JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:

Gurajada,Vizianagaram–533003,

COMPUTER SCIENCE AND ENGINERRING

1 Year 1 Semester

S.No	Course code	Course Name	L	T	P	Credits
1	R23BS01	Linear Algebra and Calculus	3	0	0	3
2	R23BS03	Engineering Physics	3	0	0	3
3	R23HS01	Communicative English	2	0	0	2
4	R23ES01	Basic Civil & Mechanical Engineering	3	0	0	3
5	R23ES07	Introduction to programming	3	0	0	3
6	R23HS01	Communicative English Lab	0	0	2	1
7	R23BS03	Engineering physics Lab	0	0	2	1
8	R23ES03	Engineering Workshop	0	0	3	1.5
9	R23ES06	IT Workshop	0	0	2	1
10	R23ES07	Computer Programming Lab	0	0	3	1.5
11	R23MC01	Health and Wellness,yoga and sport	0	0	1	0.5
		Total				20.5

1 Year 2 Semester

S.No	Course code	Course Name	L	T	P	Credits
1	R23BS02	Differential Equations and Vector calculus	3	0	0	3
2	R23BS05	Chemistry	3	0	0	3
3	R23ES03	Engineering Physics	1	0	4	3
4	R23ES04	Basic Electrical and Electronics Engineering	3	0	0	3
5	R23PC04	Data Structures	3	0	0	3
6	R23BS05	Chemistry Lab	0	0	2	1
7	R23ES05	Basic Electrical and Electronics Engineering Lab	0	0	3	1.5
8	R23PC04	Data Structures Lab	0	0	3	1.5
9	R23MC02	NSS/NCC/Scouts & Guides/Community Service	0	0	1	0.5
		Total				19.5

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S.No	Category	Title	L	T	P	Credits
1	BasicScience	MathematicalFoundationsofComputerScience	3	0	0	3
2	HSMC	UniversalHumanValues–UnderstandingHarmony&HumanEthical Conduct	2	1	0	3
3	ES	DigitalLogic&ComputerOrganization	3	0	0	3
4	PCC	SoftwareEngineering	3	0	0	3
5	PCC	ObjectOrientedProgrammingThrough	3	0	0	3
6	PCC	CASE ToolsLab	0	0	3	1.5
7	PCC	ObjectOrientedProgrammingThroughJavaLab	0	0	3	1.5
8	SEC	PythonProgramming	0	1	2	2
9	Audit Course	EnvironmentalScience	2	0	0	-
Total	**16**	**2**	**8**	**20**		

IIYear–IISEMESTER

S.No	Category	Title	L	T	P	Credits
1	Management Elective-1	ManagerialEconomicsandFinancialAnalysis	2	0	0	2
2	BasicScience	Probability&Statistics	3	0	0	3
3	PCC	OperatingSystems	3	0	0	3
4	PCC	DatabaseManagementSystems	3	0	0	3
5	PCC	FormalLanguagesandAutomataTheory	3	0	0	3
6	PCC	OperatingSystemsLab	0	0	3	1.5
7	PCC	DatabaseManagementSystemsLab	0	0	3	1.5
8	SEC	FullStackDevelopment–I	0	1	2	2
9	BS&H	Design Thinking and Innovtion	1	0	2	2
		Total	**14**	**2**	**10**	**21**
MandatoryCommunityServiceProjectInternshipof08weeksdurationduringsummervacation						

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COMPUTER SCIENCE AND ENGINERRING

HealthandAwareness:

CourseObjectives:

Themainobjectiveofintroducingthiscourseistomakethestudentsmaintaintheirmentaland physical wellness by balancing emotions in their life. It mainly enhances the essential traits required for the development of the personality.

CourseOutcomes:

Aftercompletionofthecoursethestudentwillbeableto
CO1:Understandtheimportanceofyogaandsports forPhysicalfitness andsoundhealth.
CO2: Demonstrate an understanding of health-related fitness components.
CO3: Compareandcontrastvariousactivitiesthathelpenhancetheirhealth. **CO4:**
Assess current personal fitness levels.
CO5: DevelopPositivePersonality

UNITI

Concept of health and fitness, Nutrition and Balanced diet, basic concept of immunity Relationshipbetweendietandfitness,Globalization anditsimpactonhealth,BodyMassIndex (BMI) of all age groups.

Activities:
i) Organizinghealthawarenessprogrammesincommunity
ii) Preparationofhealth profile
iii) Preparationofchartforbalancedietforallage groups

UNITII

Conceptofyoga,needforandimportanceofyoga,originandhistoryofyogainIndiancontext, classification of yoga, Physiological effects of Asanas- Pranayama and meditation, stress management and yoga, Mental health and yoga practice.

Activities:
Yogapractices–Asana,Kriya,Mudra,Bandha,Dhyana,SuryaNamaskar

UNITIII

ConceptofSportsandfitness,importance,fitnesscomponents,historyofsports,Ancientand Modern Olympics, Asian games and Commonwealth games.

Activities:

i) Participationinonemajorgameandoneindividualsportviz.,Athletics,Volleyball, Basketball, Handball, Football, Badminton, Kabaddi, Kho-kho, Table tennis, Cricket etc.
Practicinggeneralandspecificwarmup,aerobics
ii) Practicingcardiorespiratoryfitness,treadmill,runtest,9minwalk,skippingand running.

ReferenceBooks:

1. GordonEdlin,EricGolanty.HealthandWellness,14thEdn.Jones&BartlettLearning, 2022
2. T.K.V.Desikachar.TheHeartofYoga:DevelopingaPersonalPractice
3. ArchieJ.Bahm.YogaSutrasofPatanjali,JainPublishingCompany,1993
4. Wiseman,JohnLofty,SASSurvivalHandbook:TheUltimateGuidetoSurviving Anywhere Third Edition, William Morrow Paperbacks, 2014
5. TheSportsRulesBook/HumanKineticswithThomasHanlon. --3rded.Human Kinetics, Inc.2014

GeneralGuidelines:

1. Institutesmust assignslotsinthe Timetablefortheactivitiesof Health/Sports/Yoga.
2. Institutesmustprovidefield/facilityandoffertheminimumoffivechoicesofasmany as Games/Sports.
3. Institutesarerequiredtoprovidesportsinstructor/ yogateachertomentorthestudents.

Evaluation Guidelines:

- Evaluatedforatotalof100marks.
- Astudentcanselect6 activitiesofhis/herchoicewithaminimumof01activityper unit.Eachactivityshallbeevaluatedby theconcernedteacherfor15marks,totalling to 90 marks.
- Astudentshallbeevaluatedby theconcernedteacherfor10marksbyconductingviva voce on the subject.

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COMPUTER SCIENCE AND ENGINERRING

NSS/NCC/SCOUTS&GUIDENCE/COMMUNITYSERVICE

Course Objectives:

Theobjectiveofintroducingthiscourseistoimpartdiscipline,character,fraternity,teamwork, social consciousness among the students and engaging them in selfless service.

CourseOutcomes: Aftercompletionofthecoursethestudentswillbeableto

CO1: Understandtheimportanceofdiscipline,characterandservicemotto.
CO2: Solvesomesocietalissuesbyapplyingacquiredknowledge,facts,and techniques.
CO3: Explorehumanrelationshipsbyanalyzingsocialproblems.
CO4: Determinetoextendtheirhelpforthefellowbeingsanddowntrodden people.

CO5: Developleadershipskillsandcivicresponsibilities.

UNITI

Orientation

GeneralOrientationonNSS/NCC/Scouts&Guides/CommunityServiceactivities,career guidance.

Activities:
i) Conducting–icebreakingsessions-expectationsfromthecourse-knowingpersonal talents and skills
ii) Conductingorientationsprogramsforthestudents –futureplans-activities-releasing road map etc.
iii) Displayingsuccessstories-motivationalbiopics-awardwinningmoviesonsocietal issues etc.
iv) Conductingtalentshowinsingingpatrioticsongs-paintings-anyother contribution.

UNITII

Nature&Care Activities:
i) Bestoutofwastecompetition.
ii) Posterandsignsmakingcompetitiontospreadenvironmentalawareness.
iii) Recyclingandenvironmentalpollutionarticlewriting competition.
iv) OrganisingZero-wasteday.
v) DigitalEnvironmentalawarenessactivityviavarioussocialmediaplatforms.

vi) Virtualdemonstrationofdifferenteco-friendlyapproachesforsustainableliving.
vii) Writeasummaryonanybookrelatedtoenvironmentalissues.

UNITIII

Community Service

Activities:
i) ConductingOneDaySpecialCamp inavillagecontactingvillage-arealeaders-Survey in the village, identification of problems- helping them to solve via media- authorities experts-etc.

ii) ConductingawarenessprogramsonHealth-relatedissuessuchasGeneralHealth,Mentalhealth,Spiritual Health, HIV/AIDS,
iii) ConductingconsumerAwareness.Explainingvariouslegalprovisionsetc.
iv) WomenEmpowermentProgrammes-SexualAbuse,AdolescentHealthandPopulationEducation.
v) Anyotherprogrammesincollaborationwithlocalcharities,NGOsetc.

ReferenceBooks:

1. NirmalyaKumarSinha&SurajitMajumder,*ATextBookofNationalServiceScheme*Vol;.I,VidyaKutir Publication, 2021 (ISBN 978-81-952368-8-6)
2. *RedBook-NationalCadetCorps*–StandingInstructionsVolI&II,Directorate General of NCC, Ministry of Defence, New Delhi
3. DavisM.L.andCornwellD.A.,―IntroductiontoEnvironmentalEngineering‖, McGraw Hill, New York 4/e 2008
4. MastersG.M.,JosephK.andNagendranR.―IntroductiontoEnvironmental Engineering and Science‖, Pearson Education, New Delhi. 2/e 2007
5. RamAhuja.*Social ProblemsinIndia*,RawatPublications,NewDelhi.

GeneralGuidelines:

1. Institutesmust assignslotsintheTimetablefortheactivities.
2. Institutesarerequiredtoprovideinstructortomentorthestudents.

EvaluationGuidelines:

- Evaluatedforatotalof100marks.
- Astudentcanselect6activitiesofhis/herchoicewithaminimumof01activityper unit.Eachactivityshallbeevaluatedby theconcernedteacherfor15marks,totalling to 90 marks.
- Astudentshallbeevaluatedbytheconcernedteacherfor10marksbyconductingviva voce on the subject

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COMPUTER SCIENCE AND ENGINERRING

UNIVERSALHUMANVALUES-UNDERSTANDINGHARMONY&HUMANETHICALCONDUCT

CourseObjectives:

• Tohelpthestudentsappreciatetheessentialcomplementarybetween 'VALUES'and 'SKILLS'toensuresustained happiness and prosperity which are the core aspirations of all human beings.

• To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. SuchholisticperspectiveformsthebasisofUniversalHumanValuesand movementtowardsvalue-based livingin a natural way.

• TohighlightplausibleimplicationsofsuchaHolisticunderstandingin termsofethicalhuman conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

CourseOutcomes:

• DefinethetermslikeNaturalAcceptance,HappinessandProsperity(L1,L2)
• Identifyone'sself,andone'ssurroundings(family,societynature)(L1,L2)
• Applywhattheyhavelearnttotheirownselfindifferentday-to-daysettings inreallife(L3)
• Relatehumanvalueswithhumanrelationshipand humansociety.(L4)
• Justifytheneedforuniversalhumanvaluesandharmoniousexistence (L5)
• Developassociallyandecologicallyresponsibleengineers(L3,L6)

Course Topics

Thecoursehas28lecturesand14 tutorialsin5modules.Thelecturesandtutorialsareof1-hourduration.Tutorial sessions are to be used to explore and practice what has been proposed during the lecture sessions.
TheTeacher'sManualprovidestheoutlineforlecturesaswellaspracticesessions.The teacherisexpectedto present the issues to be discussed as propositions and encourage the students to have a dialogue.

UNIT I

IntroductiontoValue Education(6lecturesand3tutorialsforpracticesession)

Lecture1:RightUnderstanding,RelationshipandPhysicalFacility(HolisticDevelopmentand theRoleof Education)
Lecture2:UnderstandingValueEducationTutorial1:PracticeSessionPS1SharingaboutOneself
Lecture 3: self-exploration as the Process for Value Education
Lecture4:ContinuousHappinessandProsperity –theBasicHumanAspirationsTutorial2:PracticeSessionPS2 Exploring Human Consciousness
Lecture5:HappinessandProsperity–CurrentScenario
Lecture6:Method toFulfilltheBasicHumanAspirationsTutorial3:PracticeSessionPS3ExploringNatural Acceptance

UNIT II

Harmony in the Human Being (6 lectures and 3 tutorials for practice session)

Lecture7:UnderstandingHumanbeing astheCo-existenceof theself andthebody.
Lecture8:DistinguishingbetweentheNeedsoftheselfandthebodyTutorial4:PracticeSessionPS4Exploringthe difference of Needs of self and body

Lecture9:Thebodyas anInstrumentoftheself
Lecture10:UnderstandingHarmonyintheselfTutorial5:PracticeSessionPS5ExploringSourcesofImagination in the self
Lecture 11: Harmony of the self with the body
Lecture12:Programmetoensureself-regulation andHealthTutorial6:PracticeSessionPS6Exploring Harmonyof self with the body

UNIT III

HarmonyintheFamilyandSociety(6lecturesand3tutorialsforpracticesession) Lecture

13: Harmony in the Family – the Basic Unit of Human Interaction
Lecture14: 'Trust'–the FoundationalValueinRelationshipTutorial7:PracticeSessionPS7Exploring theFeeling of Trust
Lecture15: 'Respect'–astheRight Evaluation Tutorial8:PracticeSessionPS8ExploringtheFeelingof Respect Lecture 16: Other Feelings, Justice in Human-to-Human Relationship

Lecture17:UnderstandingHarmonyintheSociety
Lecture18:VisionfortheUniversalHumanOrder Tutorial9:PracticeSessionPS9ExploringSystemstofulfil Human Goal

UNIT IV

HarmonyintheNature/Existence(4lecturesand2tutorialsforpracticesession) Lecture

19: Understanding Harmony in the Nature
Lecture20:Interconnectedness,self-regulationandMutualFulfilment amongtheFourOrdersofNatureTutorial 10:PracticeSessionPS10ExploringtheFourOrders ofNature Lecture
21: Realizing Existence as Co-existence at All Levels
Lecture22:TheHolisticPerceptionofHarmonyin ExistenceTutorial11:PracticeSessionPS11ExploringCo- existence in Existence.

UNIT V

ImplicationsoftheHolisticUnderstanding –aLook atProfessionalEthics(6lecturesand3 tutorialsfor practice session)

Lecture23:NaturalAcceptanceofHumanValues
Lecture24:Definitivenessof(Ethical)HumanConductTutorial12:PracticeSessionPS12ExploringEthical Human Conduct
Lecture25:ABasisforHumanisticEducation,HumanisticConstitutionandUniversalHumanOrder

Lecture26:CompetenceinProfessionalEthicsTutorial13: PracticeSessionPS13ExploringHumanisticModels in Education
Lecture27:HolisticTechnologies,ProductionSystemsandManagementModels-TypicalCaseStudies Lecture 28: Strategies for Transition towards Value-based Life and Profession
Tutorial14:PracticeSessionPS14ExploringStepsofTransition towardsUniversalHumanOrder
Practice Sessions for

UNITI–IntroductiontoValueEducation

PS1 Sharing about Oneself
PS2ExploringHuman Consciousness
PS3ExploringNaturalAcceptance Practice Sessions for
UNITII –HarmonyintheHumanBeing
PS4ExploringthedifferenceofNeedsofselfandbody PS5
Exploring Sources of Imagination in the self
PS6ExploringHarmonyofselfwiththebodyPracticeSessionsfor UNIT III

– Harmony in the Family and Society

PS7ExploringtheFeelingofTrustPS8ExploringtheFeelingofRespect PS9
Exploring Systems to fulfil Human Goal
PracticeSessionsfor

UNITIV–HarmonyintheNature(Existence)

PS10 Exploring the Four Orders of Nature
PS11 Exploring Co-existence in Existence
Practice Sessions for

UNITV–ImplicationsoftheHolisticUnderstanding –aLookatProfessionalEthics PS12

Exploring Ethical Human Conduct
PS13ExploringHumanisticModelsin Education
PS14ExploringStepsofTransitiontowardsUniversalHumanOrder Readings:

Textbookand TeachersManual

a. TheTextbook

RRGaur,RAsthana, GPBagaria,AFoundationCourseinHumanValuesandProfessionalEthics, 2nd Revised Edition, ExcelBooks, New Delhi, 2019. ISBN 978-93-87034-47-1

b. TheTeacher'sManual
RRGaur,RAsthana, GPBagaria,Teachers'ManualforAFoundationCourseinHumanValuesandProfessional Ethics, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034-53-2

ReferenceBooks

1. JeevanVidya:EkParichaya,ANagaraj,JeevanVidyaPrakashan,Amarkantak,1999.
2. HumanValues,A.N.Tripathi,NewAgeIntl.Publishers,NewDelhi,2004
3. TheStoryofStuff(Book).
4. TheStoryofMyExperimentswithTruth -byMohandasKaramchandGandhi
5. Smallis Beautiful-E.FSchumacher.
6. SlowisBeautiful-CecileAndrews
7. EconomyofPermanence-JCKumarappa
8. BharatMein AngrejiRaj – PanditSunderlal
9. RediscoveringIndia-byDharampal
10. HindSwarajor IndianHomeRule-by MohandasK. Gandhi
11. IndiaWinsFreedom-MaulanaAbdulKalamAzad
12. Vivekananda-RomainRolland (English)

Mode ofConduct:

Lecturehoursaretobeusedfor interactivediscussion,placing theproposalsaboutthe topicsathandand motivating students to reflect, explore and verify them.

Tutorialhours aretobeusedforpracticesessions.

Whileanalyzinganddiscussingthetopic,thefaculty mentor'sroleisinpointingtoessentialelementsto helpin sorting them out from the surface elements. In other words, help the students explore the important or critical elements.

Inthediscussions,particularlyduringpracticesessions(tutorials),thementorencouragesthestudentto connect with one's own self and do self-observation, self-reflection and selfexploration.

Scenariosmaybeusedtoinitiatediscussion.Thestudentisencouragedtotakeup"ordinary"situations rather than"extra-ordinary"situations.Suchobservationsandtheiranalysesareshared anddiscussedwithother students and faculty mentor, in a group sitting.

Tutorials (experiments or practical) are important for the course. The difference is that the laboratory is everyday life, and practical are how you behave and work in real life. Depending on the ture of topics, worksheets, home assignmentand/oractivityareincluded. Thepractice sessions(tutorials)wouldalsoprovidesupporttoastudentin performing actions commensurate to his/her beliefs. It is intended that this would lead to development of commitment, namely behaving and working based on basic human values.

It is recommended that this content be placed before the student as it is, in the form of a basic foundation course, without including anything else or excluding any part of this content. Additional content may be offered in separate,highercourses.This courseistobetaughtbyfacultyfromevery teachingdepartment,notexclusivelyby any one department.

Teacherpreparationwith aminimum exposuretoat leastone8-dayFacultyDevelopmentProgramonUniversal Human Values is deemed essential.

OnlineResources:

1. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%201-Introduction%20to%20Value%20Education.pdf

2. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%202-Harmony%20in%20the%20Human%20Being.pdf

3. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%203-Harmony%20in%20the%20Family.pdf

4. https://fdp-si.aicte-india.org/UHV%201%20Teaching%20Material/D3-S2%20Respect%20July%2023.pdf

5. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%205-Harmony%20in%20the%20Nature%20and%20Existence.pdf

6. https://fdp-si.aicte-india.org/download/FDPTeachingMaterial/3-days%20FDPSI%20UHV%20Teaching%20Material/Day%203%20Handouts/UHV%203D%20D3-S2A%20Und%20Nature-Existence.pdf

7. https://fdp-si.aicteindia.org/UHV%20II%20Teaching%20Material/UHV%20II%20Lecture%2023-25%20Ethics%20v1.pdf

8. https://www.studocu.com/in/document/kiet-group-of-institutions/universal-humanvalues/chapter-5-holistic-understanding-of-harmony-on-professional-ethics/62490385

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COMPUTER SCIENCE AND ENGINERRING

DESIGMTHINKINGANDINNOVATION

CourseObjectives:

The objective of this course is to familiarize students with design thinking process as a tool for breakthrough innovation.Itaimstoequipstudentswithdesign thinkingskillsandignitethemindstocreateinnovativeideas, develop solutions for real-time problems.

CourseOutcomes:

• Definetheconceptsrelatedtodesignthinking.(L1,L2)
• ExplainthefundamentalsofDesignThinkingandinnovation(L1,L2)
• Applythedesignthinkingtechniquesforsolvingproblemsinvarioussectors.(L3)
• Analysetoworkinamultidisciplinaryenvironment(L4)
• Evaluatethevalueofcreativity(L5)•
Formulatespecificproblemstatementsofrealtimeissues(L3,L6) UNIT

I

IntroductiontoDesignThinking

Introduction toelementsandprinciplesofDesign,basicsofdesign-dot,line,shape,formasfundamentaldesign components.Principlesofdesign.Introductiontodesignthinking,historyofDesignThinking,Newmaterialsin Industry.

UNIT II

DesignThinkingProcessDesignthinkingprocess(empathize,analyze,idea&prototype),implementingtheprocess in driving inventions, design thinking in social innovations.Tools of design thinking - person, costumer, journey map, brainstorming, product development

Activity:Everystudentpresentstheir ideain three minutes,Everystudentcanpresentdesignprocessintheformof flow diagram or flow chart etc. Every student should explain about product development.

UNIT III

Innovation

Artofinnovation,Differencebetweeninnovationandcreativity,roleofcreativityandinnovationinorganizations- Creativity to Innovation- Teams for innovation- Measuring the impact and value of creativity.

Activity:Debateoninnovation andcreativity,Flowandplanningfromideatoinnovation,Debateonvalue-based innovation.

UNIT IV

ProductDesign

Problemformation,introductiontoproductdesign, Productstrategies,Productvalue,Productplanning, product specifications- Innovation towards product design- Case studies

Activity:Importanceof modelling,howtosetspecifications,Explainingtheirownproductdesign.

UNITV

DesignThinkinginBusinessProcesses

Design Thinking applied in Business & Strategic Innovation, Design Thinking principles that redefine business – Businesschallenges:Growth,Predictability,Change,MaintainingRelevance,Extremecompetition,Standardization. Design thinking to meet corporate needs Design thinking for Startups- Defining and testing Business Models and Business CasesDeveloping& testing prototypes.

Activity:Howtomarketourownproduct,Aboutmaintenance,Reliabilityandplanforstartup. Textbooks:

1. TimBrown,Changebydesign,HarperBollins (2009)
2. IdrisMootee,DesignThinkingforStrategicInnovation,2013,JohnWiley&Sons.

ReferenceBooks:

1. DavidLee,DesignThinkingintheClassroom,Ulyssespress
2. ShrutinNShetty,DesigntheFuture,Norton Press
3. WilliamLidwell,UniversalPrinciplesofDesign-Kritinaholden,JillButter.
4. Chesbrough.H,TheEraofOpenInnovation–2013

Online Learning Resources:

- https://nptel.ac.in/courses/110/106/110106124/
- https://nptel.ac.in/courses/109/104/109104109/
- https://swayam.gov.in/nd1_noc19_mg60/preview

ENGINEERING-WORKSHOP

CourseObjectives:
Tofamiliarizestudentswithwoodworking,sheetmetaloperations,fittingand electrical house
wiringskills

CourseOutcomes:
CO1:Identifyworkshoptoolsandtheiroperationalcapabilities.
CO2:Practiceonmanufacturingofcomponentsusingworkshoptradesincluding fitting, carpentry,foundryandwelding.
CO3:Applyfittingoperationsinvariousapplications.
CO4:ApplybasicelectricalengineeringknowledgeforHouseWiring Practice

SYLLABUS:
1. Demonstration:Safetypracticesandprecautionstobeobservedin workshop.
2. WoodWorking:Familiaritywithdifferenttypesofwoodsandtoolsusedinwood working and make following joints.
a) HalfLapjointb)MortiseandTenonjointc)CornerDovetailjointorBridle joint
3. SheetMetalWorking:Familiaritywithdifferenttypesoftoolsusedinsheetmetal working, Developments of following sheet metal job from GI sheets.
a) Tapered trayb)Conicalfunnelc)Elbowpiped)Brazing
4. Fitting:Familiaritywithdifferenttypesoftoolsusedinfittinganddo thefollowing fitting exercises.
a) V-fitb)Dovetailfitc)Semi-circularfitd)Bicycletirepuncture and change of two-wheeler tyre
5. ElectricalWiring:Familiaritywithdifferenttypesofbasicelectricalcircuitsand make thefollowing connections.
a) Parallelandseriesb)Two-wayswitchc)Godownlighting
d)Tubelighte)Threephasemotorf)Solderingofwires
6. FoundryTrade:DemonstrationandpracticeonMouldingtoolsandprocesses, Preparation of Green Sand Moulds for given Patterns.
7. WeldingShop:DemonstrationandpracticeonArcWeldingandGaswelding. Preparation of Lap joint and Butt joint.
8. Plumbing:DemonstrationandpracticeofPlumbingtools,PreparationofPipejoints with coupling for same diameter and with reducer for different diameters.

Textbooks:

1. BasicWorkshopTechnology:ManufacturingProcess,FelixW.;Independently Published,2019. Workshop Processes, Practices and Materials; Bruce J. Black, Routledge publishers, 5th Edn. 2015.
2. ACourseinWorkshopTechnologyVolI.&II,B.S.Raghuwanshi,DhanpathRai& Co., 2015 & 2017.

ReferenceBooks:

1. ElementsofWorkshopTechnology,Vol.IbyS.K.HajraChoudhury&Others, Media PromotersandPublishers,Mumbai.2007,14thedition
2. WorkshopPracticebyH.S.Bawa,Tata-McGrawHill,2004.
3. WiringEstimating,CostingandContracting;SoniP.M.&UpadhyayP.A.;Atul Prakashan, 2021-22.

ITWORKSHOP

CourseObjectives:

Tointroducetheinternalpartsofacomputer,peripherals,I/Oports, connecting cables
TodemonstrateconfiguringthesystemasDualbootbothWindowsand other Operating
SystemsViz.Linux,BOSS
Toteachbasiccommandlineinterfacecommandson Linux.
ToteachtheusageofInternetforproductivityandself-pacedlife-long learning
TointroduceCompression,MultimediaandAntivirustoolsandOffice Tools such as
Wordprocessors,SpreadsheetsandPresentationtools.
Course Outcomes:
CO1: Perform Hardwaretroubleshooting.
CO2:UnderstandHardwarecomponentsandinterdependencies. CO3: Safeguard computer systems from viruses/worms.
CO4: Document/ Presentation preparation.
CO5:Performcalculationsusingspreadsheets.
PC Hardware & Software Installation
Task1:Identifytheperipheralsofacomputer,componentsinaCPUand its functions. Draw
theblockdiagramoftheCPUalongwiththeconfigurationofeach peripheral and submit to
yourinstructor.
Task2:Everystudentshoulddisassembleandassemblethe PCbackto working condition. Lab
instructorsshouldverifytheworkandfollowitupwithaViva.Also students need to go through
thevideowhichshowstheprocessofassemblingaPC.Avideowouldbe given as part of the
coursecontent.

Task3:EverystudentshouldindividuallyinstallMSwindowsonthe personal computer. Lab
instructorshould verifythe installation andfollowitupwith aViva.
Task4:EverystudentshouldinstallLinuxonthecomputer.This computer should have
windowsinstalled.Thesystemshouldbeconfiguredasdualboot (VMWare) with both
WindowsandLinux.Labinstructorsshouldverifytheinstallationand follow it up with a Viva
Task5:EverystudentshouldinstallBOSSonthecomputer.Thesystem should be configured
asdualboot(VMWare)withbothWindowsandBOSS.Labinstructors should verify the
installationandfollowitupwithaViva Internet &
World Wide Web
Task1:Orientation&ConnectivityBootCamp:Studentsshouldget connected to their Local
AreaNetworkandaccesstheInternet.Intheprocesstheyconfigurethe TCP/IP setting. Finally
studentsshoulddemonstrate,totheinstructor,howtoaccessthewebsites and email. If there isno internet connectivity preparations need to be
madebytheinstructorstosimulatetheWWW on
the LAN.
Task2:WebBrowsers,SurfingtheWeb:Studentscustomizetheirweb browsers with the LAN
proxysettings,bookmarks,searchtoolbarsandpopupblockers.Also, plug-ins like
MacromediaFlashandJREfor appletsshouldbeconfigured.
Task3:SearchEngines&Netiquette:Studentsshouldknowwhatsearch engines are and how
tousethesearchengines.Afewtopics wouldbegiventothestudentsfor which they need to
searchonGoogle.Thisshouldbedemonstratedtotheinstructorsbythe student.
Task4:CyberHygiene:Studentswouldbeexposedtothevariousthreats on the internet and

wouldbeaskedtoconfiguretheir computertobesafeonthe internet.
They need tocustomize
theirbrowserstoblockpopups,blockactivexdownloadstoavoid viruses and/or worms.
LaTeXandWORD
Task1WordOrientation:ThementorneedstogiveanoverviewofLa TeX and Microsoft
(MS)officeorequivalent(FOSS)toolword:ImportanceofLaTeXand MS office or equivalent
(FOSS)toolWordaswordProcessors,Detailsofthefourtasksand features that would be
coveredineach,UsingLaTeXandwordAccessing,overviewoftoolbars, saving files, Using
helpandresources,rulers,format painterinword.
Task2:UsingLaTeXandWordtocreateaprojectcertificate.Featuresto be covered:-
Formattingfontsinword,DROPCAPINWORD,APPLYINGTEXTEFFECTS, using character spacing,
Bordersandcolors,InsertingHeaderandFooter,UsingDateandTime option in both La TeX
andWord.
Task3:CreatingprojectabstractFeaturestobecovered:-Formatting Styles, Inserting table,
BulletsandNumbering,ChangingTextDirection,Cellalignment, Footnote, Hyperlink,
Symbols,SpellCheck,Track Changes.
Task4:CreatingaNewsletter:Featurestobecovered:-TableofContent, Newspaper columns,
Imagesfromfilesandclipart,DrawingtoolbarandWordArt,Formatting Images, Textboxes,
ParagraphsandMailMergeinword. EXCEL
ExcelOrientation:ThementorneedstotelltheimportanceofMSoffice or equivalent (FOSS)
toolExcelasaSpreadsheettool,givethedetailsofthefourtasksand features that would be

coveredineach.UsingExcelAccessing,overviewoftoolbars,saving excel files, Using help
and resources.
Task1:CreatingaScheduler-Featurestobecovered:Gridlines,Format Cells, Summation,
autofill,FormattingText
Task2:CalculatingGPA-.Featurestobecovered:-CellReferencing, Formulaeinexcel
average,std.deviation,Charts,RenamingandInsertingworksheets, Hyperlinking,Count function,
LOOKUP/VLOOKUP

Task3:Splitcells,freezepanes,groupandoutline,Sorting,Booleanand logical operators,
Conditionalformatting
POWER POINT
Task1:Studentswillbeworkingonbasicpowerpointutilitiesandtools which help them
createbasicpowerpointpresentations.PPTOrientation,SlideLayouts, Inserting Text, Word
Art,FormattingText,BulletsandNumbering,AutoShapes,Linesand Arrows in PowerPoint.
Task2:Interactivepresentations-Hyperlinks,InsertingImages,ClipArt, Audio, Video,
Objects,TablesandCharts.
Task3:MasterLayouts(slide,template,andnotes),Typesofviews (basic, presentation, slide
slotter,notesetc),andInsertingBackground,textures,DesignTemplates, Hidden slides.
AITOOLSChatGPT
Task1:PromptEngineering:Experimentwithdifferenttypesofprompts to see how the model
responds.Tryaskingquestions,startingconversations,orevenproviding incomplete sentences
toseehowthemodelcompletes them.

Ex:Prompt:"YouareaknowledgeableAI.Pleaseanswerthefollowing question: What
isthe capitalofFrance?"
Task2:CreativeWriting:Usethemodelasawritingassistant.Provide the beginning of a story
oradescriptionofascene,andletthemodelgeneratetherestofthe content. This can be a fun
waytobrainstormcreativeideas
Ex:Prompt:"Inaworldwheregravitysuddenlystoppedworking,people started floatingupwards.Writeastoryabouthowsocietyadaptedtothisnew reality."
Task3:LanguageTranslation:Experimentwithtranslationtasksby providing a sentence in
onelanguageandaskingthemodeltotranslateitintoanotherlanguage. Compare the outputto
see howaccurateand fluentthetranslationsare.
Ex:Prompt:"TranslatethefollowingEnglishsentencetoFrench:'Hello, how are you
doingtoday?'"

ReferenceBooks:

1. ComdexInformationTechnologycoursetoolkit,VikasGupta,WILEY Dream tech, 2003
2. TheCompleteComputerupgradeandrepairbook,CherylASchmidt, WILEY Dream tech,
2013, 3rdedition
3. IntroductiontoInformationTechnology,ITLEducationSolutions limited, Pearson
Education,2012,2ndedition
4. PCHardware-AHandbook,KateJ.Chase,PHI (Microsoft)
5. LaTeXCompanion,LeslieLamport,PHI/Pearson.
6. ITEssentialsPCHardwareandSoftwareCompanionGuide,David Anfins on and Ken
Quamme.CISCOPress, PearsonEducation,3rd edition

7. ITEssentialsPCHardwareandSoftwareLabsandStudyGuide,
Patrick Regan CISCO
Press,PearsonEducation,3rdedition

MANAGERIALECONOMICSANDFINANACIALANALYSIS

CourseOutcomes:

- DefinetheconceptsrelatedtoManagerialEconomics, financialaccountingandmanagement(L2)
- Understandthefundamentalsof Economicsviz.,Demand,Production, cost, revenue and markets (L2)
- ApplytheConceptofProductioncostandrevenues foreffectiveBusinessdecision(L3)
- Analyzehowtoinvesttheircapitalandmaximizereturns(L4)
- Evaluatethecapitalbudgetingtechniques.(L5)
- Developtheaccountingstatementsand evaluatethefinancialperformanceofbusinessentity(L5)

UNIT -IManagerialEconomics

Introduction–Nature, meaning, significance, functions, andadvantages. Demand-Concept, Function, Law of Demand - Demand Elasticity- Types – Measurement. Demand Forecasting- Factors governing Forecasting, Methods. Managerial Economics and Financial Accounting and Management.

UNIT-IIProductionandCostAnalysis

Introduction – Nature, meaning, significance, functions and advantages. Production Function– Least- cost combination– Short run and long run Production Function- Isoquants and Is costs, Cost & Break-Even Analysis - Cost conceptsand Cost behaviour- Break-EvenAnalysis(BEA) - DeterminationofBreak-Even Point (Simple Problems).

UNIT-IIIBusinessOrganizationsandMarketuction–FormsofBusiness Organizations- Sole Proprietary- Partnership - Joint StockCompanies - PublicSectorEnterprises.TypesofMarkets-PerfectandImperfectCompetition-FeaturesofPerfect Competition Monopoly-MonopolisticCompetition– Oligopoly-Price-OutputDetermination -Pricing Methods and Strategies

UNIT -IVCapitalBudgeting

Introduction–Nature,meaning,significance.TypesofWorkingCapital,

Components, Sources of Short- term and Long-term Capital, Estimating Working capital requirements. Capital Budgeting– Features, Proposals, Methods and Evaluation. Projects – Pay Back Method, Accounting Rate of Return (ARR) Net Present Value (NPV) Internal Rate Return (IRR) Method (sample problems)

UNIT-VFinancialAccountingandAnalysis: Introduction– ConceptsandConventions-Double-Entry Bookkeeping,Journal,Ledger,TrialBalance-FinalAccounts(TradingAccount,ProfitandLossAccountandBalanceSheetwithsimpleadjustmenS)

IntroductiontoFinancialAnalysis-AnalysisandInterpretationofLiquidityRatios, ActivityRatios, and Capital structure Ratios and Profitability.

Textbooks:

1. Varshney&Maheswari:ManagerialEconomics,SultanChand.
2. Aryasri:BusinessEconomicsandFinancialAnalysis,4/e,MGH.

ReferenceBooks:

1. AhujaHlManagerialeconomics Schand.
2. S.A.SiddiquiandA.S.Siddiqui:ManagerialEconomicsand Financial Analysis, New Age International.
3. JosephG. NellisandDavidParker:PrinciplesofBusinessEconomics,Pearson,2/e, NewDelhi.
4. DomnickSalvatore:ManagerialEconomicsinaGlobalEconomy,Cengage.

Online Learning Resources:

https://www.slideshare.net/123ps/managerial-economics-ppt
https://www.slideshare.net/rossanz/production-and-cost-45827016
https://www.slideshare.net/darkyla/business-organizations-19917607
https://www.slideshare.net/balarajbl/market-and-classification-of-market
https://www.slideshare.net/ruchi101/capital-

budgeting-ppt-59565396
https://www.slideshare.net/ashu1983/financial-accounting

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I YearISemester

S.No	Course Code	Title	L	T	P	Credits
1	R23BS01	LinearAlgebra&Calculus	3	0	0	3
2	R23BS04T	Chemistry	3	0	0	3
3	R23ES07T	IntroductiontoProgramming	3	0	0	3
4	R23ES03	EngineeringGraphics	1	0	4	3
5	R23ES04	BasicElectrical&ElectronicsEngineering	3	0	0	3
6	R23BS04P	ChemistryLab	0	0	2	1
7	R23ES07P	ComputerProgrammingLab	0	0	3	1.5
8	R23ES05	Electrical&ElectronicsEngineeringWorkshop	0	0	3	1.5
9	R23MC02	NSS/NCC/Scouts&Guides/CommunityService	0	0	1	0.5
		Total				19.5

I YearIISemester

S.No	Course Code	Title	L	T	P	Credits
1	R23BS02	DifferentialEquationsandVectorCalculus	3	0	0	3
2	R23BS03T	EngineeringPhysics	3	0	0	3
3	R23HS01T	CommunicativeEnglish	2	0	0	3
4	R23ES01	BasicCivil&MechanicalEngineering	3	0	0	3
5	R23PC01T	Network Analysis	3	0	0	3
6	R23HS01P	CommunicativeEnglishLab	0	0	2	1
7	R23BS03P	EngineeringPhysicsLab	0	0	2	1
8	R23ES06	IT workshop	0	0	2	1
9	R23ES02	EngineeringWorkshop	0	0	3	1.5
10	R23PC01P	NetworkAnalysisAndSimulation Laboratory	0	0	3	1.5
11	R23MC01	HealthandWellness,Yogaand Sports	0	0	1	0.5
		Total				19.5

B.Tech.–IIYearI Semester

S.No	Category	Title	L	T	P	Credits
1	BS	RandomVariablesandStochastic	3	0	0	3
2	HSMC	UniversalHumanValues–UnderstandingHarmony and Ethical Human Conduct	2	1	0	3
3	ES	SignalsandSystems	3	0	0	3
4	PCC	ElectronicDevicesandCircuits	3	0	0	3
5	PCC	DigitalCircuits Design	3	0	0	3
6	PCC	ElectronicDevicesandCircuitsLab	0	0	3	1.5
7	PCC	DigitalDesign&SignalSimulationlab	0	0	3	1.5
8	SEC	PythonProgramming	0	1	2	2
9	Audit	EnvironmentalScience	2	0	0	-

	Course					
		Total	16	02	08	20

B.Tech.–IIYearII Semester

S.No	Category	Title	L	T	P	Credits
1	HSMC	**ManagerialEconomicsandFinancialAnalysis**	**2**	**0**	**0**	**2**
2	ES	**LinearControl Systems**	**3**	**0**	**0**	**3**
3	PCC	**EM WavesandTransmissionLines**	**3**	**0**	**0**	**3**
4	PCC	**AnalogCircuitsDesign**	**3**	**0**	**0**	**3**
5	PCC	**AnalogandDigitalCommunications**	**3**	**0**	**0**	**3**
6	PCC	**AnalogCircuitsDesignLab**	**0**	**0**	**3**	**1.5**
7	PCC	**AnalogandDigitalCommunications**	**0**	**0**	**3**	**1.5**
8	SEC	**SoftSkills**	**0**	**1**	**2**	**2**
9	ES	**DesignThinkingandInnovation**	**1**	**0**	**2**	**2**
		Total	**15**	**01**	**10**	**21**

NSS/NCC/SCOUTS&GUIDENCE/COMMUNITYSERVICE

CourseObjectives:

Theobjectiveof introducingthiscourseistoimpartdiscipline,character,fraternity,teamwork, social consciousness among the students and engaging them in selfless service.

CourseOutcomes: Aftercompletionofthecoursethestudentswillbeableto

CO1: Understandtheimportanceof discipline,character andservice motto.
CO2: Solvesomesocietalissuesbyapplyingacquiredknowledge,facts,andtechniques.
CO3: Explorehumanrelationshipsbyanalyzingsocialproblems.
CO4: Determine toextendtheirhelpforthefellowbeingsand downtroddenpeople.
CO5: Developleadershipskillsandcivic responsibilities.

UNITI

Orientation

GeneralOrientationonNSS/NCC/Scouts&Guides/CommunityServiceactivities,career guidance.

Activities:
i) Conducting–icebreakingsessions-expectationsfromthecourse-knowingpersonal talents and skills
ii) Conductingorientationsprogramsforthestudents –futureplans-activities-releasing road map etc.
iii) Displayingsuccessstories-motivationalbiopics-awardwinningmoviesonsocietal issues etc.
iv) Conductingtalentshowinsingingpatrioticsongs-paintings-anyothercontribution.

UNITII

Nature&Care Activities:
i) Bestoutofwaste competition.
ii) Posterandsignsmakingcompetitiontospreadenvironmental awareness.
iii) Recyclingandenvironmentalpollutionarticlewritingcompetition.
iv) OrganisingZero-wasteday.

v) DigitalEnvironmentalawarenessactivityviavarioussocialmediaplatforms.
vi) Virtualdemonstrationofdifferenteco-friendlyapproachesforsustainable living.
vii) Writea summaryonanybookrelatedtoenvironmental issues.

UNITIII

CommunityService

Activities:
i) ConductingOneDaySpecialCampinavillagecontactingvillage-arealeaders-Survey in the village, identification of problems- helping them to solve via media- authorities experts- etc.

ii) ConductingawarenessprogramsonHealth-relatedissuessuchasGeneralHealth,Mentalhealth, Spiritual Health, HIV/AIDS,
iii) ConductingconsumerAwareness.Explainingvariouslegalprovisionsetc.
iv) WomenEmpowermentProgrammes-Sexual Abuse,AdolescentHealthandPopulationEducation.
v) Anyotherprogrammesincollaborationwithlocalcharities,NGOsetc.

ReferenceBooks:

1. NirmalyaKumar Sinha&SurajitMajumder,*AText Bookof NationalServiceScheme* Vol;.I,VidyaKutirPublication,2021(ISBN978-81-952368-8-6)
2. *RedBook-NationalCadetCorps*–StandingInstructionsVolI&II,Directorate General of NCC, Ministry of Defence, New Delhi
3. DavisM.L.andCornwellD.A.,―IntroductiontoEnvironmentalEngineering‖, McGraw Hill, New York 4/e 2008
4. MastersG.M.,JosephK.andNagendranR.―IntroductiontoEnvironmental Engineering and Science‖, Pearson Education, New Delhi. 2/e 2007
5. RamAhuja.*SocialProblemsinIndia*,RawatPublications,NewDelhi.

General Guidelines:

1. InstitutesmustassignslotsintheTimetablefortheactivities.
2. Institutesarerequiredtoprovideinstructortomentor thestudents.

Evaluation Guidelines:

- Evaluatedforatotalof100 marks.
- Astudent canselect6activitiesofhis/herchoicewithaminimumof01activityper

unit.Eachactivityshallbeevaluatedbytheconcernedteacherfor15marks,totalling to 90 marks.

- Astudentshallbeevaluated by theconcernedteacherfor10marks byconducting viva

Health and Awareness:

CourseObjectives:

Themainobjectiveofintroducingthiscourseistomakethestudentsmaintaintheirmentaland physical wellness by balancing emotions in their life. It mainly enhances the essential traits required for the development of the personality.

CourseOutcomes:

Aftercompletionofthecoursethestudentwillbeableto
CO1:Understandtheimportanceofyogaandsportsfor Physical fitnessandsoundhealth.
CO2: Demonstrate an understanding of health-related fitness components.
CO3: Compareandcontrastvariousactivitiesthathelpenhancetheirhealth. **CO4:**
Assess current personal fitness levels.
CO5: DevelopPositivePersonality

UNITI

Concept of health and fitness, Nutrition and Balanced diet, basic concept of immunity Relationshipbetweendietandfitness,Globalizationanditsimpactonhealth,BodyMassIndex (BMI) of all age groups.

Activities:
i) Organizinghealthawarenessprogrammesincommunity
ii) Preparationofhealthprofile
iii) Preparationofchartforbalancedietforallagegroups

UNITII

Conceptofyoga,needforandimportanceofyoga,originandhistoryofyogainIndiancontext, classification of yoga, Physiological effects of Asanas- Pranayama and meditation, stress management and yoga, Mental health and yoga practice.

Activities:
Yogapractices –Asana,Kriya,Mudra,Bandha,Dhyana,Surya Namaskar

UNITIII

ConceptofSportsandfitness,importance,fitnesscomponents,historyofsports,Ancientand

ModernOlympics,AsiangamesandCommonwealthgames.

Activities:

i) Participationinonemajorgameandoneindividualsportviz.,Athletics,Volleyball, Basketball, Handball, Football, Badminton, Kabaddi, Kho-kho, Table tennis, Cricket etc.
Practicinggeneralandspecificwarm up,aerobics
ii) Practicingcardiorespiratoryfitness,treadmill,runtest,9minwalk,skippingand running.

ReferenceBooks:

1. GordonEdlin,EricGolanty.HealthandWellness,14thEdn.Jones&BartlettLearning, 2022
2. T.K.V.Desikachar.TheHeartofYoga:DevelopingaPersonal Practice
3. ArchieJ.Bahm.YogaSutrasofPatanjali,JainPublishingCompany,1993
4. Wiseman,JohnLofty,SASSurvivalHandbook:TheUltimateGuidetoSurviving Anywhere Third Edition, William Morrow Paperbacks, 2014
5. TheSportsRulesBook/HumanKineticswithThomasHanlon. --3rded.Human Kinetics, Inc.2014

General Guidelines:

1. InstitutesmustassignslotsintheTimetablefortheactivitiesofHealth/Sports/Yoga.
2. Institutesmustprovidefield/facilityandoffertheminimumoffivechoicesofasmany as Games/Sports.
3. Institutesarerequiredtoprovidesportsinstructor / yogateacher tomentor thestudents.

Evaluation Guidelines:

- Evaluatedforatotalof100 marks.
- Astudentcanselect6activitiesofhis/herchoicewithaminimumof01activityper unit.Eachactivityshall beevaluatedbytheconcernedteacherfor 15marks,totalling to 90 marks.
- Astudent shallbeevaluatedbytheconcernedteacherfor10marksbyconductingviva voce on the subject.

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UNIVERSALHUMANVALUES-UNDERSTANDINGHARMONY&HUMANETHICALCONDUCT

CourseObjectives:

• Tohelpthestudentsappreciatetheessentialcomplementarybetween 'VALUES'and'SKILLS'to ensure sustained happiness and prosperity which are the core aspirations of all human beings.

• To facilitate the development of a Holistic perspective among students towards life and professionaswellastowardshappinessandprosperitybasedonacorrectunderstandingofthe Human reality andthe rest of existence. Suchholistic perspective formsthe basis of Universal Human Values and movement towards value-based living in a natural way.

• To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct,trustfulandmutuallyfulfillinghumanbehaviourandmutuallyenrichinginteractionwith Nature.

CourseOutcomes:

• DefinethetermslikeNatural Acceptance,HappinessandProsperity(L1,L2)
• Identifyone'sself,andone'ssurroundings(family,societynature) (L1,L2)
• Applywhattheyhavelearnttotheir ownself indifferentday-to-daysettingsinreallife (L3)
• Relatehumanvalueswithhumanrelationshipandhumansociety.(L4)
• Justifytheneedforuniversal humanvaluesandharmoniousexistence(L5)
• Developassociallyandecologicallyresponsibleengineers(L3,L6)

Course Topics

The course has 28 lectures and 14 tutorials in 5 modules. The lectures and tutorials are of 1- hour duration.Tutorialsessionsaretobeusedtoexploreandpracticewhathasbeenproposedduringthe lecture sessions.
TheTeacher'sManualprovidestheoutlineforlecturesaswellaspracticesessions.Theteacheris expected to present theissues to be discussedas propositionsand encourage the students to have a dialogue.

UNITI

IntroductiontoValueEducation(6lectures and3tutorialsfor practice session)

Lecture1:RightUnderstanding,RelationshipandPhysicalFacility(HolisticDevelopmentandthe Role of Education)

Lecture2:UnderstandingValueEducationTutorial1:PracticeSessionPS1SharingaboutOneself Lecture 3: self-exploration as the Process for Value Education
Lecture4:ContinuousHappinessandProsperity –theBasicHumanAspirationsTutorial2:Practice Session PS2 Exploring Human Consciousness
Lecture5:HappinessandProsperity –Current Scenario
Lecture6:MethodtoFulfilltheBasicHumanAspirationsTutorial3:PracticeSessionPS3 Exploring Natural Acceptance

UNITII
HarmonyintheHumanBeing(6lectures and3tutorialsfor practicesession)

Lecture7:UnderstandingHumanbeingas theCo-existenceoftheself andthebody.
Lecture8:DistinguishingbetweentheNeedsoftheselfandthebodyTutorial4:PracticeSession PS4 Exploring the difference of Needs of self and body

Lecture9:ThebodyasanInstrumentof theself
Lecture10:UnderstandingHarmonyintheselfTutorial5:PracticeSessionPS5ExploringSources of Imagination in the self Lecture 11: Harmony of the self with the body
Lecture12:Programmetoensureself-regulationandHealthTutorial6:PracticeSessionPS6 Exploring Harmony of self with the body

UNITIII

HarmonyintheFamilyandSociety(6lecturesand3 tutorialsforpracticesession) Lecture

13: Harmony in the Family – the Basic Unit of Human Interaction
Lecture14: 'Trust' –theFoundational ValueinRelationshipTutorial 7:PracticeSessionPS7 ExploringtheFeelingof Trust
Lecture15:'Respect' –astheRightEvaluationTutorial8:PracticeSessionPS8Exploringthe Feeling of Respect
Lecture16:OtherFeelings,JusticeinHuman-to-HumanRelationship

Lecture17:UnderstandingHarmonyintheSociety
Lecture18:VisionfortheUniversalHumanOrderTutorial9:PracticeSessionPS9Exploring Systems to fulfil Human Goal

UNITIV

HarmonyintheNature/Existence(4lecturesand2tutorialsforpractice session)

Lecture19:UnderstandingHarmonyintheNature
Lecture20:Interconnectedness,self-regulationandMutualFulfilmentamongtheFourOrdersof Nature
Tutorial 10: Practice Session PS10 Exploring the Four Orders of Nature
Lecture21: RealizingExistenceasCo-existenceat AllLevels
Lecture22:TheHolisticPerceptionofHarmonyinExistenceTutorial11:PracticeSessionPS11 Exploring Co-existence in Existence.

UNITV

ImplicationsoftheHolisticUnderstanding –aLookatProfessionalEthics(6lecturesand3 tutorials for practice session)

Lecture23:NaturalAcceptanceofHuman Values
Lecture24:Definitivenessof(Ethical)HumanConductTutorial12:PracticeSessionPS12 Exploring Ethical Human Conduct
Lecture25:ABasisforHumanisticEducation,HumanisticConstitutionandUniversalHuman Order
Lecture26:CompetenceinProfessionalEthicsTutorial13:PracticeSessionPS13Exploring Humanistic Models in Education
Lecture27:HolisticTechnologies,ProductionSystemsandManagementModels-TypicalCase Studies
Lecture28:Strategiesfor TransitiontowardsValue-basedLifeand Profession
Tutorial14:PracticeSessionPS14ExploringStepsofTransitiontowardsUniversalHumanOrder
Practice Sessions for

UNITI–IntroductiontoValueEducation PS1

Sharing about Oneself
PS2ExploringHumanConsciousness
PS3ExploringNaturalAcceptance Practice Sessions for
UNITII– HarmonyintheHumanBeing
PS4ExploringthedifferenceofNeedsofselfandbody PS5
Exploring Sources of Imagination in the self
PS6ExploringHarmonyofselfwiththebodyPracticeSessionsfor UNIT III –

Harmony in the Family and Society

PS7ExploringtheFeelingofTrustPS8ExploringtheFeelingofRespect PS9
Exploring Systems to fulfil Human Goal

PracticeSessionsfor

UNITIV– Harmony in the Nature(Existence)

PS10 Exploring the Four Orders of Nature
PS11 Exploring Co-existence in Existence
Practice Sessions for

UNITV–ImplicationsoftheHolisticUnderstanding –aLookatProfessionalEthics PS12

Exploring Ethical Human Conduct
PS13ExploringHumanisticModelsinEducation
PS14ExploringStepsofTransitiontowardsUniversalHumanOrder Readings:

TextbookandTeachersManual

a. The Textbook

RRGaur,RAsthana,GPBagaria,AFoundationCourseinHumanValuesandProfessional Ethics, 2nd Revised Edition, ExcelBooks, New Delhi, 2019. ISBN 978-93-87034-47-1

b. The Teacher'sManual
RRGaur,RAsthana,GPBagaria,Teachers'Manual forAFoundationCourseinHumanValues and Professional Ethics, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93- 87034-53-2

ReferenceBooks

1. JeevanVidya:EkParichaya,ANagaraj,JeevanVidyaPrakashan,Amarkantak, 1999.
2. HumanValues,A.N.Tripathi,NewAgeIntl.Publishers,NewDelhi,2004
3. TheStoryof Stuff (Book).
4. TheStoryof MyExperimentswith Truth-byMohandasKaramchand Gandhi
5. SmallisBeautiful-E.FSchumacher.
6. Slowis Beautiful-CecileAndrews
7. EconomyofPermanence-J C Kumarappa
8. BharatMeinAngrejiRaj– PanditSunderlal
9. Rediscovering India-by Dharampal
10. HindSwaraj or IndianHomeRule-byMohandasK.Gandhi

11. IndiaWinsFreedom-MaulanaAbdulKalam Azad
12. Vivekananda-RomainRolland(English)

Mode of Conduct:

Lecturehoursaretobeusedforinteractivediscussion,placingtheproposalsaboutthetopicsat hand and motivating students to reflect, explore and verify them.

Tutorialhoursaretobeusedforpractice sessions.

While analyzing and discussing the topic, the faculty mentor's role is in pointing to essential elements to helpinsortingthem outfromthesurfaceelements.Inotherwords,helpthestudentsexploretheimportant or critical elements.

Inthediscussions,particularlyduringpracticesessions(tutorials),thementorencouragesthe studenttoconnect withone'sownselfanddoself-observation,self-reflectionandselfexploration.

Scenarios may be used to initiate discussion. The student is encouraged to take up "ordinary" situationsratherthan"extra-ordinary"situations.Suchobservationsandtheiranalysesareshared and discussed with other students and faculty mentor, in a group sitting.

Tutorials (experiments or practical) are important for the course. The difference is that the laboratory is everyday life, and practical are how you behave and work in real life. Depending on thetureoftopics,worksheets,homeassignmentand/oractivity areincluded.Thepracticesessions (tutorials) would also provide support to a student in performing actions commensurate to his/her beliefs. It is intended that this would lead to development of commitment, namely behaving and working based on basic human values.

Itisrecommendedthatthiscontentbeplacedbeforethestudentasitis,intheformofabasic foundation course, without including anything else or excluding any part of this content. Additionalcontentmaybeofferedinseparate,highercourses.This courseistobetaughtby faculty from every teaching department, not exclusively by any one department.

Teacherpreparationwith aminimum exposuretoat leastone8-dayFacultyDevelopmentProgramonUniversal Human Values is deemed essential.

OnlineResources:

1. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%201-Introduction%20to%20Value%20Education.pdf

1. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%202-Harmony%20in%20the%20Human%20Being.pdf

3. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%203-Harmony%20in%20the%20Family.pdf

4. https://fdp-si.aicte-india.org/UHV%201%20Teaching%20Material/D3-S2%20Respect%20July%2023.pdf

5. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%205-Harmony%20in%20the%20Nature%20and%20Existence.pdf

6. https://fdp-si.aicte-india.org/download/FDPTeachingMaterial/3-days%20FDPSI%20UHV%20Teaching%20Material/Day%203%20Handouts/UHV%203D%20D3-S2A%20Und%20Nature-Existence.pdf

7. https://fdp-si.aicteindia.org/UHV%20II%20Teaching%20Material/UHV%20II%20Lecture%2023-25%20Ethics%20v1.pdf

8. https://www.studocu.com/in/document/kiet-group-of-institutions/universal-humanvalues/chapter-5-holistic-understanding-of-harmony-on-professional-ethics/62490385

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Gurajada,Vizianagaram–533003,
ELECTRONICS&COMMUNICATIONENGINERRING

DESIGMTHINKINGANDINNOVATION

CourseObjectives:

The objective of this course is to familiarize students with design thinking process as a tool for breakthroughinnovation.Itaimstoequipstudentswithdesignthinkingskillsandignitethe minds to create innovative ideas, develop solutions for real-time problems.

CourseOutcomes:

• Definetheconceptsrelatedtodesignthinking.(L1,L2)
• Explainthefundamentalsof Design Thinkingandinnovation(L1, L2)
• Applythedesignthinkingtechniquesforsolvingproblemsinvarioussectors. (L3)
• Analysetoworkinamultidisciplinaryenvironment (L4)
• Evaluatethevalueof creativity(L5)•
Formulatespecificproblemstatementsofrealtimeissues(L3,L6) UNIT I

Introductionto Design Thinking

Introduction to elements and principles of Design, basics of design-dot, line, shape, form as fundamentaldesigncomponents.Principlesofdesign.Introductiontodesignthinking,historyof Design Thinking, New materials in Industry.

UNITII

Design Thinking Process Design thinking process (empathize, analyze, idea & prototype), implementingtheprocessindrivinginventions,designthinkinginsocialinnovations.Toolsof design thinking - person, costumer, journey map, brainstorming, product development

Activity:Everystudentpresentstheirideainthreeminutes,Everystudentcanpresentdesignprocess in the form of flow diagram or flow chart etc. Every student should explain about product development.

UNITIII

Innovation

Artofinnovation,Differencebetweeninnovationandcreativity,roleof creativityandinnovationi

-Measuring theimpactand value ofcreativity.

Activity:Debateoninnovationandcreativity,Flowandplanningfromideatoinnovation,Debateon value-based innovation.

UNITIV

ProductDesign

Problemformation,introductiontoproductdesign,Productstrategies,Productvalue,Product planning, product specifications- Innovation towards product design- Case studies

Activity:Importanceofmodelling,howtosetspecifications,Explainingtheirownproductdesign. UNIT V

DesignThinkinginBusinessProcesses

DesignThinkingappliedinBusiness&StrategicInnovation,DesignThinkingprinciplesthatredefine business – Business challenges: Growth, Predictability, Change, Maintaining Relevance, Extreme competition, Standardization. Design thinking to meet corporate needs Design thinking for Startups- Defining and testing Business Models and Business CasesDeveloping& testing prototypes.

Activity:Howtomarketourownproduct,Aboutmaintenance,Reliabilityandplanforstartup. Textbooks:

1. TimBrown,Changebydesign,HarperBollins (2009)
2. IdrisMootee,DesignThinkingfor Strategic Innovation,2013,JohnWiley&Sons.

ReferenceBooks:

1. DavidLee,DesignThinkingintheClassroom,Ulysses press
2. ShrutinNShetty,DesigntheFuture,Norton Press
3. WilliamLidwell,UniversalPrinciplesofDesign-Kritinaholden,JillButter.
4. Chesbrough.H,TheEraofOpenInnovation–2013

Online LearningResources:

- https://nptel.ac.in/courses/109/104/109104109/
- https://swayam.gov.in/nd1_noc19_mg60/preview

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
AndhraPradesh,India
DEPARTMENTOFELECTRONICSANDELECTRICAL & ENGINEERING

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
ELECTRICALANDELECTRONICSENGINEERING

IB.TechI Semester

IYearI Semester						
S.No.	**CourseCode**	**CourseName**	**L**	**T**	**P**	**Credits**
1.	R23BS01	LinearAlgebra&Calculus	3	0	0	3
2.	R23BS04T	Chemistry	3	0	0	3
3.	R23ES07T	IntroductiontoProgramming	3	0	0	3
4.	R23ES03	EngineeringGraphics	1	0	4	3
5.	R23ES04	BasicElectrical&ElectronicsEngineering	3	0	0	3
6.	R23BS04P	ChemistryLab	0	0	2	1
7.	R23ES07P	ComputerProgrammingLab	0	0	3	1.5
8.	R23ES05	Electrical&ElectronicsEngineeringWorkshop	0	0	3	1.5
9.	R23MC02	NSS/NCC/Scouts&Guides/CommunityService	0	0	1	0.5
		Total				**19.5**

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ELECTRICALANDELECTRONICSENGINEERING

IB.TechIISemester

I YearIISemester						
S.No.	**CourseCode**	**CourseName**	**L**	**T**	**P**	**Credits**
1.	R23BS02	DifferentialEquationsandVectorCalculus	3	0	0	3
2.	R23BS03T	EngineeringPhysics	3	0	0	3
3.	R23HS01T	CommunicativeEnglish	2	0	0	2
4.	R23ES01	BasicCivil&MechanicalEngineering	3	0	0	3
5.	R23PC01T	ElectricalCircuitAnalysis-I	3	0	0	3
6.	R23HS01P	CommunicativeEnglishLab	0	0	2	1
7.	R23BS03P	EngineeringPhysicsLab	0	0	2	1
8.	R23ES06	ITWorkshop	0	0	2	1
9.	R23ES02	EngineeringWorkshop	0	0	3	1.5
10.	R23PC01P	ElectricalCircuitsLab	0	0	3	1.5
11.	R23MC01	HealthandWellness,YogaandSports	0	0	1	0.5
		Total				**20.5**

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
ELECTRICALANDELECTRONICSENGINEERING

B.Tech.IIYear-ISemester

S.No.	Category	Title	L	T	P	Credits
1	BS	ComplexVariables&Numerical Methods	3	0	0	3
2	HSMC	UniversalHumanValues–UnderstandingHarmonyand EthicalHumanConduct	2	1	0	3
3	EngineeringScience	ElectromagneticFieldTheory	3	0	0	3
4	ProfessionalCore	ElectricalCircuitAnalysis-II	3	0	0	3
5	ProfessionalCore	DCMachines&Transformers	3	0	0	3
6	ProfessionalCore	ElectricalCircuitAnalysis-IIand SimulationLab	0	0	3	1.5
7	ProfessionalCore	DCMachines&TransformersLab	0	0	3	1.5
8	SkillEnhancement Course	DataStructuresLab	0	1	2	2
9	AuditCourse	EnvironmentalScience	2	0	0	-
Total			**15**	**2**	**10**	**20**

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
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ELECTRICALANDELECTRONICSENGINEERING

B.Tech.IIYear-IISemester

S.No.	Category	Title	L	T	P	Credits
1	ManagementCourse-I	ManagerialEconomics& FinancialAnalysis	2	0	0	2
2	Engineering Science/BasicScience	AnalogCircuits	3	0	0	3
3	ProfessionalCore	PowerSystems-I	3	0	0	3
4	ProfessionalCore	InductionandSynchronous Machines	3	0	0	3
5	ProfessionalCore	ControlSystems	3	0	0	3
6	ProfessionalCore	InductionandSynchronous MachinesLab	0	0	3	1.5
7	ProfessionalCore	ControlSystemsLab	0	0	3	1.5
8	SkillEnhancementcourse	PythonProgrammingLab	0	1	2	2
9	Engineering Science	DesignThinking & Innovation	1	0	2	2
Total			**15**	**1**	**10**	**21**
MandatoryCommunityServiceProjectInternshipof08weeksdurationduringsummervacation						

NSS/NCC/SCOUTS&GUIDENCE/COMMUNITYSERVICE

CourseObjectives:

Theobjectiveofintroducingthiscourseistoimpartdiscipline,character,fraternity, teamwork, social consciousness among the students and engaging them in selfless service.

CourseOutcomes: Aftercompletionofthecoursethestudentswillbeableto

CO1: Understandtheimportanceof discipline,character andservice motto.
CO2: Solvesomesocietalissuesbyapplyingacquiredknowledge,facts,andtechniques.
CO3: Explorehumanrelationshipsbyanalyzingsocialproblems.
CO4: Determine toextendtheirhelpforthefellowbeingsand downtroddenpeople.
CO5: Developleadershipskillsandcivic responsibilities.

UNITI

Orientation

GeneralOrientationonNSS/NCC/Scouts&Guides/CommunityServiceactivities,career guidance.

Activities:
i) Conducting–icebreakingsessions-expectationsfromthecourse-knowingpersonal talents and skills
ii) Conductingorientationsprogramsforthestudents –futureplans-activities-releasing road map etc.
iii) Displayingsuccessstories-motivationalbiopics-awardwinningmoviesonsocietal issues etc.
iv) Conductingtalentshowinsingingpatrioticsongs-paintings-anyothercontribution.

UNITII

Nature&Care

Activities:
i) Bestoutofwaste competition.
ii) Posterandsignsmakingcompetitiontospreadenvironmental awareness.
iii) Recyclingandenvironmentalpollutionarticlewritingcompetition.
iv) OrganisingZero-wasteday.
v) DigitalEnvironmentalawarenessactivityviavarioussocialmediaplatforms.
vi) Virtualdemonstrationofdifferenteco-friendlyapproachesforsustainable living.
vii) Writea summaryonanybookrelatedtoenvironmental issues.

UNITIII

CommunityService

Activities:
i) ConductingOneDaySpecialCampinavillagecontactingvillage-arealeaders-Survey in the village, identification of problems- helping them to solve via media- authorities experts- etc.

ii) ConductingawarenessprogramsonHealth-relatedissuessuchasGeneralHealth,Mentalhealth, Spiritual Health, HIV/AIDS,
iii) ConductingconsumerAwareness.Explainingvariouslegalprovisionsetc.
iv) WomenEmpowermentProgrammes-Sexual Abuse,AdolescentHealthandPopulationEducation.
v) Anyotherprogrammesincollaborationwithlocalcharities,NGOsetc.

ReferenceBooks:

1. NirmalyaKumar Sinha&SurajitMajumder,*AText Bookof NationalServiceScheme* Vol;.I,VidyaKutirPublication,2021(ISBN978-81-952368-8-6)
2. *RedBook-NationalCadetCorps*–StandingInstructionsVolI&II,Directorate General of NCC, Ministry of Defence, New Delhi
3. DavisM.L.andCornwellD.A.,―IntroductiontoEnvironmentalEngineering‖, McGraw Hill, New York 4/e 2008
4. MastersG.M.,JosephK.andNagendranR.―IntroductiontoEnvironmental Engineering and Science‖, Pearson Education, New Delhi. 2/e 2007
5. RamAhuja.*SocialProblemsinIndia*,RawatPublications,NewDelhi.

General Guidelines:

1. InstitutesmustassignslotsintheTimetablefortheactivities.
2. Institutesarerequiredtoprovideinstructortomentor thestudents.

Evaluation Guidelines:

- Evaluatedforatotalof100 marks.
- Astudentcanselect6activitiesofhis/herchoicewithaminimumof01activityper unit.Eachactivityshall beevaluatedbytheconcernedteacherfor 15marks,totalling to 90 marks.
- Astudentshallbeevaluated by theconcernedteacherfor10marks byconducting viva

Health and Awareness:

CourseObjectives:

Themainobjectiveofintroducingthiscourseistomakethestudentsmaintaintheirmentaland physical wellness by balancing emotions in their life. It mainly enhances the essential traits required for the development of the personality.

CourseOutcomes:

Aftercompletionofthecoursethestudentwillbeableto
CO1:Understandtheimportanceofyogaandsportsfor Physical fitnessandsoundhealth.
CO2: Demonstrate an understanding of health-related fitness components.
CO3: Compareandcontrastvariousactivitiesthathelpenhancetheirhealth. **CO4:**
Assess current personal fitness levels.
CO5: DevelopPositivePersonality

UNITI

Concept of health and fitness, Nutrition and Balanced diet, basic concept of immunity Relationshipbetweendietandfitness,Globalizationanditsimpactonhealth,BodyMassIndex (BMI) of all age groups.

Activities:
i) Organizinghealthawarenessprogrammesincommunity
ii) Preparationofhealthprofile
iii) Preparationofchartforbalancedietforallagegroups

UNITII

Conceptofyoga,needforandimportanceofyoga,originandhistoryofyogainIndiancontext, classification of yoga, Physiological effects of Asanas- Pranayama and meditation, stress management and yoga, Mental health and yoga practice.

Activities:
Yogapractices –Asana,Kriya,Mudra,Bandha,Dhyana,Surya Namaskar

UNITIII

ConceptofSportsandfitness,importance,fitnesscomponents,historyofsports,Ancientand

ModernOlympics,AsiangamesandCommonwealthgames.

Activities:

i) Participationinonemajorgameandoneindividualsportviz.,Athletics,Volleyball, Basketball, Handball, Football, Badminton, Kabaddi, Kho-kho, Table tennis, Cricket etc.
Practicinggeneralandspecificwarm up,aerobics
ii) Practicingcardiorespiratoryfitness,treadmill,runtest,9minwalk,skippingand running.

ReferenceBooks:

1. GordonEdlin,EricGolanty.HealthandWellness,14thEdn.Jones&BartlettLearning, 2022
2. T.K.V.Desikachar.TheHeartofYoga:DevelopingaPersonal Practice
3. ArchieJ.Bahm.YogaSutrasofPatanjali,JainPublishingCompany,1993
4. Wiseman,JohnLofty,SASSurvivalHandbook:TheUltimateGuidetoSurviving Anywhere Third Edition, William Morrow Paperbacks, 2014
5. TheSportsRulesBook/HumanKineticswithThomasHanlon. --3rded.Human Kinetics, Inc.2014

General Guidelines:

1. InstitutesmustassignslotsintheTimetablefortheactivitiesofHealth/Sports/Yoga.
2. Institutesmustprovidefield/facilityandoffertheminimumoffivechoicesofasmany as Games/Sports.
3. Institutesarerequiredtoprovidesportsinstructor / yogateacher tomentor thestudents.

Evaluation Guidelines:

- Evaluatedforatotalof100 marks.
- Astudentcanselect6activitiesofhis/herchoicewithaminimumof01activityper unit.Eachactivityshall beevaluatedbytheconcernedteacherfor 15marks,totalling to 90 marks.
- Astudent shallbeevaluatedbytheconcernedteacherfor10marksbyconductingviva voce on the subject.

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
ELECTRICALANDELECTRONICSENGINEERING

UNIVERSALHUMANVALUES-UNDERSTANDINGHARMONY&HUMANETHICALCONDUCT

CourseObjectives:

• Tohelpthestudentsappreciatetheessentialcomplementarybetween'VALUES'and'SKILLS'to ensure sustained happiness and prosperity which are the core aspirations of all human beings.

• To facilitate the development of a Holistic perspective among students towards life and professionaswellastowardshappinessandprosperitybasedonacorrectunderstandingofthe Human reality andthe rest of existence. Suchholistic perspective formsthe basis of Universal Human Values and movement towards value-based living in a natural way.

• To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct,trustfulandmutuallyfulfillinghumanbehaviourandmutuallyenrichinginteractionwith Nature.

CourseOutcomes:

• DefinethetermslikeNatural Acceptance,HappinessandProsperity(L1,L2)
• Identifyone'sself,andone'ssurroundings(family,societynature) (L1,L2)
• Applywhattheyhavelearnttotheir ownself indifferentday-to-daysettingsinreallife (L3)
• Relatehumanvalueswithhumanrelationshipandhumansociety.(L4)
• Justifytheneedforuniversal humanvaluesandharmoniousexistence(L5)
• Developassociallyandecologicallyresponsibleengineers(L3,L6)

Course Topics

The course has 28 lectures and 14 tutorials in 5 modules. The lectures and tutorials are of 1- hour duration.Tutorialsessionsaretobeusedtoexploreandpracticewhathasbeenproposedduringthe lecture sessions.
TheTeacher'sManualprovidestheoutlineforlecturesaswellaspracticesessions.Theteacheris expected to present theissues to be discussedas propositionsand encourage the students to have a dialogue.

UNITI

IntroductiontoValueEducation(6lectures and3tutorialsfor practice session)

Lecture1:RightUnderstanding,RelationshipandPhysicalFacility(HolisticDevelopmentandthe Role of Education)

Lecture2:UnderstandingValueEducationTutorial1:PracticeSessionPS1SharingaboutOneself Lecture 3: self-exploration as the Process for Value Education
Lecture4:ContinuousHappinessandProsperity –theBasicHumanAspirationsTutorial2:Practice Session PS2 Exploring Human Consciousness
Lecture5:HappinessandProsperity –Current Scenario
Lecture6:MethodtoFulfilltheBasicHumanAspirationsTutorial3:PracticeSessionPS3 Exploring Natural Acceptance

UNITII
HarmonyintheHumanBeing(6lectures and3tutorialsfor practicesession)

Lecture7:UnderstandingHumanbeingas theCo-existenceoftheself andthebody.
Lecture8:DistinguishingbetweentheNeedsoftheselfandthebody Tutorial4:PracticeSession PS4 Exploring the difference of Needs of self and body

Lecture9:ThebodyasanInstrumentof theself
Lecture10:UnderstandingHarmonyintheselfTutorial5:PracticeSessionPS5ExploringSources of Imagination in the self Lecture 11: Harmony of the self with the body
Lecture12:Programmetoensureself-regulationandHealthTutorial6:PracticeSessionPS6 Exploring Harmony of self with the body

UNITIII

HarmonyintheFamilyandSociety(6lecturesand3tutorialsforpracticesession) Lecture

13: Harmony in the Family – the Basic Unit of Human Interaction
Lecture14: 'Trust' –theFoundational ValueinRelationshipTutorial 7:PracticeSessionPS7 ExploringtheFeelingof Trust
Lecture15:'Respect' –astheRightEvaluationTutorial8:PracticeSessionPS8Exploringthe Feeling of Respect
Lecture16:OtherFeelings,JusticeinHuman-to-HumanRelationship

Lecture17:UnderstandingHarmonyintheSociety
Lecture18:VisionfortheUniversalHumanOrderTutorial9:PracticeSessionPS9Exploring Systems to fulfil Human Goal

UNITIV

HarmonyintheNature/Existence(4lecturesand2tutorialsforpractice session)

Lecture19:UnderstandingHarmonyintheNature
Lecture20:Interconnectedness,self-regulationandMutualFulfilmentamongtheFourOrdersof Nature
Tutorial 10: Practice Session PS10 Exploring the Four Orders of Nature
Lecture21: RealizingExistenceasCo-existenceat AllLevels
Lecture22:TheHolisticPerceptionofHarmonyinExistenceTutorial11:PracticeSessionPS11 Exploring Co-existence in Existence.

UNITV

ImplicationsoftheHolisticUnderstanding –aLookatProfessionalEthics(6lecturesand3 tutorials for practice session)

Lecture23:NaturalAcceptanceofHuman Values
Lecture24:Definitivenessof(Ethical)HumanConductTutorial12:PracticeSessionPS12 Exploring Ethical Human Conduct
Lecture25:ABasisforHumanisticEducation,HumanisticConstitutionandUniversalHuman Order
Lecture26:CompetenceinProfessionalEthicsTutorial13:PracticeSessionPS13Exploring Humanistic Models in Education
Lecture27:HolisticTechnologies,ProductionSystemsandManagementModels-TypicalCase Studies
Lecture28:Strategiesfor TransitiontowardsValue-basedLifeand Profession
Tutorial14:PracticeSessionPS14ExploringStepsofTransitiontowardsUniversalHumanOrder
Practice Sessions for

UNITI–IntroductiontoValueEducation PS1

Sharing about Oneself
PS2ExploringHumanConsciousness
PS3ExploringNaturalAcceptance Practice Sessions for
UNITII– HarmonyintheHumanBeing
PS4Exploringthedifferenceof Needsofselfandbody PS5
Exploring Sources of Imagination in the self
PS6ExploringHarmonyofselfwiththebodyPracticeSessionsfor UNIT III –

Harmony in the Family and Society

PS7ExploringtheFeelingofTrustPS8ExploringtheFeelingofRespect PS9
Exploring Systems to fulfil Human Goal

PracticeSessionsfor

UNITIV– Harmony in the Nature (Existence)

PS10 Exploring the Four Orders of Nature
PS11 Exploring Co-existence in Existence
Practice Sessions for

UNITV–ImplicationsoftheHolisticUnderstanding –aLookatProfessionalEthics PS12

Exploring Ethical Human Conduct
PS13ExploringHumanisticModelsinEducation
PS14ExploringStepsofTransitiontowardsUniversalHumanOrder Readings:

TextbookandTeachersManual

a. The Textbook

RRGaur,RAsthana,GPBagaria,AFoundationCourseinHumanValuesandProfessional Ethics, 2nd Revised Edition, ExcelBooks, New Delhi, 2019. ISBN 978-93-87034-47-1

b. The Teacher'sManual
RRGaur,RAsthana,GPBagaria,Teachers'Manual forAFoundationCourseinHumanValues and Professional Ethics, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93- 87034-53-2

ReferenceBooks

1. JeevanVidya:EkParichaya,ANagaraj,JeevanVidyaPrakashan,Amarkantak, 1999.
2. HumanValues,A.N.Tripathi,NewAgeIntl.Publishers,NewDelhi,2004
3. TheStoryof Stuff (Book).
4. TheStoryof MyExperimentswith Truth-byMohandasKaramchand Gandhi
5. SmallisBeautiful-E.FSchumacher.
6. Slowis Beautiful-CecileAndrews
7. EconomyofPermanence-J C Kumarappa
8. BharatMeinAngrejiRaj– PanditSunderlal
9. Rediscovering India-by Dharampal
10. HindSwaraj or IndianHomeRule-byMohandasK.Gandhi

11. IndiaWinsFreedom-MaulanaAbdulKalam Azad
12. Vivekananda-RomainRolland(English)

Mode of Conduct:

Lecturehoursaretobeusedforinteractivediscussion,placingtheproposalsaboutthetopicsat hand and motivating students to reflect, explore and verify them.

Tutorialhoursaretobeusedforpractice sessions.

While analyzing and discussing the topic, the faculty mentor's role is in pointing to essential elements to helpinsortingthem outfromthesurfaceelements.Inotherwords,helpthestudentsexploretheimportant or critical elements.

Inthediscussions,particularlyduringpracticesessions(tutorials),thementorencouragesthe studenttoconnect withone'sownselfanddoself-observation,self-reflectionandselfexploration.

Scenarios may be used to initiate discussion. The student is encouraged to take up "ordinary" situationsratherthan"extra-ordinary"situations.Suchobservationsandtheiranalysesareshared and discussed with other students and faculty mentor, in a group sitting.

Tutorials (experiments or practical) are important for the course. The difference is that the laboratory is everyday life, and practical are how you behave and work in real life. Depending on thetureoftopics,worksheets,homeassignmentand/oractivity areincluded.Thepracticesessions (tutorials) would also provide support to a student in performing actions commensurate to his/her beliefs. It is intended that this would lead to development of commitment, namely behaving and working based on basic human values.

Itisrecommendedthatthiscontentbeplacedbeforethestudentasitis,intheformofabasic foundation course, without including anything else or excluding any part of this content. Additionalcontentmaybeofferedinseparate,highercourses.This courseistobetaughtby faculty from every teaching department, not exclusively by any one department.

Teacherpreparationwith aminimum exposuretoat leastone8-dayFacultyDevelopmentProgramonUniversal Human Values is deemed essential.

OnlineResources:

1. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%201-Introduction%20to%20Value%20Education.pdf

1. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%202-Harmony%20in%20the%20Human%20Being.pdf

3.https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%203-Harmony%20in%20the%20Family.pdf

4.https://fdp-si.aicte-india.org/UHV%201%20Teaching%20Material/D3-S2%20Respect%20July%2023.pdf

5. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%205-Harmony%20in%20the%20Nature%20and%20Existence.pdf

6. https://fdp-si.aicte-india.org/download/FDPTeachingMaterial/3-days%20FDPSI%20UHV%20Teaching%20Material/Day%203%20Handouts/UHV%203D%20D3-S2A%20Und%20Nature-Existence.pdf

7. https://fdp-si.aicteindia.org/UHV%20II%20Teaching%20Material/UHV%20II%20Lecture%2023-25%20Ethics%20v1.pdf

8. https://www.studocu.com/in/document/kiet-group-of-institutions/universal-humanvalues/chapter-5-holistic-understanding-of-harmony-on-professional-ethics/62490385

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
ELECTRICALANDELECTRONICSENGINEERING

DESIGMTHINKINGANDINNOVATION

CourseObjectives:

The objective of this course is to familiarize students with design thinking process as a tool for breakthroughinnovation.Itaimstoequipstudentswithdesignthinkingskillsandignitetheminds to create innovative ideas, develop solutions for real-time problems.

CourseOutcomes:

• Definetheconceptsrelatedtodesignthinking.(L1,L2)
• Explainthefundamentalsof Design Thinkingandinnovation(L1, L2)
• Applythedesignthinkingtechniquesforsolvingproblemsinvarioussectors. (L3)
• Analysetoworkinamultidisciplinaryenvironment (L4)
• Evaluatethevalueof creativity(L5)•
Formulatespecificproblemstatementsofrealtimeissues(L3,L6) UNIT I

Introductionto Design Thinking

Introduction to elements and principles of Design, basics of design-dot, line, shape, form as fundamentaldesigncomponents.Principlesofdesign.Introductiontodesignthinking,historyof Design Thinking, New materials in Industry.

UNITII

Design Thinking Process Design thinking process (empathize, analyze, idea & prototype), implementingtheprocessindrivinginventions,designthinkinginsocialinnovations.Toolsof design thinking - person, costumer, journey map, brainstorming, product development

Activity:Everystudentpresentstheirideainthreeminutes,Everystudentcanpresentdesignprocess in the form of flow diagram or flow chart etc. Every student should explain about product development.

UNITIII

Innovation

Artofinnovation,Differencebetweeninnovationandcreativity,roleof creativityandinnovationi

-Measuring theimpactand value ofcreativity.

Activity:Debateoninnovationandcreativity,Flowandplanningfromideatoinnovation,Debateon value-based innovation.

UNITIV

ProductDesign

Problemformation,introductiontoproductdesign,Productstrategies,Productvalue,Product planning, product specifications- Innovation towards product design- Case studies

Activity:Importanceofmodelling,howtosetspecifications,Explainingtheirownproductdesign. UNIT V

DesignThinkinginBusinessProcesses

DesignThinkingappliedinBusiness&StrategicInnovation,DesignThinkingprinciplesthatredefine business – Business challenges: Growth, Predictability, Change, Maintaining Relevance, Extreme competition, Standardization. Design thinking to meet corporate needs Design thinking for Startups- Defining and testing Business Models and Business CasesDeveloping& testing prototypes.

Activity:Howtomarketourownproduct,Aboutmaintenance,Reliabilityandplanforstartup. Textbooks:

1. TimBrown,Changebydesign,HarperBollins (2009)
2. IdrisMootee,DesignThinkingfor Strategic Innovation,2013,JohnWiley&Sons.

ReferenceBooks:

1. DavidLee,DesignThinkingintheClassroom,Ulysses press
2. ShrutinNShetty,DesigntheFuture,Norton Press
3. WilliamLidwell,UniversalPrinciplesofDesign-Kritinaholden,JillButter.
4. Chesbrough.H,TheEraofOpenInnovation–2013

Online LearningResources:

- https://nptel.ac.in/courses/109/104/109104109/
- https://swayam.gov.in/nd1_noc19_mg60/preview

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
COMPUTERSCIENCEANDENGINERRING

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JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
MECHANICALENGINEERING

IB.TechI Semester

IYearI Semester						
S.No.	**CourseCode**	**CourseName**	**L**	**T**	**P**	**Credits**
1.	R23BS01	LinearAlgebra&Calculus	3	0	0	3
2.	R23BS04T	Chemistry	3	0	0	3
3.	R23ES07T	IntroductiontoProgramming	3	0	0	3
4.	R23ES03	EngineeringGraphics	1	0	4	3
5.	R23ES04	BasicElectrical&ElectronicsEngineering	3	0	0	3
6.	R23BS04P	ChemistryLab	0	0	2	1
7.	R23ES07P	ComputerProgrammingLab	0	0	3	1.5
8.	R23ES05	Electrical&ElectronicsEngineeringWorkshop	0	0	3	1.5
9.	R23MC02	NSS/NCC/Scouts&Guides/CommunityService	0	0	1	0.5
		Total				**19.5**

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MECHANICALENGINEERING

IB.TechIISemester

I YearIISemester						
S.No.	**CourseCode**	**CourseName**	**L**	**T**	**P**	**Credits**
1.	R23BS02	DifferentialEquationsandVectorCalculus	3	0	0	3
2.	R23BS03T	EngineeringPhysics	3	0	0	3
3.	R23HS01T	CommunicativeEnglish	2	0	0	2
4.	R23ES01	BasicCivil&MechanicalEngineering	3	0	0	3
5.	R23PC01T	ElectricalCircuitAnalysis-I	3	0	0	3
6.	R23HS01P	CommunicativeEnglishLab	0	0	2	1
7.	R23BS03P	EngineeringPhysicsLab	0	0	2	1
8.	R23ES06	ITWorkshop	0	0	2	1
9.	R23ES02	EngineeringWorkshop	0	0	3	1.5
10.	R23PC01P	ElectricalCircuitsLab	0	0	3	1.5
11.	R23MC01	HealthandWellness,YogaandSports	0	0	1	0.5
		Total				**20.5**

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MECHANICALENGINEERING

B.Tech–IIYearI Semester

S.No.	Category	Title	L	T	P	Credits
1	BS	TransformsandNumericalMethods	3	0	0	3
2	HSMC	UniversalHumanValues–UnderstandingHarmony&EthicalHumanConduct	2	1	0	3
3	EngineeringScience	MaterialScienceandMetallurgy	2	0	0	2
4	ProfessionalCore	MechanicsofSolids	3	0	0	3
5	ProfessionalCore	Thermodynamics	3	0	0	3
6	ProfessionalCore	MechanicsofSolidsandMaterialsScienceLab	0	0	3	1.5
7	ProfessionalCore	MachineDrawing	0	0	3	1.5
8	EngineeringScience	PythonprogrammingLab	0	0	2	1.0
9	SkillEnhancement Course	ComputerAidedDraftingandModelingLab	0	1	2	2
10	AuditCourse	EnvironmentalScience	2	0	0	-
Total			**15**	**2**	**10**	**20**

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MECHANICALENGINEERING

B.Tech.IIYearII Semester

S.No.	Category	Title	L	T	P	Credits
1	ManagementElective-I	IndustrialManagement	2	0	0	2
2	BasicScience	ComplexVariables,ProbabilityandStatistics	3	0	0	3
3	ProfessionalCore	Manufacturingprocesses	3	0	0	3
4	ProfessionalCore	FluidMechanics&HydraulicMachines	3	0	0	3
5	ProfessionalCore	DesignofMachineMembers	3	0	0	3
6	ProfessionalCore	FluidMechanics&HydraulicMachines Lab	0	0	3	1.5
7	ProfessionalCore	ManufacturingprocessesLab	0	0	3	1.5
8	Skill Enhancement course	SoftSkills	0	1	2	2
9	EngineeringScience	DesignThinking&Innovation	1	0	2	2
Total			**15**	**1**	**10**	**21**
MandatoryCommunityServiceProjectInternshipof08weeksdurationduringsummerVacation						

NSS/NCC/SCOUTS&GUIDENCE/COMMUNITYSERVICE

CourseObjectives:

Theobjectiveofintroducingthiscourseistoimpartdiscipline,character,fraternity,teamwork, social consciousness among the students and engaging them in selfless service.

CourseOutcomes: Aftercompletionofthecoursethestudentswillbeableto

CO1: Understandtheimportanceof discipline,character andservice motto.
CO2: Solvesomesocietalissuesbyapplyingacquiredknowledge,facts,andtechniques.
CO3: Explorehumanrelationshipsbyanalyzingsocialproblems.
CO4: Determine toextendtheirhelpforthefellowbeingsand downtroddenpeople.
CO5: Developleadershipskillsandcivic responsibilities.

UNITI

Orientation

GeneralOrientationonNSS/NCC/Scouts&Guides/CommunityServiceactivities,career guidance.

Activities:
i) Conducting–icebreakingsessions-expectationsfromthecourse-knowingpersonal talents and skills
ii) Conductingorientationsprogramsforthestudents –futureplans-activities-releasing road map etc.
iii) Displayingsuccessstories-motivationalbiopics-awardwinningmoviesonsocietal issues etc.
iv) Conductingtalentshowinsingingpatrioticsongs-paintings-anyothercontribution.

UNITII

Nature&Care Activities:
i) Bestoutofwaste competition.
ii) Posterandsignsmakingcompetitiontospreadenvironmental awareness.
iii) Recyclingandenvironmentalpollutionarticlewritingcompetition.
iv) OrganisingZero-wasteday.
v) DigitalEnvironmentalawarenessactivityviavarioussocialmediaplatforms.
vi) Virtualdemonstrationofdifferenteco-friendlyapproachesforsustainable living.
vii) Writea summaryonanybookrelatedtoenvironmental issues.

UNITIII

CommunityService

Activities:
i) ConductingOneDaySpecialCampinavillagecontactingvillage-arealeaders-Survey in the village, identification of problems- helping them to solve via media- authorities experts- etc.

ii) ConductingawarenessprogramsonHealth-relatedissuessuchasGeneralHealth,Mentalhealth, Spiritual Health, HIV/AIDS,
iii) ConductingconsumerAwareness.Explainingvariouslegalprovisionsetc.

iv) WomenEmpowermentProgrammes-Sexual Abuse,AdolescentHealthandPopulationEducation.
v) Anyotherprogrammesincollaborationwithlocalcharities,NGOsetc.

ReferenceBooks:

1. NirmalyaKumar Sinha&SurajitMajumder,*AText Bookof NationalServiceScheme* Vol;.I,VidyaKutirPublication,2021(ISBN978-81-952368-8-6)
2. *RedBook-NationalCadetCorps*–StandingInstructionsVolI&II,Directorate General of NCC, Ministry of Defence, New Delhi
3. DavisM.L.andCornwellD.A.,―IntroductiontoEnvironmentalEngineering‖, McGraw Hill, New York 4/e 2008
4. MastersG.M.,JosephK.andNagendranR.―IntroductiontoEnvironmental Engineering and Science‖, Pearson Education, New Delhi. 2/e 2007
5. RamAhuja.*SocialProblemsinIndia*,RawatPublications,NewDelhi.

General Guidelines:

1. InstitutesmustassignslotsintheTimetablefortheactivities.
2. Institutesarerequiredtoprovideinstructortomentor thestudents.

Evaluation Guidelines:

- Evaluatedforatotalof100 marks.
- Astudentcanselect6activitiesofhis/herchoicewithaminimumof01activityper unit.Eachactivityshall beevaluatedbytheconcernedteacherfor 15marks,totalling to 90 marks.
- Astudentshallbeevaluated by theconcernedteacherfor10marks byconducting viva

Health and Awareness:

CourseObjectives:

Themainobjectiveofintroducingthiscourseistomakethestudentsmaintaintheirmentaland physical wellness by balancing emotions in their life. It mainly enhances the essential traits required for the development of the personality.

CourseOutcomes:

Aftercompletionofthecoursethestudentwillbeableto
CO1:Understandtheimportanceofyogaandsportsfor Physical fitnessandsoundhealth.
CO2: Demonstrate an understanding of health-related fitness components.
CO3: Compareandcontrastvariousactivitiesthathelpenhancetheirhealth. **CO4:**
Assess current personal fitness levels.
CO5: DevelopPositivePersonality

UNITI

Concept of health and fitness, Nutrition and Balanced diet, basic concept of immunity Relationshipbetweendietandfitness,Globalizationanditsimpactonhealth,BodyMassIndex (BMI) of all age groups.

Activities:
i) Organizinghealthawarenessprogrammesincommunity
ii) Preparationofhealthprofile
iii) Preparationofchartforbalancedietforallagegroups

UNITII

Conceptofyoga,needforandimportanceofyoga,originandhistoryofyogainIndiancontext, classification of yoga, Physiological effects of Asanas- Pranayama and meditation, stress management and yoga, Mental health and yoga practice.

Activities:
Yogapractices –Asana,Kriya,Mudra,Bandha,Dhyana,Surya Namaskar

UNITIII

ConceptofSportsandfitness,importance,fitnesscomponents,historyofsports,Ancientand

ModernOlympics,AsiangamesandCommonwealthgames.

Activities:

i) Participationinonemajorgameandoneindividualsportviz.,Athletics,Volleyball, Basketball, Handball, Football, Badminton, Kabaddi, Kho-kho, Table tennis, Cricket etc.
Practicinggeneralandspecificwarm up,aerobics
ii) Practicingcardiorespiratoryfitness,treadmill,runtest,9minwalk,skippingand running.

ReferenceBooks:

1. GordonEdlin,EricGolanty.HealthandWellness,14thEdn.Jones&BartlettLearning, 2022
2. T.K.V.Desikachar.TheHeartofYoga:DevelopingaPersonal Practice
3. ArchieJ.Bahm.YogaSutrasofPatanjali,JainPublishingCompany,1993
4. Wiseman,JohnLofty,SASSurvivalHandbook:TheUltimateGuidetoSurviving Anywhere Third Edition, William Morrow Paperbacks, 2014
5. TheSportsRulesBook/HumanKineticswithThomasHanlon. --3rded.Human Kinetics, Inc.2014

General Guidelines:

1. InstitutesmustassignslotsintheTimetablefortheactivitiesofHealth/Sports/Yoga.
2. Institutesmustprovidefield/facilityandoffertheminimumoffivechoicesofasmany as Games/Sports.
3. Institutesarerequiredtoprovidesportsinstructor / yogateacher tomentor thestudents.

Evaluation Guidelines:

- Evaluatedforatotalof100 marks.
- Astudentcanselect6activitiesofhis/herchoicewithaminimumof01activityper unit.Eachactivityshall beevaluatedbytheconcernedteacherfor 15marks,totalling to 90 marks.
- Astudent shallbeevaluatedbytheconcernedteacherfor10marksbyconductingviva voce on the subject.

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MECHANICALENGINEERING

UNIVERSALHUMANVALUES-UNDERSTANDINGHARMONY&HUMANETHICALCONDUCT

CourseObjectives:

• Tohelpthestudentsappreciatetheessentialcomplementarybetween'VALUES'and'SKILLS'to ensure sustained happiness and prosperity which are the core aspirations of all human beings.

• To facilitate the development of a Holistic perspective among students towards life and professionaswellastowardshappinessandprosperitybasedonacorrectunderstandingofthe Human reality andthe rest of existence. Suchholistic perspective formsthe basis of Universal Human Values and movement towards value-based living in a natural way.

• To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct,trustfulandmutuallyfulfillinghumanbehaviourandmutuallyenrichinginteractionwith Nature.

CourseOutcomes:

• DefinethetermslikeNatural Acceptance,HappinessandProsperity(L1,L2)
• Identifyone'sself,andone'ssurroundings(family,societynature) (L1,L2)
• Applywhattheyhavelearnttotheir ownself indifferentday-to-daysettingsinreallife (L3)
• Relatehumanvalueswithhumanrelationshipandhumansociety.(L4)
• Justifytheneedforuniversal humanvaluesandharmoniousexistence(L5)
• Developassociallyandecologicallyresponsibleengineers(L3,L6)

Course Topics

The course has 28 lectures and 14 tutorials in 5 modules. The lectures and tutorials are of 1- hour duration.Tutorialsessionsaretobeusedtoexploreandpracticewhathasbeenproposedduringthe lecture sessions.
TheTeacher'sManualprovidestheoutlineforlecturesaswellaspracticesessions.Theteacheris expected to present theissues to be discussedas propositionsand encourage the students to have a dialogue.

UNITI

IntroductiontoValueEducation(6lectures and3tutorialsfor practice session)

Lecture1:RightUnderstanding,RelationshipandPhysicalFacility(HolisticDevelopmentandthe Role of Education)

Lecture2:UnderstandingValueEducationTutorial1:PracticeSessionPS1SharingaboutOneself Lecture 3: self-exploration as the Process for Value Education
Lecture4:ContinuousHappinessandProsperity –theBasicHumanAspirationsTutorial2:Practice Session PS2 Exploring Human Consciousness
Lecture5:HappinessandProsperity –Current Scenario
Lecture6:MethodtoFulfilltheBasicHumanAspirationsTutorial3:PracticeSessionPS3 Exploring Natural Acceptance

UNITII
HarmonyintheHumanBeing(6lectures and3tutorialsfor practicesession)

Lecture7:UnderstandingHumanbeingas theCo-existenceoftheself andthebody.
Lecture8:DistinguishingbetweentheNeedsoftheselfandthebodyTutorial4:PracticeSession PS4 Exploring the difference of Needs of self and body

Lecture9:ThebodyasanInstrumentof theself
Lecture10:UnderstandingHarmonyintheselfTutorial5:PracticeSessionPS5ExploringSources of Imagination in the self Lecture 11: Harmony of the self with the body
Lecture12:Programmetoensureself-regulationandHealthTutorial6:PracticeSessionPS6 Exploring Harmony of self with the body

UNITIII

HarmonyintheFamilyandSociety(6lecturesand3tutorialsforpracticesession) Lecture

13: Harmony in the Family – the Basic Unit of Human Interaction
Lecture14: 'Trust' –theFoundational ValueinRelationshipTutorial 7:PracticeSessionPS7 ExploringtheFeelingof Trust
Lecture15:'Respect' –astheRightEvaluationTutorial8:PracticeSessionPS8Exploringthe Feeling of Respect
Lecture16:OtherFeelings,JusticeinHuman-to-HumanRelationship

Lecture17:UnderstandingHarmonyintheSociety
Lecture18:VisionfortheUniversalHumanOrderTutorial9:PracticeSessionPS9Exploring Systems to fulfil Human Goal

UNITIV

HarmonyintheNature/Existence(4lecturesand2tutorialsforpractice session)

Lecture19:UnderstandingHarmonyintheNature
Lecture20:Interconnectedness,self-regulationandMutualFulfilmentamongtheFourOrdersof Nature
Tutorial 10: Practice Session PS10 Exploring the Four Orders of Nature
Lecture21: RealizingExistenceasCo-existenceat AllLevels
Lecture22:TheHolisticPerceptionofHarmonyinExistenceTutorial11:PracticeSessionPS11 Exploring Co-existence in Existence.

UNITV

ImplicationsoftheHolisticUnderstanding –aLookatProfessionalEthics(6lecturesand3 tutorials for practice session)

Lecture23:NaturalAcceptanceofHuman Values
Lecture24:Definitivenessof(Ethical)HumanConductTutorial12:PracticeSessionPS12 Exploring Ethical Human Conduct
Lecture25:ABasisforHumanisticEducation,HumanisticConstitutionandUniversalHuman Order
Lecture26:CompetenceinProfessionalEthicsTutorial13:PracticeSessionPS13Exploring Humanistic Models in Education
Lecture27:HolisticTechnologies,ProductionSystemsandManagementModels-TypicalCase Studies
Lecture28:Strategiesfor TransitiontowardsValue-basedLifeand Profession
Tutorial14:PracticeSessionPS14ExploringStepsofTransitiontowardsUniversalHumanOrder
Practice Sessions for

UNITI–IntroductiontoValueEducation PS1

Sharing about Oneself
PS2ExploringHumanConsciousness
PS3ExploringNaturalAcceptance Practice
Sessions for
UNITII– HarmonyintheHumanBeing
PS4Exploringthedifferenceof Needsofselfandbody PS5
Exploring Sources of Imagination in the self
PS6ExploringHarmonyofselfwiththebodyPracticeSessionsfor UNIT III –

Harmony in the Family and Society

PS7ExploringtheFeelingofTrustPS8ExploringtheFeelingofRespect PS9
Exploring Systems to fulfil Human Goal

PracticeSessionsfor

UNITIV– Harmony in the Nature(Existence)

PS10 Exploring the Four Orders of Nature
PS11 Exploring Co-existence in Existence
Practice Sessions for

UNITV–ImplicationsoftheHolisticUnderstanding –aLookatProfessionalEthics PS12

Exploring Ethical Human Conduct
PS13ExploringHumanisticModelsinEducation
PS14ExploringStepsofTransitiontowardsUniversalHumanOrder Readings:

TextbookandTeachersManual

a. The Textbook

RRGaur,RAsthana,GPBagaria,AFoundationCourseinHumanValuesandProfessional Ethics, 2nd Revised Edition, ExcelBooks, New Delhi, 2019. ISBN 978-93-87034-47-1

b. The Teacher'sManual
RRGaur,RAsthana,GPBagaria,Teachers'Manual forAFoundationCourseinHumanValues and Professional Ethics, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93- 87034-53-2

ReferenceBooks

1. JeevanVidya:EkParichaya,ANagaraj,JeevanVidyaPrakashan,Amarkantak, 1999.
2. HumanValues,A.N.Tripathi,NewAgeIntl.Publishers,NewDelhi,2004
3. TheStoryof Stuff (Book).
4. TheStoryof MyExperimentswith Truth-byMohandasKaramchand Gandhi
5. SmallisBeautiful-E.FSchumacher.
6. Slowis Beautiful-CecileAndrews
7. EconomyofPermanence-J C Kumarappa
8. BharatMeinAngrejiRaj– PanditSunderlal
9. Rediscovering India-by Dharampal
10. HindSwaraj or IndianHomeRule-byMohandasK.Gandhi

11. IndiaWinsFreedom-MaulanaAbdulKalam Azad
12. Vivekananda-RomainRolland(English)

Mode of Conduct:

Lecturehoursaretobeusedforinteractivediscussion,placingtheproposalsaboutthetopicsat hand and motivating students to reflect, explore and verify them.

Tutorialhoursaretobeusedforpractice sessions.

While analyzing and discussing the topic, the faculty mentor's role is in pointing to essential elements to helpinsortingthem outfromthesurfaceelements.Inotherwords,helpthestudentsexploretheimportant or critical elements.

Inthediscussions,particularlyduringpracticesessions(tutorials),thementorencouragesthe studenttoconnect withone'sownselfanddoself-observation,self-reflectionandselfexploration.

Scenarios may be used to initiate discussion. The student is encouraged to take up "ordinary" situationsratherthan"extra-ordinary"situations.Suchobservationsandtheiranalysesareshared and discussed with other students and faculty mentor, in a group sitting.

Tutorials (experiments or practical) are important for the course. The difference is that the laboratory is everyday life, and practical are how you behave and work in real life. Depending on thetureoftopics,worksheets,homeassignmentand/oractivity areincluded.Thepracticesessions (tutorials) would also provide support to a student in performing actions commensurate to his/her beliefs. It is intended that this would lead to development of commitment, namely behaving and working based on basic human values.

Itisrecommendedthatthiscontentbeplacedbeforethestudentasitis,intheformofabasic foundation course, without including anything else or excluding any part of this content. Additionalcontentmaybeofferedinseparate,highercourses.This courseistobetaughtby faculty from every teaching department, not exclusively by any one department.

Teacherpreparationwith aminimum exposuretoat leastone8-dayFacultyDevelopmentProgramonUniversal Human Values is deemed essential.

OnlineResources:

1. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%201-Introduction%20to%20Value%20Education.pdf

1. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%202-Harmony%20in%20the%20Human%20Being.pdf

3. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%203-Harmony%20in%20the%20Family.pdf

4. https://fdp-si.aicte-india.org/UHV%201%20Teaching%20Material/D3-S2%20Respect%20July%2023.pdf

5. https://fdp-si.aicte-india.org/UHVII%20Class%20Notes%20&%20Handouts/UHV%20Handout%205-Harmony%20in%20the%20Nature%20and%20Existence.pdf

6. https://fdp-si.aicte-india.org/download/FDPTeachingMaterial/3-days%20FDPSI%20UHV%20Teaching%20Material/Day%203%20Handouts/UHV%203D%20D3-S2A%20Und%20Nature-Existence.pdf

7. https://fdp-si.aicteindia.org/UHV%20II%20Teaching%20Material/UHV%20II%20Lecture%2023-25%20Ethics%20v1.pdf

8. https://www.studocu.com/in/document/kiet-group-of-institutions/universal-humanvalues/chapter-5-holistic-understanding-of-harmony-on-professional-ethics/62490385

DESIGMTHINKINGANDINNOVATION

CourseObjectives:

The objective of this course is to familiarize students with design thinking process as a tool for breakthroughinnovation.Itaimstoequipstudentswithdesignthinkingskillsandignitethe minds to create innovative ideas, develop solutions for real-time problems.

CourseOutcomes:

• Definetheconceptsrelatedtodesignthinking.(L1,L2)
• Explainthefundamentalsof Design Thinkingandinnovation(L1, L2)
• Applythedesignthinkingtechniquesforsolvingproblemsinvarioussectors. (L3)
• Analysetoworkinamultidisciplinaryenvironment (L4)
• Evaluatethevalueof creativity(L5)•
Formulatespecificproblemstatementsofrealtimeissues(L3,L6) UNIT I

Introductionto Design Thinking

Introduction to elements and principles of Design, basics of design-dot, line, shape, form as fundamentaldesigncomponents.Principlesofdesign.Introductiontodesignthinking,historyof Design Thinking, New materials in Industry.

UNITII

Design Thinking Process Design thinking process (empathize, analyze, idea & prototype), implementingtheprocessindrivinginventions,designthinkinginsocialinnovations.Toolsof design thinking - person, costumer, journey map, brainstorming, product development

Activity:Everystudentpresentstheirideainthreeminutes,Everystudentcanpresentdesignprocess in the form of flow diagram or flow chart etc. Every student should explain about product development.

UNITIII

Innovation

Artofinnovation,Differencebetweeninnovationandcreativity,roleof creativityandinnovationi

-Measuring theimpactand value ofcreativity.

Activity:Debateoninnovationandcreativity,Flowandplanningfromideatoinnovation,Debateon value-based innovation.

UNITIV

ProductDesign

Problemformation,introductiontoproductdesign,Productstrategies,Productvalue,Product planning, product specifications- Innovation towards product design- Case studies

Activity:Importanceofmodelling,howtosetspecifications,Explainingtheirownproductdesign. UNIT V

DesignThinkinginBusinessProcesses

DesignThinkingappliedinBusiness&StrategicInnovation,DesignThinkingprinciplesthatredefine business – Business challenges: Growth, Predictability, Change, Maintaining Relevance, Extreme competition, Standardization. Design thinking to meet corporate needs Design thinking for Startups- Defining and testing Business Models and Business CasesDeveloping& testing prototypes.

Activity:Howtomarketourownproduct,Aboutmaintenance,Reliabilityandplanforstartup. Textbooks:

1. TimBrown,Changebydesign,HarperBollins (2009)
2. IdrisMootee,DesignThinkingfor Strategic Innovation,2013,JohnWiley&Sons.

ReferenceBooks:

1. DavidLee,DesignThinkingintheClassroom,Ulysses press
2. ShrutinNShetty,DesigntheFuture,Norton Press
3. WilliamLidwell,UniversalPrinciplesofDesign-Kritinaholden,JillButter.
4. Chesbrough.H,TheEraofOpenInnovation–2013

Online LearningResources:

- https://nptel.ac.in/courses/109/104/109104109/
- https://swayam.gov.in/nd1_noc19_mg60/preview

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Gurajada,Vizianagaram–533003,
COMPUTERSCIENCEANDENGINERRING

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
Gurajada,Vizianagaram–533003,
AndhraPradesh,India
DEPARTMENTOFELECTRONICSANDELECTRICAL & ENGINEERING

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY:
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