning Objectives:**

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS'.
2. to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
3. To facilitate the development of a Holistic perspective among students, in their profession and happiness.
4. Correct understanding of the human reality and the rest of Existance. Such a holistic perspective forms the basis of Value based living in a natural way.
5. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior.
6. It mutually enriches interaction with Nature.

**Course Contents:**

**Unit I:**  **(8 hours)**

Course Introduction - Need, Basic Guidelines, Content and Process for Value

Education

1. Purpose and motivation for the course, recapitulation from Universal Human Values-I

2. Self-Exploration–what is it? - Its content and process; ‘Natural Acceptance’ and

ExperientialValidation- as the process for self-exploration

3. Continuous Happiness and Prosperity- A look at basic Human Aspirations

4. Right understanding, Relationship and Physical Facility- the basic requirements for fulfilment of

aspirations of every human being with their correct priority

5. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario

6. Method to fulfil the above human aspirations: understanding and living in harmony at various

levels.

Include practice sessions to discuss natural acceptance in human being as the innate acceptance for

living with responsibility (living in relationship, harmony and co-existence) rather than as

arbitrariness in choice based on liking-disliking

**Unit II:** **(8 hours)**

Understanding Harmony in the Human Being - Harmony in Myself!

7. Understanding human being as a co-existence of the sentient ‘I’ and the material ‘Body’

8. Understanding the needs of Self (‘I’) and ‘Body’ - happiness and physical facility

9. Understanding the Body as an instrument of ‘I’ (I being the doer, seer and enjoyer)

10. Understanding the characteristics and activities of ‘I’ and harmony in ‘I’

11. Understanding the harmony of I with the Body: Sanyam and Health; correct appraisal of Physical needs, meaning of Prosperity in detail

12. Programs to ensureSanyam and Health.

Include practice sessions to discuss the role others have played in making material goods available to

me. Identifying from one’s own life. Differentiate between prosperity and accumulation. Discuss

program for ensuring health vs dealing with disease

**Unit III: (8 hours)**

Understanding Harmony in the Family and Society- Harmony in Human-Human

Relationship

13. Understanding values in human-human relationship; meaning of Justice (nine universal values in

relationships) and program for its fulfilment to ensure mutual happiness; Trust and Respect as

the foundational values of relationship

14. Understanding the meaning of Trust; Difference between intention and competence

15. Understanding the meaning of Respect, Difference between respect and differentiation; the other

salient values in relationship

16. Understanding the harmony in the society (society being an extension of family): Resolution,

Prosperity, fearlessness (trust) and co-existence as comprehensive Human Goals

17. Visualizing a universal harmonious order in society- Undivided Society, Universal Order- from family to world family.

**Unit IV: (8 hours)** Understanding Harmony in the Nature and Existence - Whole existence as

Coexistence

18. Understanding the harmony in the Nature

19. Interconnectedness and mutual fulfilment among the four orders of nature- recyclability and selfregulation in nature

20. Understanding Existence as Co-existence of mutually interacting units in all-pervasive space

21. Holistic perception of harmony at all levels of existence.

Include practice sessions to discuss human being as cause of imbalance in nature (film “Home” can be used), pollution, depletion of resources and role of technology etc.

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**Unit V:** (**8 hours)**

Implications of the above Holistic Understanding of Harmony on Professional

Ethics

22. Natural acceptance of human values

23. Definitiveness of Ethical Human Conduct

24. Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order

25. Competence in professional ethics: a. Ability to utilize the professional competence for

augmenting universal human order b. Ability to identify the scope and characteristics of peoplefriendly and eco-friendly production systems, c. Ability to identify and develop appropriate

technologies and management patterns for above production systems.

26. Case studies of typical holistic technologies, management models and production systems

27. Strategy for transition from the present state to Universal Human Order: a. At the level of

individual: as socially and ecologically responsible engineers, technologists and managers b. At

the level of society: as mutually enriching institutions and organizations

28. Sum up.

**Unit VI: (5 hours)**

Include practice sessions to reflect on relationships in family, hostel and institute as extended family, real life examples, teacher-student relationship, goal of education etc. Gratitude as a universal value in relationships. Discuss with scenarios. Elicit examples from students’ lives. Sum up.

**Learning Resources**

**Text books:**

1. R. R. Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Human Values and Professional Ethics.
2. Prof. K. V. Subba Raju, 2013, Success Secrets for Engineering Students, Smart Student Publications, 3rd Edition.

**Reference books**

1. Ivan IIIich, 1974, Energy & Equity, The Trinity Press, Worcester, and HarperCollins, USA
2. E. F. Schumancher, 1973, Small is Beautiful: a study of economics as if people mattered. Blond & Briggs, Britain.
3. A Nagraj, 1998 Jeevan Vidya ek Parichay, Divya Path Sansthan, Amarkantak.
4. Sussan George, 1976, How the Other Half Dies, Penguin Press, Reprinted 1986, 1991.
5. P. L. Dhar, R. R. Gaur, 1990, Science and Humanism, Commonwealth Publishers.
6. A. N. Tripathy, 2003, Human Values, New Age International Publishers.
7. Subhas Palekar, 2000, How to practice Natural Farming, Pracheen(Vaidik) Krishi Tantra Shodh, Amravati.
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth - Club of Rome's report, Universe Books.
9. E G Seebauer & Robert L.Berry, 2000, Fundamentals of Ethics for Scientists & Engineers, Oxford University Press.
10. M Govindrajan, S Natrajan & V. S Senthil kumar, Engineering Ethics ( including Humna Values), Eastern Economy Edition, Prentice Hall of India Ltd.

**Relevant CDs, Movies, Documentaries & Other Literature:**

1. value Education website, http://www.uptu.ac.in
2. Story of Stuff, http://www.storyofstuff.com
3. AI Gore, An Inconvenient Truth, Paramount Classics, USA
4. Charle Chaplin, Modern Times, United Artists, USA
5. IIT Delhi, Modern Technology - the Untold Story

**Web resources**

Prof. A.K. Sharma, ‘*Professional Ethics’*

<https://nptel.ac.in/courses/109104068/30>

**Course Outcomes**

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

|  |  |
| --- | --- |
| CO1 | The students will understand the importance of Values and Ethics in their personal lives and professional careers. |
| CO2 | The students will learn the rights and responsibilities as an employee, team member and a global citizen |
| CO3 | Student will develop judgmental capability for right and wrong |
| CO4 | This will provide a systematic following of professional career |
| CO5 | It will create better working enviourment |
| CO6 | it will teach the application part of professionalism |

**Assessment Method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Assessment Tool | Weekly | Monthly tests | End Semester | Total |
|  | tests/Assignments | (In semester) | Test |  |
|  | (In semester) |  |  |  |
|  |  |  |  |  |
| Weightage (%) |  | 0 | 0 | 0 |
|  |  |  |  |  |