B.Sc. STATISTICS

LOCF SYLLABUS 2023

Department of Statistics
School of Computing Sciences
St. Joseph's College (Autonomous)
Tiruchirappalli - 620 002, Tamil Nadu, India

Vision

Forming globally competent, committed, compassionate and holistic persons, to be men and women for others, promoting a just society.

Mission

- Fostering learning environment to students of diverse background, developing their inherent skills and competencies through reflection, creation of knowledge and service.
- Nurturing comprehensive learning and best practices through innovative and value-driven pedagogy.
- Contributing significantly to Higher Education through Teaching, Learning, Research and Extension.

Programme Educational Objectives (PEOs)

- Graduates will be able to accomplish professional standards in the global environment.
- Graduates will be able to uphold integrity and human values.
- Graduates will be able to appreciate and promote pluralism and multiculturalism in working environment.

Programme Outcomes (POs)

1. Graduates will be able to comprehend the concepts learnt and apply in real life situations with analytical skills.
2. Graduates with acquired skills and enhanced knowledge will be employable/ become entrepreneurs or will pursue higher Education.
3. Graduates with acquired knowledge of modern tools communicative skills and will be able to contribute effectively as team members.
4. Graduates are able to read the signs of the time analyze and provide practical solutions.
5. Graduates imbibed with ethical values and social concern will be able to understand and appreciate social harmony, cultural diversity ensure sustainable environment.

Programme Specific Objectives (PSOs)

1. Gain the knowledge of statistical concepts and apply them in any domain.
2. Create logical thinking and reasoning which enhance the capability of solving complex problems in Statistics to meet the opportunities of career development and higher studies
3. Recognize the importance of statistical modelling and computing, and mathematical approaches to analyze the real problems using various statistical tools.
4. Apply the knowledge of statistical software to solve real world problems.
5. Imbibe personal skills such as the ability to work both independently and in a group.

CONTINUOUS INTERNAL ASSESSMENT
Categorizing Outcome Assessment Levels Using Bloom's Taxonomy

Level	Cognitive Domain	Description
K1	Remember	It is the ability to remember the previously learned concepts or ideas.
K2	Understand	The learner explains concepts or ideas.
K3	Apply	The learner uses existing knowledge in new contexts.
K4	Analyse	The learner is expected to draw relations among ideas and to compare and contrast.
K5	Evaluate	The learner makes judgements based on sound analysis.
K6	Create	The learner creates something unique or original.

Question Paper Blueprint for Mid and End Semester Tests

<table>
<tr><td colspan="3">Duration: 2 Hours</td><td colspan="6">Maximum Marks: 60</td></tr>
<tr><td colspan="2" rowspan="2">Section</td><td colspan="6">K level*</td><td rowspan="2">Marks</td></tr>
<tr><td>K1</td><td>K2</td><td>K3</td><td>K4</td><td>K5</td><td>K6</td></tr>
<tr><td colspan="2">A (no choice)</td><td>7</td><td></td><td></td><td></td><td></td><td></td><td>7 × 1 = 7</td></tr>
<tr><td colspan="2">B (no choice)</td><td></td><td>5</td><td></td><td></td><td></td><td></td><td>5 × 3 = 15</td></tr>
<tr><td colspan="2">C (either… or type)</td><td></td><td></td><td>3</td><td></td><td></td><td></td><td>3 × 6 = 18</td></tr>
<tr><td rowspan="4">D (2 out of 3)</td><td>Courses with K4 as the highest cognitive level</td><td></td><td></td><td></td><td>2</td><td></td><td></td><td rowspan="4">2 × 10 = 20</td></tr>
<tr><td>Courses with K5 as the highest cognitive level wherein one question each on K4 and K5 is compulsory.
(Note:K4 has two questions whereas, K5 has no choice.)</td><td></td><td></td><td></td><td>1</td><td>1</td><td></td></tr>
<tr><td rowspan="2">Courses with K6 as the highest cognitive level wherein one question each on K5 and K6 is compulsory.
(Note: Mid Sem: K4 has two questions whereas, K5 has no choice; End sem: K5 has two questions whereas, K6 has no choice)</td><td></td><td></td><td></td><td colspan="2">Mid Sem</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td colspan="2">End Sem</td></tr>
<tr><td colspan="6">Total</td><td>60</td></tr>
</table>

** K4 and K5 levels will be assessed in the Mid semester test whereas K5 and K6 levels will be assessed in the End semester test.*

Question Paper Blueprint for Mid and End Semester Tests *(For quantitative courses only)*

Duration: 2 Hours						**Maximum Marks: 60**
Section	**K level**					**Marks**
	K1	**K2**	**K3**	**K4**	**K5**	
A *(no choice)*	9					9 × 1 = 9
B *(either… or type)*		2	1			3 × 5 = 15
C *(2 out of 3)*				1	1*	2 × 18 = 36
					Total	**60**

** K5 compulsory*

SEMESTER EXAMINATION
Question Paper Blueprint for Semester Examination

Duration: 3 Hours								**Maximum Marks: 100**
Section		**K level**						**Marks**
		K1	**K2**	**K3**	**K4**	**K5**	**K6**	
A *(no choice, two questions from each unit)*		10						10 × 1 = 10
B *(no choice, two questions from each unit)*			10					10 × 3 = 30
C *(either… or type, one question from each unit)*				5				5 × 6 = 30
D *(3 out of 5, one question from each unit)*	*Courses with K4 as the highest cognitive level*				3			3 × 10 = 30
	Courses with K5 as the highest cognitive level wherein two K4 questions and one K5 question are compulsory. (Note: Three questions on K4 and two questions on K5)				2	1		
	Courses with K6 as the highest cognitive level wherein one question each on K4, K5, and K6 is compulsory. (Note: Two questions each on K4 and K5 and one question on K6)				1	1	1	
							Total	**100**

Question Paper Blueprint for Semester Examination *(For quantitative courses only)*

Section	Marks	K level
A	10 × 1 = 10	K1
B	5 × 6 = 30 *(either…or)*	K2 *(Q. No. 11 & 12)* K3 *(Q. No. 13, 14 & 15)*
C	4 × 15 = 60 *(4 out of 5)*	K4 *(Q. No. 16, 17 & 18)* K5 *(Q. No. 19 & 20)*
Total Marks: 100		

Evaluation Pattern for Part IV One/Two Credit Courses

Title of the Course	CIA	Semester Examination	Total Marks
Internship	100		**100**
UG Skill Enhancement Course (Non Major Elective) Foundation Course **PG** Ability Enhancement Course	20 + 10 + 20 = 50	50 *(External member from the Department)*	**100**
Value Education	50	50 *(CoE)*	**100**

B.Sc. STATISTICS								
PROGRAMME PATTERN								
Course Details						**Scheme of Exams**		
Sem	**Part**	**Course Code**	**Title of the Course**	**Hours**	**Credits**	**CIA**	**SE**	**Final**
1	1	23UTA11GL01A	General Tamil - 1	5	3	100	100	100
		23UFR11GL01	French - 1					
		23UHI11GL01	Hindi - 1					
		23USA11GL01	Sanskrit - 1					
	2	23UEN12GE01	General English - 1	5	3	100	100	100
	3	23UST13CC01	**Core Course - 1:** Descriptive Statistics	5	4	100	100	100
		23UST13CC02	**Core Course - 2:** Probability Theory	5	3	100	100	100
		23UST13AC01	**Allied Course - 1:** Mathematics for Statistics - 1	4	3	100	100	100
	4	23UST14FC01	**Foundation Course**: Statistics for Beginners	2	1	100	-	100
		23UST14SE01	**Skill Enhancement Course - 1: (Non Major Elective):** Basics of Statistics	2	1	100	-	100
		23UHE14VE01	**Value Education - 1**: Essentials of Humanity*	2	1	50	50	50
		23UEN14AE01	**Ability Enhancement Compulsory Course - 1:** Communicative English	(6)	3	100	-	100
			Total	**30(6)**	**22**			
2	1	23UTA21GL02	General Tamil - 2	4	3	100	100	100
		23UFR21GL02	French - 2					
		23UHI21GL02	Hindi - 2					
		23USA21GL02	Sanskrit - 2					
	2	23UEN22GE02	General English - 2	5	3	100	100	100
	3	23UST23CC03	**Core Course - 3:** Numerical Methods	5	4	100	100	100
		23UST23CC04	**Core Course - 4:** Time Series and Index Numbers	6	4	100	100	100
		23UST23AC02	**Allied Course - 2:** Mathematics for Statistics - 2	6	4	100	100	100
	4	23UHE24VE02	**Value Education - 2:** Fundamentals of Human Rights*	2	1	50	50	50
		23UHE24AE01	**Ability Enhancement Compulsory Course - 2:** Environmental Studies*	2	1	50	50	50
		-	Extra Credit Courses (MOOC/ Certificate Courses) -1	-	(3)			
			Total	**30**	**20(3)**			
3	1	23UTA31GL03	General Tamil -3	4	3	100	100	100
		23UFR31GL03	French - 3					
		23UHI31GL03	Hindi - 3					
		23USA31GL03	Sanskrit - 3					
	2	23UEN32GE03	General English - 3	5	3	100	100	100
	3	23UST33CC05	**Core Course - 5:** Discrete Probability Distributions	6	5	100	100	100
		23UST33CC06	**Core Course - 6:** Continuous Probability Distributions	7	5	100	100	100
		23UST33AO01A	**Allied Optional - 1:** Office Automation	6	4	100	100	100
		23UST33AO01B	**Allied Optional - 1:** Accountancy - 1					
	4	23UHE34VE03A	**Value Education - 3:** Social Ethics - 1*	2	1	50	50	50
		23UHE34VE03B	**Value Education - 3:** Religious Doctrine - 1*					
		-	Extra Credit Courses (MOOC/ Certificate Courses) - 2	-	(3)			
			Total	**30**	**21(3)**			

4	1	23UTA41GL04B	General Tamil - 4 அறிவியல் தமிழ் (Scientific Tamil)	4	3	100	100	100
		23UFR41GL04	French - 4					
		23UHI41GL04	Hindi - 4					
		23USA41GL04	Sanskrit - 4					
	2	23UEN42GE04	General English - 4	5	3	100	100	100
	3	23UST43CC07	**Core Course - 7:** Estimation Theory	6	5	100	100	100
		23UST43CC08	**Core Course - 8:** Testing of Hypothesis	7	5	100	100	100
		23UST43AO02A	**Allied Optional - 2:** C Programming	6	4	100	100	100
		23UST43AO02B	**Allied Optional - 2:** Accountancy - 2					
	4	23UHE44VE04A	**Value Education - 4:** Social Ethics - 2*	2	1	50	50	50
		23UHE44VE04B	**Value Education - 4:** Religious Doctrine - 2*					
		-	Extra Credit Courses (MOOC/ Certificate Courses) - 3	-	(3)			
			Total	**30**	**21(3)**			
5	3	23UST53CC09	**Core Course - 9:** Sampling Theory	5	4	100	100	100
		23UST53CC10	**Core Course - 10:** Design of Experiments	5	4	100	100	100
		23UST53CP01	**Core Practical - 1**: Statistics for Data Analysis	4	2	100	100	100
		23UST53ES01A	**Discipline Specific Elective - 1:** Linear Models, Econometrics and Random Processes	5	3	100	100	100
		23UST53ES01B	**Discipline Specific Elective - 1:** Real Analysis					
		23UST53ES02A	**Discipline Specific Elective - 2:** Operations Research - 1	5	3	100	100	100
		23UST53ES02B	**Discipline Specific Elective - 2:** Stochastic Processes					
		23UST53IS01	Internship	-	1	100	-	100
		23UST53SP01	**Self-paced Learning:** Introduction to Data Mining*	-	2	50	50	50
	4	23UST54EG01	**Generic Elective - 1:** Actuarial Statistics	4	2	100	100	100
		23USS54SE01	**Skill Enhancement Course - 2:** Soft Skills	2	1	100	-	100
		-	Extra Credit Courses (MOOC/ Certificate Courses) - 4	-	(3)			
			Total	**30**	**22(3)**			
6	3	23UST63CC11	**Core Course - 11:** Statistical Quality Control	6	5	100	100	100
		23UST63CC12	**Core Course - 12:** Statistical Analysis Based on R - Software	4	3	100	100	100
		23UST63CP02	**Core Practical - 2:** R-Software	4	2	100	100	100
		23UST63ES03A	**Discipline Specific Elective - 3:** Vital Statistics	5	3	100	100	100
		23UST63ES03B	**Discipline Specific Elective - 3:** Survival Analysis					
		23UST63ES04A	**Discipline Specific Elective - 4:** Operations Research - 2	5	3	100	100	100
		23UST63ES04B	**Discipline Specific Elective - 4:** Big-Data Analytics					
		23UST63PW01	Project Work and Viva Voce	-	2	100	100	100
		23UST63CE01	Comprehensive Examination *	-	2	50	50	50
	4	23UST64EG02	**Generic Elective - 2:** Applied Statistics	4	2	100	100	100
		23UST64SE02	**Skill Enhancement Course - 3 (WS):** Official Statistics	2	1	100	-	100
		-	Extra Credit Courses (MOOC/ Certificate Courses) - 5	-	(3)			
			Total	**30**	**23(3)**			
2 - 6	5	23UCW65OR01	Outreach Programme (SHEPHERD)		4			
1 - 6			**Total (3 years)**	**180**	**133**			

*- for grade calculation 50 marks are converted into 100 in the mark statements

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UTA11GL01A	General Tamil – 1	5	3

கற்றலின் நோக்கங்கள்
தமிழ்ச் செவ்வியல் இலக்கியங்களையும் காப்பியங்களையும் மாணவர்கள் அறிந்துகொள்ளல்
தமிழர் பேணி வளர்த்த அறம்சார் விழுமியங்களை மாணவர்கள் தம் வாழ்வில் பின்பற்றுதல்
தமிழில் பக்திஇயக்கப் பங்களிப்பையும் பகுத்தறிவுச் சிந்தனை மரபையும் உணர்தல்
மாணவர்கள் தம் எழுத்தாற்றலையும் மொழிப்புலமையையும் வளர்த்தெடுத்தல்
போட்டித்தேர்வுகளை எதிர்கொள்ளும் வகையில் இலக்கணம், இலக்கியம் கற்றல்

அலகு I: தமிழ் இலக்கிய, இலக்கண வரலாறு அறிமுகம் (15 மணி நேரம்)

1. இலக்கணம் :

அ. தொல்காப்பியம், இறையனார் களவியல் உரை , நம்பியகப் பொருள், புறப்பொருள் வெண்பா மாலை, நன்னூல், தண்டியலங்காரம், யாப்பருங்கலக்காரிகை- நூல்கள்

ஆ. மொழிப் பயிற்சி- ஒற்றுப்பிழை தவிர்த்தல்

- வல்லினம் மிகும் இடங்கள்
- வல்லினம் மிகா இடங்கள்
- ஈரொற்று வரும் இடங்கள்
- ஒரு, ஓர் வரும் இடங்கள்
- அது, அஃது வரும் இடங்கள்
- தான், தாம் வரும் இடங்கள்

பயிற்சி : வல்லினம் மிகும் இடங்கள், மிகா இடங்கள் தவறாக வரும்வகையில் ஒரு பத்தி கொடுத்து ஒற்றுப் பிழை திருத்தி எழுதச் செய்தல்.

2. சங்க இலக்கியம் - எட்டுத்தொகை, பத்துப்பாட்டு
3. அற இலக்கியம் - பதினெண்கீழ்கணக்கு நூல்கள்
4. காப்பிய இலக்கியம் - ஐம்பெருங் காப்பியங்கள், ஐஞ்சிறு காப்பியங்கள், சமயக் காப்பியங்கள்
5. பக்தி இலக்கியமும் (பன்னிரு திருமுறைகள், நாலாயிர திவ்வியப் பிரபந்தம் -- பகுத்தறிவு இலக்கியமும் (சித்தர் இலக்கியங்கள், புலவர் குழந்தையின் இராவண காவியம்)

அலகு II: சங்க இலக்கியம் (15 மணி நேரம்)

எட்டுத்தொகை:

6. நற்றிணை-முதல் பாடல் -நின்ற சொல்லர்
7. குறுந்தொகை 3 ஆம் பாடல் -நிலத்தினும் பெரிதே
8. ஐங்குறுநூறு –நெல் பல பொலிக! பொன் பெரிது சிறக்க!' (முதல் பாடல்)-வேட்கைப் பத்து
9. கலித்தொகை- 51 - சுடர்த்தொடீஇக் கேளாய் -குறிஞ்சிக் கலி
10. புறநானூறு -189 தெண்கடல் வளாகம் பொதுமையின்றி, நாடா கொன்றோ -187

பத்துப்பாட்டு:

11. முல்லைப்பாட்டு (முழுவதும்)

அலகு III: அற இலக்கியம் **(15 மணி நேரம்)**

12. திருக்குறள் -அறன் வலியுறுத்தல் அதிகாரம்
13. நாலடியார்-பாடல்: 131 (குஞ்சியழகும்)
14. நான்மணிக்கடிகை-நிலத்துக்கு அணியென்ப
15. பழமொழி நானூறு- தம் நடை நோக்கார்
16. இனியவை நாற்பது- 37. இளமையை மூப்பு என்று

அலகு IV: காப்பிய இலக்கியம் **(15 மணி நேரம்)**

17. சிலப்பதிகாரம் – வழக்குரைகாதை
18. மணிமேகலை- பாத்திரம் பெற்ற காதை
19. பெரியபுராணம் - பூசலார் நாயனார்புராணம்
20. கம்பராமாயணம்- குகப் படலம்
21. சீறாப்புராணம் – மானுக்குப் பிணை நின்ற படலம்
22. இயேசு காவியம் -ஊதாரிப்பிள்ளை

அலகு V: பக்தி இலக்கியமும், பகுத்தறிவு இலக்கியமும் **(15 மணி நேரம்)**

23. பக்தி இலக்கியம்:

- திருநாவுக்கரசர் தேவாரம் - நாமார்க்கும் குடியல்லேம் எனத் தொடங்கும் பாடல் மட்டும்
- மாணிக்கவாசகர் திருவாசகம் - நமச்சிவாய வாஅழ்க நாதன்தாள் வாழ்க முதல் சிரம்குவிவார் ஓங்குவிக்கும் சீரோன் கழல் வெல்க வரை
- பொய்கையாழ்வார்-வையந் தகளியா வார்கடலே
- பூதத்தாழ்வார்-அன்பே தகளியா
- பேயாழ்வார்-திருக்கண்டேன் பொன்மேனி கண்டேன்
- ஆண்டாள் – திருப்பாவை மார்கழித் திங்கள் (முதல் பாடல்)

24. பகுத்தறிவு இலக்கியம் :

- திருமூலர் – திருமந்திரம் (270,271, 274, 275 285)
- பட்டினத்தார் -திருவிடை மருதூர் (காடே திரிந்து – எனத் தொடங்கும் பாடல் பா.எண்.279, 280)
- கடுவெளி சித்தர் - பாபஞ்செய் யாதிரு மனமே (பாடல் முழுவதும்)
- இராவண காவியம் – தாய்மொழிப் படலம் - 18. (ஏடுகை யில்லா ரில்லை முதல் - 22. செந்தமிழ் வளர்த்தார் வரை)

பாடநூல்

பொதுத்தமிழ்-1. (தமிழ் இலக்கிய வரலாறு-1), தமிழாய்வுத்துறை, தூய வளனார் தன்னாட்சிக் கல்லூரி, திருச்சிராப்பள்ளி, 2023

பார்வை நூல்கள்

1. வரதராசன்.மு. (2021) தமிழ் இலக்கிய வரலாறு, சாகித்ய அக்காதெமி.
2. விமலானந்தன். மது. ச. (2019). தமிழ் இலக்கிய வரலாறு, முல்லை நிலையம்.
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4. சிற்பி பாலசுப்பிரமணியன் & சேதுபதி.சொ. (2015). தமிழ் இலக்கிய வரலாறு, கவிதா வெளியீடு.
5. சிற்பி பாலசுப்ரமணியம், & பத்மநாபன். நீல. (2013). புதிய தமிழ் இலக்கிய வரலாறு (3 தொகுதிகள்), சாகித்ய அக்காதெமி.
6. பெருமாள். அ.கா. (2014). தமிழ் இலக்கிய வரலாறு, சுதர்சன் புக்ஸ்.

7. ஏசுதாசன். ப.ச. (2015). தமிழ் இலக்கிய வரலாறு, நியூ செஞ்சுரி புக் ஹவுஸ்.
8. ஸ்ரீகுமார். எஸ். (2014). தமிழ் இலக்கிய வரலாறு, ஸ்ரீசெண்பகா பதிப்பகம்.
9. பாக்கியமேரி எஃப். (2022). வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு, பூவேந்தன் பதிப்பகம்.
10. சுப்புரெட்டியார்.ந., (1980). தமிழ் பயிற்றும் முறை, மணிவாசகர் நூலகம்.

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- https://www.katuraitamilblogspot.com

கற்பித்தல் முறை	***விரிவுரை* (Lecture), *காணொளிக் காட்சி* (Videos), *விளக்கக் காட்சி* (PPT presentation)**

Course Outcomes		
CO No.	**CO–Statements** ***இப்பாடத்தின் நிறைவில் மாணவர்கள்***	**Cognitive Levels (K –Levels)**
CO1	சங்க இலக்கியங்கள்வழி பண்டைத்தமிழரின் வாழ்வியலையும் பண்பாட்டையும் அறிந்து கொள்வர்	**K1**
CO2	அற இலக்கியங்கள், காப்பியங்கள் வெளிப்படுத்தும் அறம்சார் விழுமியங்களைத் தம் வாழ்வில் பின்பற்றுவர்	**K2**
CO3	இலக்கணக் கோட்பாடுகளை இக்கால வாழ்வியலோடு பொருத்திப் பார்ப்பர்	**K3**
CO4	மொழியறிவோடு இலக்கியங்களைப் பகுத்தாராயும் திறன் பெறுவர்	**K4**
CO5	பக்தி இயக்கங்களின் செல்வாக்கையும், தமிழரின் பகுத்தறிவு மரபையும் மதிப்பிடுவர்	**K5**

Relationship Matrix											
Semester	**Course code**		**Title of the Paper**						**Hours/Week**		**Credits**
1	**23UTA11GL01A**		**General Tamil – 1**						**5**		**3**
Course Outcomes (COs)	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO–1	**1**	**2**	**3**	**2**	**2**	**3**	**3**	**2**	**2**	**2**	**2.2**
CO–2	**2**	**2**	**3**	**2**	**2**	**2**	**3**	**2**	**3**	**2**	**2.3**
CO–3	**1**	**2**	**2**	**3**	**2**	**2**	**2**	**3**	**3**	**3**	**2.3**
CO–4	**2**	**2**	**3**	**2**	**2**	**3**	**2**	**3**	**3**	**2**	**2.4**
CO–5	**3**	**1**	**2**	**2**	**2**	**2**	**3**	**2**	**3**	**3**	**2.3**
Mean overall Score											**2.3 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UFR11GL01	French - 1	5	3

Course Objectives
To identify the basic sentence structure of the French language.
To define and describe the various grammatical tenses and use them to communicate in French.
To examine the documents presented and discuss/reply to the questions asked.
To analyze and interpret expressions used to convey the cause, the effect, the purpose and the opposition in French.
To evaluate the grammatical nature of a given passage.

Unit I **(15 hours)**

1. Salut !
2. Enchanté

Unit II **(15 hours)**

3. J'adore

Unit III **(15 hours)**

4. Tu veux bien ?

Unit IV **(15 hours)**

5. On se voit quand ?

Unit V **(15 hours)**

6. Bonne idée

Teaching Methodology	Videos, Audios, PPT presentation, Role-play, Quiz

Book for Study

Mérieux, R & Loiseau, Y. (2017). *Latitudes* -1- (A1 /A2), méthode de français, Didier, (Units 1-6 only)

Books for Reference

1. Dauda, P, Giachino, L and Baracco, C. (2020). *Generation A1*. Didier, Paris.
2. Girardet, J and Pecheur, J. (2017). *Echo A1* (2nd ed.). CLE International.
3. Fournier, I. (2011). *Talk French*. Goyal Publishers.

Websites and eLearning Sources

1. https://www.wikihow.com/Pronounce-the-Letters-of-the-French-Alphabet
2. https://francais.lingolia.com/en/grammar/tenses/le-present
3. https://www.lawlessfrench.com/grammar/articles/
4. https://www.frenchpod101.com/french-vocabulary-lists/10-lines-you-need-for-introducing- yourself
5. https://www.tolearnfrench.com/exercises/exercise-french-2/exercise-french-3295.php

Course Outcomes		
CO No.	**CO–Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K –Levels)**
CO1	recall the usage of grammatical tenses during conversations.	**K1**
CO2	apply the grammar rules in practice exercises	**K3**
CO3	explain the nuances in the usage of various grammatical tenses and their aspects	**K2**
CO4	demonstrate knowledge of various expressions used to express opinions, emotions, cause, effect, purpose and hypothesis in French	**K4**
CO5	communicate in French and summarize a given text	**K5**

Relationship Matrix											
Semester	**Course code**	**Title of the Course**								**Hours**	**Credits**
1	**21UFR11GL01**	**French - 1**								**5**	**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	3	3	1	3	1	3	3	2	3	2	2.4
CO2	2	3	3	2	1	3	3	3	3	2	2.5
CO3	1	3	2	1	2	2	2	2	3	2	2.0
CO4	3	3	3	3	3	3	3	2	3	2	2.8
CO5	3	3	3	3	2	3	3	3	3	2	2.8
Mean overall Score											**2.5 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UHI11GL01	Hindi - 1	5	3

Course Objectives
To understand the basics of the Hindi Language.
To make the students familiar with the Hindi words.
To enable the students to develop their effective communicative skills in Hindi.
To introduce the socially relevant subjects in Modern Hindu Literature.
To empower the students with globally employable soft skills.

Unit I: Buniyadi Hindi **(15 Hours)**

1. Swar
2. Vyanjan
3. Barah Khadi
4. Shabd aur
5. Vakya Rachna

Unit II: Hindi Shabdavali **(15 Hours)**

6. Rishto ke Naam
7. Gharelu padartho ke Naam

Unit III: Vyakaran **(15 Hours)**

8. Sadharan Vakya aur Sangya
9. Sarvanam
10. Visheshan
11. Kriya aadi shabdo ka prayog

Unit IV: Chote Gadyansh ka pattan **(15 Hours)**

12. Bachom ki Kahaniyam
13. Patra-Patrikao mein Prakashit Gadyansho ka Pattan

Unit V: Nibandh **(15 Hours)**

14. Sant Tiruvalluvar
15. E.V.R Thandai Periyar
16. Naari Sashakthikaran
17. Paryavaran Sanrakshan
18. Vibhinna pratiyogi parikshao ke bare mein jaankari dena
19. Pratiyogi priksha par adharit nibandho dwara bhasha ki kshamta badhane vale prashikshan kary.

Teaching Methodology	Videos, PPT, Quiz, Group Discussion, Project Work.

Books for Study

1. *Prathamic Patya Pusthak* (2022). Dakshina Bharath Hindi Prachara Sabha, Chennai,
2.Chandran, R.M. (2017). *Concise Trilingual Dictionary,* Lotus Publications, Madurai.
3. Gupth, K.M. (2020). *Hindi Vyakaran*, Anand Prakashan, Kolkatta.
4. *Madyama Patya Pusthak* (2022). Dakshina Bharath Hindi Prachara Sabha, Chennai.

Books for Reference

1. Abdul Kalam, A.P.J. (2020). *Mere sapnom ka Bharath*. Prabath Prakashan, Noida.
2. *Meri Pratham Hindi Sulekh Shabd Gyaan*, Wonder House Books, Noida.
3. Kumar, A. (2019). *Sampoorna Hindi Vyakaran our Rachana*. Lucent publisher.
4. *Adhunik Hindi Vyakaran our Rachana.* (2018). Bharati Bhavan Publishers & distributors.
5. Shukla, A.R. (2021). *Hindi Sahitya Ka Itihas.*. Prabhat Prakashan.

Websites and e-Learning Sources

1. https://learningmole.com/hindi-alphabet-letters-pronunciation-guide/
2. https://www.careerpower.in/hindi-alphabet-varnamala.html
3. https://www.youtube.com/watch?v=b0UvXnIC8qc
4. https://www.importanceoflanguages.com/learn-hindi-language-guide/
5. https://parikshapoint.com/hindi-sahitya/

Course Outcomes		
CO No.	**CO-Statements**	**Cognitive Levels (K - Level)**
	On successful completion of this course, students will be able to	
CO1	match the sounds of Hindi letters with their written counterparts.	**K1**
CO2	infer the meaning of unknown words from the given context	**K2**
CO3	construct sentences in Hindi	**K3**
CO4	analyse stories and other passages	**K4**
CO5	interpret general essays given in competitive exams	**K5**

Relationship Matrix											
Semester	**Course code**	**Title of the Course**								**Hours**	**Credits**
1	**23UHI11GL01**	**Hindi - 1**								**5**	**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	3	2	2	1	3	3	3	1	3	2	**2.3**
CO2	2	3	2	3	1	2	3	3	3	2	**2.4**
CO3	3	2	2	2	1	3	2	3	2	3	**2.3**
CO4	3	1	2	3	2	3	2	3	3	2	**2.4**
CO5	2	3	3	2	3	2	3	3	1	3	**2.5**
Mean overall Score											**2.38 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23USA11GL01	Sanskrit- 1	5	3

Course Objectives
To help students learn the Sanskrit alphabet.
To understand Sanskrit grammar and *sabdas*.
To have an idea of the epics.
To closely understand the literary works in Sanskrit with special reference to *Pancamahakavyas*.
To understand the *Raghuvasa Mahakava* and *Kalidasa*.

Unit I: Introduction to Sanskrit **(15 Hours)**
(Alphabet, Two letter words and three letter words) Grammar
akārāntaḥpuṁliṅgaḥśabda-s - 1. बाल (*Bāla*) and
2. देव (*Deva*) *ākārāntaḥstrīliṅgaḥśabda-s* - 1. बाला (*Bālā*) and
2. लता (*Latā*) *akārāntaḥnapuṁsakaliṅgaḥśabda-s* - 1. फल (*Phala*) and 2. वन (*Vana*)

Unit II: Introduction to *Rāmāyana, Kālidāsa* and his poetic works **(15 Hours)**
Raghuvaṁśa (Canto I) Verses 1-15

Unit III: Introduction to the Works of *Bhāravi* **(15 Hours)**
Raghuvaṁśa (canto I) Verses 16-30

Unit IV: Introduction to the works of *ŚrīHarṣha* **(15 Hours)**
Raghuvaṁśa (Canto I) Verses 31-45

Unit V: Grammar **(15 Hours)**
Conjugations -*Laṭlakāra-s* – (Present tense)
(i) गच्छतत (*Gacchati*)
(ii) ततष्ठतत (*Tiṣṭhati*)
(iii) पठतत (*Paṭhati*)
(iv) नृत्यतत (*Nṛtyati*)
(v) कुप्यतत (*Kupyati*)
(vi) कथयतत (*Kathayati*) गणयतत (*Gaṇayati*)
(viii) अततत (*Asti*)
(ix) करोतत (*Karoti*)
(x) शृणोतत (*Śṛṇoti*) Indeclinables (Avyayaani) - अतप (*api*), कदा (*kadā*), च (*ca*), अद्य (*adya*), तवना (*vinā*),सह (*saha*),तत्र (*tatra*), ककमे (*kim*), यकद (*yadi*) - तर्हि (*tarhi*), यथा

(*yathā*) - तथा (*tathā*) Prefixes (*Upasargas*) - आङ् (*āṅ*), तव (*vi*), परर (*pari*), अनु (*anu*), अित (*adhi*), उत् (*ut*), प्रतत (*prati*), उप (*upa*), प्र (*pra*) तनर् (*nir*)

Teaching Methodology	Videos, PPT, demonstration.

Book for Study

Murugan, C., et al. (eds.). (2022) *Kalasala-Samskrta-Sukhabodhini-I* (For Undergraduate Foundation Course).University of Madras.

Book for Reference

Vadhyar, R. S. (2017). *Sabdha Manthari.* Vadhyar & Sons.

Websites and e-Learning Sources

1. https://www.arlingtoncenter.org/Sanskrit%20Alphabet.pdf
2. https://courses.lumenlearning.com/suny-hccc-worldcivilization/chapter/sanskrit/
3. https://www.newworldencyclopedia.org/entry/Sanskrit_literature
4. https://archive.org/details/AShortHistoryOfsanskritLiterarure
5. https://archive.org/details/raghuvamsha_with_sanjivini_edited_by_mr_kale

Course Outcomes		
CO No.	**CO-Statements**	**Cognitive Levels (K - Level)**
	On successful completion of this course, students will be able to	
CO1	remember the usage of grammatical tenses in constructing sentences in dialogue.	**K1**
CO2	apply the rules of usage in practice exercises and spot the errors	**K2**
CO3	explain the nuances in the usage of various grammatical tenses and aspects	**K3**
CO4	demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in Sanskrit	**K4**
CO5	communicate in Sanskrit and summarize a given text	**K5**

Relationship Matrix											
Semester	**Course code**		**Title of the Course**							**Hours**	**Credits**
1	**23USA11GL01**		**Sanskrit - 1**							**5**	**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	1	3	2	3	1	3	2	3	2	2	**2.2**
CO2	2	3	2	3	1	2	2	3	2	3	**2.3**
CO3	3	2	2	2	2	2	3	2	3	2	**2.3**
CO4	3	2	3	2	2	3	3	2	3	2	**2.3**
CO5	3	2	3	3	2	2	3	2	3	3	**2.6**
Mean overall Score											**2.38 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	**23UEN12GE01**	General English - 1	**5**	**3**

Course Objectives
To enable learners to acquire self awareness and positive thinking required in various life situations
To help them acquire the attribute of empathy
To assist them in acquiring creative and critical thinking abilities
To enable them to learn the basic grammar
To assist them in developing LSRW skills

UNIT I: Self-awareness ELF-A (WHO) & Positive Thinking (UNICEF) (15 Hours)

Life Story

1. Chapter 1 from Malala Yousafzai, I am Malala
2. An Autobiography or The Story of My Experiments with Truth (Chapters 1, 2 & 3) M.K. Gandhi

Poem

3. Where the Mind is Without Fear – Gitanjali 35 – Rabindranath Tagore
4. Love Cycle – Chinua Achebe

UNIT II: Empathy (15 Hours)

Poem

5. Nine Gold Medals – David Roth
6. Alice Fell or poverty – William Wordsworth

Short Story

7. The School for Sympathy – E.V. Lucas
8. Barn Burning – William Faulkner

UNIT III: Parts of Speech (15 Hours)

9. Articles
10. Noun
11. Pronoun
12. Verb
13. Adverb
14. Adjective
15. Preposition

UNIT IV: Critical & Creative Thinking. (15 Hours)

Poem

16. The Things That Haven't Been Done Before – Edgar Guest
17. Stopping by the Woods on a Snowy Evening – Robert Frost

Readers Theatre

18. The Magic Brocade – A Tale of China

19. Stories on Stage – Aaron Shepard (Three Sideway Stories from Wayside School" by Louis Sachar)

Unit V: Paragraph and Essay Writing (15 Hours)

20. Descriptive
21. Expository
22. Persuasive
23. Narrative
24. Reading Comprehension

Teaching Methodology	Interactive methods, and multimedia presentations

Books for Study

1. Yousafzai, M. (2013). *I am Malala, Little.* Brown and Company.
2. Gandhi, M. K. (2011). *An Autobiography or The Story of My Experiments with Truth (Chapter – I).* Rupa Publications.
3. Tagore, R. (1913). *"Gitanjali 35" from Gitanjali (Song Offerings): A Collection of Prose Translations Made by the Author from the Original Bengali.* MacMillan.
4. Shepard, A. (2017). *Stories on Stage.* Shepard Publications.

Books for Reference

1. Krishnasamy. N. (1975). *Modern English: A Book of Grammar, Usage and Composition.* Macmillan.
2. Nesfield, J. C. (2019). *English Grammar Composition and Usage.* Macmillan.

Web Reources

1. https://archive.org/details/i-am-malala
2. https://www.indiastudychannel.com/resources/146521- Book-Review-An-Autobiography-or-The-story-of-my-experiments-with-Truth.aspx
3. https://www.poetryfoundation.org/poems/45668/gitanjali-35
4. https://amzn.eu/d/9rVzlNv
5. https://archive.org/details/in.ernet.dli.2015.44179

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Levels)**
CO1	discover self awareness and positive thinking required in various life situations	**K1**
CO2	classify the attributes of empathy	**K2**
CO3	apply creative and critical thinking skills	**K3**
CO4	focus on grammar for functional purposes	**K4**
CO5	integrate the LSRW skills for effective communication	**K5**

Relationship Matrix											
Semester	**Course code**		**Title of the Course**							**Hours**	**Credits**
1	**23UEN12GE01**		General English - 1							**5**	**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
CO2	**2**	**3**	**3**	**3**	**2**	**3**	**3**	**3**	**3**	**3**	**2.5**
CO3	**3**	**3**	**3**	**2**	**3**	**3**	**3**	**3**	**3**	**2**	**2.8**
CO4	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
CO5	**3**	**2**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2.8**
Mean overall Score											**2.82 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UST13CC01	**Core Course - 1:** Descriptive Statistics	5	5

Course Objectives
It explains the important concepts of statistics and statistical data.
It provides to formulate the visualization of frequency distribution.
Also they measure the averages, dispersions, lack of symmetry, moments, relationship among variables.
Estimate and predict the unknown and future values.
Study of non-linear and consistency of the data.

UNIT I **(15 Hours)**

Statistics: Introduction - Definition – Functions - Applications - Limitations. Organizing a Statistical Survey: Planning the survey - Executing the survey-Collection of Data: Primary and secondary data - Methods of collecting primary data - Sources of secondary data. Sampling: Census and Sample methods. Classification-Types - Formation of frequency distribution-Tabulation - parts of a Table - Types. Diagrammatic representation – Types. Graphical representation - Graphs of frequency distributions. Merits and Limitations of diagrams and graphs.

UNIT II **(15 Hours)**

Measures of Central tendency: Introduction-Definitions-Types - Mean-Median-Mode-Geometric mean-Harmonic Mean-Weighted mean - Merits and Demerits-Measures of Dispersion: Introduction – Definition – Types – Range - Quartile deviation - Mean deviation - Standard deviation - Co-efficient of variation – Lorenz curve - Merits and Demerits.

UNIT III **(15 Hours)**

Skewness: Introduction-Definition-Types-Karl Pearson's – Bowley's - Kelly's methods – Their merits and demerits. Kurtosis: Introduction-Definition-Types-Its merits and demerits. Moments: Introduction - Definition-Types - Raw, Central moments and their relations.

UNIT IV **(15 Hours)**

Correlation analysis: Introduction - Definition - Types – Ungrouped and Grouped data – Probable error – properties - Rank correlation – Partial and Multiple correlations - Regression analysis: Introduction - Definition – Regression Equations -Multiple regression.

UNIT V **(15 Hours)**

Theory of Attributes: Introduction – Definition-Classes and Class frequencies-Consistency of data-Independence of attributes-Association of attributes-Yule's coefficient and -Coefficient of Colligation.

Teaching Methodology	YouTube videos, PPT, Black Board teaching and Handouts.

Books for Study

1. Gupta, S.P. (2017). *Statistical methods* (35th Rev. ed). Sultan Chand & Sons Pvt Ltd.
2. Gupta S. C & Kapoor, V.K. (2002). *Fundamentals of mathematical statistics*. Sultan Chand & Sons Pvt. Ltd.

Books for Reference

1. Goon, A.M., Gupta, A.K. & Dasgupta, B. (1987). *Fundamental of Statistics* (vol.:2). World Press Pvt. Ltd., Kolkatta.
2. Yule, G. U. & Kendall, M.G. (1956). *An introduction to the theory of statistics*. Charles Griffin.
3. Spiegel, M.R. (1961). *Theory and problems of statistics*. Schaum's outline series.
4. Anderson, T.W. & Sclove, SL. (1978). *An introduction to statistical analysis of data*. Houghton Miffin & co.
5. Pillai, R.S., & Bagavathi. (2003). *Statistics*. S. Chand and Company Ltd., New Delhi.

Web Sources

1. e-books, tutorials on MOOC/SWAYAM courses on the subject
2. https://en.wikipedia.org/wiki/Statistics
3. https://en.wikipedia.org/wiki/Descriptive_statistics
4. https://socialresearchmethods.net/kb/statdesc.php
5. http://onlinestatbook.com/2/introduction/descriptive.html

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	acquire the knowledge of Statistics and its scope and importance in various areas	**K1**
CO2	draw and explain the visual representation of the given set of data	**K2**
CO3	compute the various measures of averages, dispersions, lack of symmetry, moments and relationship among variables	**K3**
CO4	distinguish between different types and classification of data	**K4**
CO5	execute and analyse a sample survey.	**K5**

Relationship Matrix											
Semester	**Course code**	**Title of the Course**								**Hours**	**Credits**
1	**23UST13CC01**	**Core Course - 1:** Descriptive Statistics								**5**	**5**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	**3**	**2**	**2**	**2**	**2**	**3**	**3**	**2**	**1**	**1**	**2.1**
CO2	**3**	**2**	**3**	**3**	**1**	**2**	**2**	**2**	**2**	**2**	**2.2**
CO3	**3**	**3**	**2**	**3**	**1**	**2**	**3**	**3**	**3**	**2**	**2.5**
CO4	**3**	**2**	**3**	**3**	**2**	**3**	**2**	**3**	**2**	**2**	**2.5**
CO5	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2.46**
Mean overall Score											**2.46 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UST13CC02	**Core Course - 2**: Probability Theory	5	5

Course Objectives
To describe the importance and scope of probability theory and to predict the chance of an experimental outcomes.
Distinguish between discrete and continuous random variables.
Understand the joint probability mass function and joint density function with two dimensional random variables.
To learn and be able to apply the properties of mathematical expectation.
Compute the probability values for sum of random variables using central limit theorem

UNIT I **(15 Hours)**

Theory of Probability: Introduction-Basic terminology- Definition - Axiomatic approach – Types of Events - Conditional Probability - Addition and Multiplication theorems of Probability for 'two' and 'n' events (Statement and Proof) - Boole's inequality (Statement and Proof)- Bayes' theorem of Probability (Statement and Proof with numerical illustration - very simple problems)

UNIT II **(15 Hours)**

Random variables and Distribution functions: Introduction - Discrete random variable: Probability mass function- Discrete distribution function, Properties. Continuous random variable : Probability density function and properties, measures of central tendency, dispersion, Skewness and kurtosis for continuous Probability distribution.

UNIT III **(15 Hours)**

Two dimensional random variables: Joint probability mass function- Marginal probability function, Conditional probability function. Two dimensional distribution functions-Marginal distribution functions - Joint density function-Marginal density function - Conditional distribution function - Conditional probability density function. Transformation of One - Dimensional and Two Dimensional random variable (concept only).

UNIT IV **(15 Hours)**

Mathematical Expectations: Introduction- Expected value of a random variable (Discrete and Continuous)-Expected value of function of a random variable - Properties of Expectation-Properties of variance- Covariance. Inequalities involving expectation: Cauchy Schwartz and Markov inequalities.

UNIT V **(15 Hours)**

Generating functions: M.G.F - Properties - Uniqueness theorem - C.G.F – Properties - P.G.F -Properties. Characteristic Function: Properties–Inversion theorems (Statement only) - Uniqueness theorem (Statement only). Chebychev's Inequality (Statement and Proof). Law of Large Numbers (L.L.N): Convergence in probability - Properties: Weak L.L.N - properties- Bernoulli's L.L.N (Statement and Proof) - Khinchin's theorems (Statement only).

Teaching Methodology	YouTube videos, PPT and Handouts.

Books for Study

1. Gupta S.C. & Kapoor V.K. (2015). *Fundamentals of mathematical statistics*. Sultan Chand & Sons.

Books for Reference

1. Rohatgi, V.K. (1984). *An introduction to probability theory and mathematical statistics.*
2. Hogg. R.V. & Craig. A.T. (1978). *Introduction to mathematical statistics.* McGraw Hill Publishing Co. Inc., New York.
3. Mood A.M., Graybill, F.A. & Bose, D.C. (1974). *Introduction to the theory of Statistics.* McGraw Hill Publishing Co. Inc., New York.
4. Arora, S. & Lal, B. (1989). *New mathematical statistics*. Satya Prakashan, New Delhi.

Web Sources

1. e-books, tutorials on MOOC/SWAYAM courses on the subject
2. www.khanacademy.org/math/statistics-probability/random-variables-stats-library
3. https://ocw.mit.edu/courses/mathematics/18-440-probability-and-random-variables-spring-2014/

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	match the real-life situations with probability concepts.	**K1**
CO2	understand the basic probability theorems and its properties.	**K2**
CO3	apply probability concepts into real life examples	**K3**
CO4	analyze discrete and continuous random variables	**K4**
CO5	evaluate the appropriate probability function, parameters, expectations and generating functions	**K5**

Relationship Matrix											
Semester	**Course code**	**Title of the Course**								**Hours**	**Credits**
1	**23UST13CC02**	**Core Course - 2**: Probability Theory								**5**	**5**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	**2**	**3**	**3**	**1**	**1**	**3**	**2**	**3**	**2**	**1**	**2.1**
CO2	**2**	**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**2.6**
CO3	**2**	**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**2.6**
CO4	**3**	**1**	**1**	**3**	**3**	**1**	**2**	**1**	**3**	**3**	**2.1**
CO5	**3**	**1**	**1**	**3**	**3**	**1**	**2**	**1**	**3**	**3**	**2.1**
Mean overall Score											**2.3 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UST13AC01	**Allied Course - 1:** Mathematics for Statistics -1	4	3

Course Objectives
The overall objective of the study is to create deep interest in learning mathematics which develop broad and balance knowledge and understanding definitions, concepts, principles and theorems
It helps the students to enhance the ability of learners to apply the knowledge and skill acquired by them to solve specific theoretical and applied problems in statistics
It also encourages the students to develop a range of generic skill helpful in employment, internships in social activities

UNIT I (**12 Hours**)

Rational fractions: Proper and improper rational fractions. Partial fractions: Forms of partial fractions.

UNIT II (**12 Hours**)

Series: Summation and approximations related to Binomial, Exponential and Logarithmic series -Taylor's series, Fourier series for even and odd functions.

UNIT III (**12 Hours**)

Theory of equations: Polynomial equations with real coefficients- imaginary and irrational roots-solving equations with related roots-equation with given numbers as roots-equation whose roots are symmetric functions of roots.

UNIT IV (**12 Hours**)

Differential calculus: Functions – Different types – simple valued and many valued – Implicit and Explicit functions, Odd and even functions, periodic functions, algebraic and transcendental functions. Inverse functions, Limit of a function – Some standard limit (without proof) Differentiation of standard functions- standard rules of differentiation- Addition, subtraction, multiplication and quotient rules – function of function rule.

UNIT V (**12 Hours**)

Successive differentiation: Leibnitz's theorem, nth derivatives of standard functions – simple problems. Partial differentiation: Successive partial differentiation. Maxima and Minima for two variable functions. Homogenous function – Euler's theorem on homogenous function.

Teaching Methodology	Chalk and Talk, YouTube videos, PPT and Handouts.

Books for Study

1. Duraipandian, P. & Udayabaskaran, S. (2014). *Allied mathematics* (Vols.: 1-2). S. Chand & Company Pvt. Ltd.
2. Vittal, P.R. (2012). *Allied mathematics*. Margham Publications.
3. Narayanan, S. & Manickavachagam Pillai. (1993). *Ancillary mathematics* (Book II): (Containing Differential Calculus). S. Viswanathan Pvt, Ltd.

Books for Reference

1. Narayanan, S. & Manickavachagam Pillai. (1993). *Ancillary mathematics* (Vol.:2, Part I): (Containing Trignometry). S. Viswanathan Pvt. Ltd.
2. Narayanan, S. & Manickavachagam Pillai. (1993). *Ancillary mathematics* (Book I): (Containing Algebra). S. Viswanathan Pvt. Ltd.
3. Venkatesan, S. J. (2019). *Algebra.* Sri Krishna Publications.

Web Sources

1. e-books, tutorials on MOOC/SWAYAM courses on the subject

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	identify the types of fractions, series and roots.	**K1**
CO2	understand the basic concepts of functions, series, theory of equations, differential calculus and successive differentiation.	**K2**
CO3	apply the mathematical concepts in real life problems.	**K3**
CO4	Analyze the importance of functions, series, equations and differential calculus.	**K4**
CO5	Critical thinking of mathematical problems.	**K5**

Relationship Matrix											
Semester	**Course code**		**Title of the Course**							**Hours**	**Credits**
1	**23UST13AC01**		**Allied Course - 1:** Mathematics for Statistics -1							**4**	**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	**3**	**2**	**3**	**2**	**2**	**2**	**3**	**3**	**1**	**2**	**2.3**
CO2	**2**	**3**	**3**	**2**	**2**	**1**	**2**	**3**	**3**	**2**	**2.3**
CO3	**2**	**3**	**2**	**2**	**3**	**2**	**1**	**3**	**2**	**3**	**2.3**
CO4	**3**	**1**	**2**	**2**	**3**	**3**	**1**	**1**	**2**	**3**	**2.1**
CO5	**3**	**2**	**3**	**2**	**3**	**3**	**2**	**2**	**1**	**3**	**2.4**
Mean overall Score											**2.28 (High)**

Semester	Course Code	Title of the Course	Hours / Week	Credits
1	23UST14FC01	**Foundation Course:** Statistics for Beginners	2	2

Course Objectives
To understand the concept of set theory
To know the basics of functions and relations
Acquire the knowledge of sequence and series of Arithmetic and Geometric progression
Understand the basics of differentiation and integration
To know the difference between Permutation and Combination

UNIT I (**6 Hours**)

Set Theory – Subset, Types of sets, Relations, Functions – (Simple problems).

UNIT II (**6 Hours**)

Sequence and Series – Introduction of sequence and series – Arithmetic and Geometric progression (Simple problems)

UNIT III (**6 Hours**)

Basic principles of counting, Factorial, Permutations and Combinations - (Simple problems)

UNIT IV (**6 Hours**)

Differentiation and Integration - Introduction to differentiation – introduction to integration (Simple problems)

UNIT V (**6 Hours**)

Statistics – Importance of Statistics, Population, Sample – quantitative and qualitative data. Collection of primary and secondary data. Measurement Scales – Nominal, Ordinal, Interval and Ratio.

Teaching Methodology	PPT, Chalk and talk and Handouts.

Books for Study

1. Navaneetham, P.A. (2007). *Business mathematics and statistics*. Jai Publishers.
2. Aggarwal, R. S. (2018). *Quantitative aptitude*. S. Chand & Company PVT. Ltd.
3. Gupta, S.P. (2017). *Statistical methods* (35th Rev. ed.). Sultan Chand & Sons Pvt Ltd, New Delhi.

Books for Reference

1. Gupta, S.C. & Kapoor, V.K. (2002). *Fundamentals of mathematical statistics*. Sultan Chand & Sons Pvt. Ltd.
2. Pillai, R.S. & Bagavathi. (2003). *Statistics*. S. Chand and Company Ltd.

Web Sources

1. https://www.icai.org/post.html?post_id=17790
2. https://en.wikipedia.org/wiki/Statistics

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	Acquire the knowledge of sets, sequence, permutation, combination, differential calculus, integral calculus, Statistics and its importance in various areas.	**K1**
CO2	Understand the data and its relevance in business and develop an understanding of quantitative problems.	**K2**
CO3	Apply the quantitative methods to solve the real life problems	**K3**

Relationship Matrix											
Semester	**Course code**	**Title of the Course**								**Hours**	**Credits**
1	**23UST14FC01**	**Foundation Course:** Statistics for Beginners								**2**	**2**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	**3**	**3**	**2**	**2**	**1**	**3**	**3**	**2**	**1**	**2**	**2.2**
CO2	**2**	**3**	**2**	**3**	**2**	**2**	**3**	**2**	**2**	**3**	**2.4**
CO3	**3**	**2**	**3**	**2**	**2**	**3**	**2**	**1**	**3**	**2**	**2.3**
Mean overall Score											**2.3 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UST14SE01	**Skill Enhancement Course – 1 (Non Major Elective):** Basics of Statistics	2	2

Course Objectives
To learn the basic Statistical concepts
It will help the students in the field of data collection
To solve specific theoretical and applied problems in statistics
It also encourages the students to develop a range of generic skill helpful in employment, internships in job opportunities
To know the relationships of the variables

UNIT I **(6 Hours)**

Statistics - Introduction, Origin, Meaning, Scope, Uses, Misuses and Limitations. Primary data - Methods of collection - Secondary data sources.

UNIT II **(6 Hours)**

Classification and Tabulation of data - Formation of frequency tables - Univariate and Bivariate Cases – Types of presentation - Diagrammatic representation.

UNIT III **(6 Hours)**

Measures of Central Tendency: Arithmetic Mean, Median, Mode, Geometric mean, Harmonic mean - Characteristics of a good average.

UNIT IV **(6 Hours)**

Measures of Dispersion: Range - Quartile deviation - Mean deviation – Standard deviation

UNIT V **(6 Hours)**

Correlation: Introduction – Types of correlation – Karl Pearson's coefficient of correlation - Spearman's rank correlation coefficient.

Teaching Methodology	Chalk and Talk, YouTube videos, PPT and Handouts.

Books for Study

1. Gupta, S.P. (2021). *Statistical methods* (46th ed). Sultan Chand & Sons Educational Publisher.

Books for Reference

1. Gupta, S.C & Kapoor, V.K. (2002). *Fundamentals of mathematical statistics*. Sultan Chand & Sons Pvt. Ltd.

Web Sources

1. e-books, tutorials on MOOC/SWAYAM courses on the subject

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	Compute various measures of averages, dispersion and relationships among the variables	**K3**
CO2	Distinguish between types and classification of data	**K4**
CO3	Analyse the importance of variables	**K5**

Relationship Matrix

Semester	Course code	Title of the Course							Hours	Credits
1	23UST14SE01	**Skill Enhancement Course – 1 (Non Major Elective):** Basics of Statistics							2	2
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	3	2	3	2	3	2	1	3	3	2	2.4
CO2	2	3	2	2	3	1	3	3	2	3	2.4
CO3	3	3	3	2	2	1	2	3	3	3	2.5
Mean overall Score											**2.43 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
1	23UHE14VE01	**Value Education - 1:** Essentials of Humanity	2	1

Course Objectives
To identify one's own potentials, strengths and weaknesses
To identify various challenges (physical, emotional, and social) in adolescence
To consciously overcome one's challenges and move towards self-esteem
To maximize one's own potential in enabling a holistic development
To assimilate human values comprehensively

UNIT I: Principles of Value Education

Introduction to values - Characteristics and Roots of Values - Value Education & Value Clarification - Moral Characters - Kinds of Values - Objectives of Values

UNIT II: Development of Human Personality

Personality: Introduction, Theories, Integration & Factors influencing the development of personality - SEL Series - Discovering self - Defence Mechanism Power of positive thinking - Why worry?

UNIT III: The Dimensions of Human Development

Areas of Development: Physical, Intellectual, Emotional, Social Development, Moral & Spiritual development

UNIT IV: Responsible Parenthood

Human Sexuality - Marriage and Family - Sex and Love - Characteristics of Responsible parent - Causes of Marriage disharmony - Art of wise parenting

UNIT V: Gender Equality and Empowerment

Historical perspective - Women in Independence struggle - Women in Independent India - Education & Economic development - Crimens against Women - Women rights - Time-line of Women achievements in India

Teaching Methodology	

Book for Study

Department of Human Excellence. (2021). *Essentials of Humanity.* St. Joseph's College.

Books for Reference

1. Xavier, A. (2012). *You Shall Overcome,* (6th ed.). ICRDE Publication.
2. Alex, K. (2009). *Soft Skills.* S. Chand.
3. Kalam, A.A. P. J. (2012). *You Are Unique.* Punya Publishing.

Websites and eLearning Sources

1. http://livingvalues.net. Accessed 05 March 2021.
2. http://www.apa.org/topics/personality#. Accessed 05 March 2021.
3. http://www.peacecorps.gov/educators/resources/global-issues-gender-equaligy-and-womens-empowerment/. Accessed 05 March 2021.

Course Outcomes		
CO No.	**CO-Statements**	**Cognitive Levels (K - Level)**
	On completion of this course, students will be able to	
CO1	recall the prescribed values and their dimensions.	**K1**
CO2	examine themselves by learning the developmental changes happening in the course of their lifetime.	**K2**
CO3	Apply the trained values in the day-to-day life.	**K3**

Relationship Matrix											
Semester	**Course code**	**Title of the Course**								**Hours**	**Credits**
1	**23UHE14VE01**	**Value Education - 1:** Essentials of Humanity								**2**	**1**
Course Outcomes	**Programme Outcomes(POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	3	3	3	3	2	3	3	2	3	3	
CO2	3	2	2	3	3	2	3	3	2	2	
CO3	2	3	3	3	2	3	3	3	3	3	
Mean overalls core											

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UTA21GL02	General Tamil - 2	4	3

கற்றலின் நோக்கங்கள்
தமிழ் இலக்கிய வரலாற்றை அறிதல்.
எழுத்து, சொல் இலக்கணங்களின் அடிப்படைகளைக் கண்டறிதல்.
அயலகக் கவிதை வடிவங்களை விளங்கிக் கொள்ளுதல்.
மொழிபெயர்ப்புக் கவிதைகளின் வாயிலாக மொழிபெயர்ப்புத் திறனை வளர்த்தெடுத்தல்.
போட்டித் தேர்வுகளை எதிர்கொள்வதற்கான இலக்கண அறிவு பெறுதல்.

அலகு – 1 **(12 மணிநேரம்)**

பாரதியார் கவிதைகள் – குயில்பாட்டு (குயில் தன் பூர்வ ஜென்மக் கதை உரைத்தல்)
பாரதிதாசன் கவிதைகள் – சஞ்சீவி பர்வதத்தின் சாரல்
நற்றமிழ்க்கோவை – முதல் மூன்று கட்டுரைகள்

அலகு - 2 **(12 மணிநேரம்)**

வெ.இராமலிங்கனார் – சொல், தமிழன் இதயம்
முடியரசனார் – உயிர் வெல்லமோ, மனத்துயர்மை
பெருஞ்சித்திரனார் – அஞ்சாதீர், மொழி,இனம்,நாடு
பட்டுக்கோட்டை கலியாண சுந்தரனார் – வருங்காலம் உண்டு, உழைக்காமல் சேர்க்கும் பணம்
இலக்கணம் – எழுத்து
இலக்கிய வரலாறு – புதுக்கவிதை, தமிழில் புதிய கவிதை வடிவங்கள்

அலகு–3 **(12மணி நேரம்)**

சுரதா - நல்ல தீர்ப்பு
கண்ணதாசன் - ஒரு பானையின் கதை
அப்துல் ரகுமான்- வீடு
மேத்தா - ஒரேகுரல்
இலக்கிய வரலாறு – தமிழ்ச்சிறுகதைகள், இருபதாம் நூற்றாண்டு உரைநடை வளர்ச்சி
சிறுகதை – முதல் மூன்று சிறுகதைகள்

அலகு – 4 **(12 மணிநேரம்)**

அரசியல் கவிதைகள்
ஈரோடு தமிழன்பன்- அகல் விளக்காக இரு
ஆதவன் தீட்சண்யா– இன்னும் இருக்கும் சுவர்களின் பொருட்டு
சுகிர்தராணி– என் கண்மணியே இசைப்பிரியா
சக்தி ஜோதி – யுகாந்திர உறக்கம்
பழநி பாரதி- வெள்ளைக்காகிதம்
லிவிங்ஸ்மைல் வித்யா – நினைவில் பால்யம் அழுத்தம்
இலக்கணம் - சொல்

அலகு – 5 **(12 மணிநேரம்)**

அயலகக் கவிதைகள்
ஓசேரிசால் (தமிழில் நெய்தல்)- விடைகொடு என்தாய் மண்ணே
ஹைபுன் கவிதைகள்
சிறுகதை – நான்கு முதல் ஆறு சிறுகதைகள்
நற்றமிழ்க் கோவை – நான்கு முதல்ஆறு கட்டுரைகள்

கற்பித்தல் முறை (Teaching Methodology)	**விரிவுரை** (Lecture), **காணொளிக் காட்சி** (Videos), **விளக்கக் காட்சி** (PPT presentation)

பாடநூல்கள்

1. *தமிழாய்வுத்துறை* (2023). *பொதுத்தமிழ் -2, தூய வளனார் தன்னாட்சிக் கல்லூரி.*
2. *தமிழாய்வுத்துறை* (2021). *நற்றமிழ்க் கோவை, தூய வளனார் தன்னாட்சிக் கல்லூரி.*

Websites and eLearning Sources

1. https://www.chennailibrary.com/bharathiyar/kuyilpattu.html
2. www.tamildigitallibrary.in
3. https://eluthu.com/kavithai
4. https://podhutamizh.blogspot.com/2017/09/blog-post_42.html
5. https://thamizhsudar.com
6. https://ta.wikipedia.org/wiki

Course Outcomes		
CO No.	**CO-Statements** ***இப்பாடத்தின் நிறைவில் மாணவர்கள்***	**Cognitive Levels (K - Level)**
CO1	*தமிழ் இலக்கிய நூல்கள் பற்றிய அறிவைப் பெறுவர்.*	**K1**
CO2	*தமிழ் இலக்கண வளர்ச்சியைப் புரிந்து கொள்வர்.*	**K2**
CO3	*பிழையின்றி எழுதும் திறன் பெறுவதோடு கற்றல் திறனையும் வளர்த்துக்கொள்வர்.*	**K3**
CO4	*பிற கவிதை வடிவங்களைக் கையாளும் திறன் பெறுவர்.*	**K4**
CO5	*போட்டித் தேர்வுகளை எதிர்கொள்ளும் திறனைப் பெறுவர்.*	**K5**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**					**Hours**		**Credits**
2	**23UTA21GL02**			General Tamil - 2					**4**		**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	2	1	2	2	3	3	3	2	3	2	**2.3**
CO2	2	1	2	2	2	3	2	2	2	2	**2.0**
CO3	2	1	2	2	3	3	3	2	3	2	**2.3**
CO4	1	2	1	2	2	3	2	2	3	2	**2.0**
CO5	1	1	2	2	3	3	3	2	3	2	**2.2**
										Mean Overall Score	**2.16 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UFR21GL02	French - 2	4	3

Course Objectives
To construct simple phrases with pronominal verbs
To apply the different types of articles
To understand the usage of pronouns
To analyse the French culture through French culinary art
To evaluate and compare the French fashion in current scenario

UNIT I: **(12 Hours)**

- TITRE: Les Loisirs
- GRAMMAIRE : les adjectifs interrogatifs, les nombres ordinaux, les verbes pronominaux
- LEXIQUE : les différentes activités quotidiennes, les loisirs, les activités quotidiennes, les matières
- PRODUCTION ORALE : parler sur votre passe-temps
- PRODUCTION ECRITE : décrire sa journée

UNIT II: **(12 Hours)**

- TITRE: La routine
- GRAMMAIRE : les pronoms personnels COD, les verbes du premier groupe en e/er/eler/eter, le verbe prendre
- LEXIQUE : exprimer ses goûts et ses préférences, le temps, l'heure, la fréquence
- PRODUCTION ORALE : savoir comment dire l'heure
- PRODUCTION ECRITE : écrire vos préférences en quelques lignes

UNIT III: **(12 Hours)**

- TITRE: Où Faire Ses Courses?
- GRAMMAIRE : les articles partitifs, le pronom en (la quantité), très ou beaucoup
- LEXIQUE : inviter et répondre à une invitation, les commerces et les commerçants, demander et dire le prix, les quantités
- PRODUCTION ORALE : faire des courses pour une soirée
- PRODUCTION ECRITE : écrire un message en acceptant l'invitation

UNIT IV: **(12 Hours)**

- TITRE: Découvrez et Dégustez
- GRAMMAIRE : l'impératif, il faut, les verbes devoir, pouvoir, savoir, vouloir
- LEXIQUE : Commander et commenter sur un plat de la carte, les aliments, les services, les moyens de paiement
- PRODUCTION ORALE : Jeu de rôle – au restaurant (entre vous et le garçon)
- PRODUCTION ECRITE : faire une comparaison avec la carte française et indienne

UNIT V: **(12 Hours)**

- TITRE: Tout le monde s'amuse/ les ados au quotidien
- GRAMMAIRE : les adjectifs démonstratifs, le pronom indéfini on, le futur proche, le passé composé, les verbes en –yer, voir et sortir
- LEXIQUE : connaître les marques connues sur les vêtements, les sorties, situer dans le temps, les vêtements et les accessoires

- PRODUCTION ORALE : décrire une tenue
- PRODUCTION ECRITE : écrire une lettre amicale, une carte postale

Teaching Methodology	Chalk and talk, visual cues like flashcards, one to one conversation

Book for Study

1. Dauda, P., Giachino, L. & Baracco, C. (2016). *Generation A1.* Didier.

Books for Reference

1. Girardet, J. & Pecheur, J. (2017). *Echo A1.* CLE International, (2nd Ed.).
2. Mérieux, R. & Loiseau, Y. (2012). *Latitudes A1.* Didier.
3. Fournier, I. (2011). *Talk French.* Goyal Publishers.

Websites and eLearning Sources

1. https://www.frenchtoday.com/blog/french-verb-conjugation/french-reflexive-verbs-list- exercises/
2. https://www.fluentu.com/blog/french/french-subject-pronouns/
3. https://grammarist.com/french/french-partitive-article/
4. https://www.talkinfrench.com/guide-french-food-habits/
5. https://www.fluentu.com/blog/french/talking-about-clothes-in-french/

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Levels)**
CO1	Relate pronominal verbs in expressing one's day today activity	**K1**
CO2	compare the different types of articles – article partitif and contracte	**K2**
CO3	construct texts using pronouns – passages and dialogues	**K3**
CO4	discover the food habits of the French culture	**K4**
CO5	appraise the French fashion	**K5**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**					**Hours**		**Credits**
2	**23UFR21GL02**			**French - 2**					**4**		**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	3	3	3	3	1	3	1	2	2	2	**2.2**
CO2	2	1	2	3	2	3	1	2	2	2	**2.0**
CO3	3	2	3	2	2	3	3	1	3	2	**2.4**
CO4	3	2	2	1	3	3	3	1	1	3	**2.2**
CO5	2	1	2	2	3	3	3	2	2	2	**2.2**
Mean Overall Score											**2.2 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UHI21GL02	HINDI - 2	4	3

Course Objectives
To understand the basics of Hindi Language
To make the students to be familiar with the Hindi words
To enable the students to develop their effective communicative skills in Hindi
To introduce the socially relevant subjects in Modern Hindi Literature
To empower the students with globally employable soft skills

UNIT I: **(12 Hours)**

- Kafan
- Letter Writing - Chutti Patra
- Bakthikal - Namakarn
- Sarkari Kariyalayom Ka Naam

UNIT II: **(12 Hours)**

- Baathcheeth - Dookan Mein
- Kriya
- Letter Writing - Rishthedarom Ko Patra
- Bakthikal - Samajik Paristhithiyam

UNIT III: **(12 Hours)**

- Vah Thodthi Patthar
- Adverb
- Letter Writing - Naukari Keliye Avedan Patra
- Bakthikal - Sahithyik Paristhithiyam

UNIT IV: **(12 Hours)**

- Mukthi
- Samas
- Letter Writing - Kitab Maangne Keliye Patra
- Bakthikal - Salient Features, Main Divisions

UNIT V: **(12 Hours)**

- Anuvad
- Sandhi
- Letter Writing - Nagarpalika Ko Patra
- Bakthikal - Visheshathayem

Teaching Methodology	Peer Instruction Exercise, Videos, PPT, Quiz, Group Discussion

Books for Study

1. Viswanath Tripaty. (2018). *Kuchh Kahaniyan*, Rajkamal Prakashan Pvt. Ltd.
2. Kamathaprasad Gupth, M. (2020). *Hindi Vyakaran*. Anand Prakashan.

3. Sadananth Bosalae. (2020). *kavya sarang*, Rajkamal Prakashan.

Books for Reference

1. Acharya Ramchandra Shukla. (2021). *Hindi Sahitya Ka Itihas*. Prabhat Prakashan.
2. Krishnakumar, G. (2016). *Anuvad vigyan ki Bhumika*. Rajkamal Prakashan.
3. Aravind Kumar. (2019). *Sampoorna Hindi Vyakaran our Rachana*, Lucent publisher.
4. Lakshman Prasad Singh. (2017). *Kavya ke sopan*. Bharathy Bhavan Prakashan.

Websites and e-Learning Sources

1. https://hindigrammar.in/sandhi.html
2. https://www.successcds.net/class10/hindi/samas-in-hindi
3. https://mycoaching.in/kriya-ke-bhed-verb-in-hindi
4. https://namastesensei.in/adverb-in-hindi-examples/
5. https://viahindi.in/hindi-vyakaran/sandhi-paribhasha-prakar-or-udaharan

Course Outcomes		
CO No.	**CO-Statements** On successful completion of the course, the student will be able to	**Cognitive Levels (K - Level)**
CO1	Find out the Terms & Expressions related to letter writing.	**K1**
CO2	Explain the works of Hindi writers.	**K2**
CO3	Complete the sentences in Hindi using basic grammar.	**K3**
CO4	Analyze the social & political conditions of Devotional period in Hindi Literature.	**K4**
CO5	Justify the human values stressed on the works of the following authors “Premchand, Nirala, etc.”.	**K5**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**				**Hours**		**Credits**	
2	**23UHI21GL02**			**HINDI - 2**				**4**		**3**	
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	2	3	3	2	2	3	3	3	2	2	**2.5**
CO2	1	3	1	2	2	3	3	3	2	3	**2.3**
CO3	3	2	3	2	2	3	2	3	2	2	**2.4**
CO4	2	3	3	1	3	2	3	2	1	2	**2.2**
CO5	3	2	2	2	3	2	3	2	3	2	**2.4**
										Mean Overall Score	**2.36 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23USA21GL02	Sanskrit - 2	4	3

Course Objectives
To bring out the salient aspects of classical Sanskrit poetry
To introduce court epics in Sanskrit
To train students in declensions of pronouns in Sanskrit
To coach the students in the conjugation patterns of verbs in Sanskrit
To offer coaching in morpho-phonemic rules and their applications in Sanskrit

UNIT I **(12 Hours)**

Asmathi usmath tat kim (MFN) sarvanaam asabdaha

UNIT II **(12 Hours)**

Sandhi Niyamaah Abhyaash (Guna , Visarga , Dirgha , Vrddhi)

UNIT III **(12 Hours)**

Lang lakaarah Kriyapadaani Prayoga Vivaranam

UNIT IV **(12 Hours)**

Raguvamsaha Pratama sargaha (1 –15 slokas)

UNIT V **(12 Hours)**

Suvacanani Vakya Prayoga Vivaranam

Teaching Methodology	Videos, PPT, Blackboard, Demonstration, Exercises

Books for Study

1. Saralasamkritham Skisha. (2021).
2. Dhaatu Manjari. (2021).

Books for Reference

1. Paindrapuram Ashram, Srirangam. (2019).
2. Vadhyar, R. S., & Sons, Book – Seller and Publishers. (2021).
3. Kulapthy, K. M. (2018). *Saral Sanskrit Balabodh*. Bharathiys Vidya Bhavan.

Websites and eLearning Sources

1. https://www.meritnation.com
2. https://www.aplustopper.com
3. https://mycoaching.in/lang-lakar
4. https://sanskritdocuments.org/sites/giirvaani/giirvaani/rv/sargas/01_rv.htm
5. https://resanskrit.com/blogs/blog-post/sanskrit-shlok-popular-quotes-meaning-hindi-english

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	Remembering names of different objects, remembering different verbal forms and sandhi	**K1**
CO2	Contrast different verbal forms Explain good sayings, Relate good saying to life.	**K2**
CO3	Apply and build small sentences	**K3**
CO4	Analyze different forms of Verbs and nouns	**K4**
CO5	Appreciate subhashitas and Sanskrit poetry	**K5**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**						**Hours**	**Credits**
2	**23USA21GL02**			Sanskrit - 2						**4**	**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Scores of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	2	1	3	2	2	2	3	3	2	1	**2.1**
CO2	3	2	3	2	2	3	2	3	3	2	**2.5**
CO3	2	2	3	2	2	2	2	3	3	1	**2.1**
CO4	3	2	3	3	1	2	3	3	3	1	**2.4**
CO5	3	2	2	2	3	2	2	3	3	1	**2.3**
										Mean Overall Score	**2.28 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UEN22GE02	General English - 2	5	3

Course Objectives
To develop an expanded and specialised vocabulary related to diverse themes such as education, entertainment, career, and society through activities like word grids, reading, and discussions.
To enhance problem-solving abilities through activities like debates, role-playing, and scenario analysis.
To enable students to express ideas with precision and clarity by practising different forms of expressing quality, comparison, and actions in various contexts.
To equip students with language skills relevant to professional settings.
To encourage students to explore language as a tool for creative expression and communication.

UNIT I **(15 Hours)**

01. Education Word Grid
02. Reading Problems and Solutions
03. Syllabification
04. Forms for Expressing Quality
05. Expressing Comparison
06. Monosyllabic Comparison
07. Di/polysyllabic Comparison
08. The Best Monosyllabic Comparison
09. The Best Di/Polysyllabic Comparison
10. Practising Quality Words

UNIT II **(15 Hours)**

11. Wh Words
12. Yes/No Recollection
13. Unscramble Wh Questions
14. Wh Practice
15. Education and the Poor
16. Controlled Role Play
17. Debate on Education
18. Education in the Future
19. Entertainment Word Grid
20. Classify Entertainment Wordlist
21. Guess the Missing Letter
22. Proverb-Visual Description
23. Supply Wh Words
24. Rearrange Questions
25. Information Gap Questions

UNIT III **(15 Hours)**

26. Asking Questions
27. More about Actions
28. More about Actions and Uses
29. Crime Puzzle
30. Possessive Quiz
31. Humourous News Report

32. Debate on Media and Politics
33. Best Entertainment Source

UNIT IV **(15 Hours)**

34. Career Word Grid
35. Job-Related Wordlist
36. Who's Who?
37. People at Work
38. Humour at Workplace
39. Profession in Context
40. Functions and Expressions
41. Transition Fill-in
42. Transition Word Selection
43. Professional Qualities
44. Job Procedures
45. Preparing a Resume
46. Interview Questions
47. Job Cover Letter Format
49. Emailing an Application
50. Mock Interview

UNIT V **(15 Hours)**

51. Society Word Grid
52. Classify Society Wordlist
53. Rearrange the Story
54. Storytelling
55. Story Cluster
56. Words Denoting Time
57. Expressing Time
58. What Can You Buy?
59. Noise Pollution
60. Positive News Headlines
61. Negative News Headlines
62. Matching Conditions
63. What Would You Do?
64. If I were the Prime Minister
65. My Dream Country

Teaching Methodology	Lecture Method, Use of ICT Tools and Interactive method

Book for Study

1. Joy, J.L. & Peter, F.M. (2014). *Let's Communicate 2*, Trinity Press.

Books for Reference

1. Ahrens, Sönke. (2017). *How to Take Smart Notes: One Simple Technique to Boost Writing, Learning and Thinking*. Create Space.
2. Aspinall, Tricia. (2002). *Test Your Listening.* Pearson.
3. Bailey, Stephen. (2004). *Academic Writing: A Practical Guide for Students*. Routledge.
4. Fitikides, T.J. (2002). *Common Mistakes in English,* (6th Ed.). Longman
5. Wainwright., Gordon. (2007). *How to Read Faster and Recall More: Learn the Art of Speed Reading with Maximum Recall,* (3rd Ed.). How to Books.

Websites and eLearning Sources

1. https://learnenglish.britishcouncil.org/
2. https://oneminuteenglish.org/en/best-websites-learn-english/

3. https://www.dailywritingtips.com/best-websites-to-learn-english/

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	write paragraphs with apt punctuation marks	**K1**
CO2	discuss basic issues with friends, relatives and members of the family	**K2**
CO3	use polite expressions in appropriate ways	**K3**
CO4	evaluate the language and communication aspects of the topics	**K4**
CO5	create and produce various forms of communication, including professional documents like resumes and cover letters, debates	**K5**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**					**Hours**		**Credits**
2	**23UEN22GE02**			**General English - 2**					**5**		**3**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	2	3	2	2	3	2	3	2	3	2	**2.4**
CO2	2	2	3	2	3	3	2	3	2	2	**2.3**
CO3	2	3	2	3	2	2	3	2	3	2	**2.4**
CO4	2	2	3	2	3	3	2	3	2	3	**2.5**
CO5	2	2	2	3	2	2	2	3	2	2	**2.2**
Mean Overall Score											**2.36 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UST23CC03	**Core Course - 3:** Numerical Methods	5	4

Course Objectives
Understand the concept of interpolation in various fields
Know the different central difference formulae
Learn the numerical solution of ODE
Explain the solutions of algebraic equations using different methods
Know the numerical differentiation and integration for different interpolation techniques

UNIT I: System of equations: (15 Hours)

Bisection method - Regula Falsi method - Newton-Raphson method. Gauss elimination method and Gauss-Jordan method (Problems only).

UNIT II: Interpolation (15 Hours)

Introduction - Symbolic relations - Newton's Forward and Backward difference formulae, Newton's divided difference formula - Lagrange's formula (Problems only).

UNIT III: Central Difference Formulae (15 Hours)

Gauss forward and backward formula-Stirling's formula - Bessel's formula-Everett's formula-Appropriateness of formulae (Problems only).

UNIT IV: Numerical solution of ODE (15 Hours)

Taylor's series method - Euler's method, Modified Euler's method and Second and Fourth order Runge - Kutta method (Problems only).

UNIT V: (15 Hours)

Numerical differentiation Up to second order maxima and minima of a tabulated function.

Numerical integration: Trapezoidal rule - Simpson's 1/3rd and 3/8th rules-Weddle's rule (Problems only).

Teaching Methodology	YouTube videos, Chat and Talk, PPT and Handouts.

Book for Study

1. Kandasamy, P., Thilagavathy, K., and Gunavathi, K. (2008). *Numerical Methods.* S. Chand Company Ltd.

Books for Reference

1. Gerald, C.F. & Wheatley, P.O. (2007). *Applied Numerical Analysis*. Addison-Wesley.
2. Atkinson. K. (2003). *Elementary Numerical Analysis*. John Wiley & Sons.
3. Sastry, S.S. (2012). *Introductory Methods of Numerical Analysis.* PHI.

Website and eLearning Sources

1. https://atozmath.com/example/CONM/NumeInterPola.aspx?q=A&q1=E1
2. https://www.scribd.com/presentation/478879601/Gauss-forward-and-Backward-Interpolation
3. https://theengineeringmaths.com/wp-content/uploads/2017/11/num-ode.pdf
4. https://kanchiuniv.ac.in/coursematerials/Numerical%20-%20Algebraic%20equations.pdf
5. https://egyankosh.ac.in/bitstream/123456789/31292/1/UNIT 14.pdf

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	understand the of common numerical mathematics and how they are used	**K1**
CO2	explain the different formulae for numerical mathematics	**K2**
CO3	apply numerical methods to obtain approximate solutions of the real life problems	**K3**
CO4	effectively write mathematical solutions and their interpretation in a clear and concise manner.	**K4**
CO5	derive the interpolation formulae, numerical differentiation and integration for different interpolation techniques	**K5**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**					**Hours**		**Credits**
2	**23UST23CC03**			**Core Course - 3:** Numerical Methods					**5**		**4**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Scores of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	1	3	3	1	2	3	2	3	2	1	**2.1**
CO2	2	2	3	1	2	3	3	3	3	2	**2.4**
CO3	3	2	1	3	3	2	3	2	3	2	**2.4**
CO4	3	1	1	3	3	1	2	1	3	3	**2.1**
CO5	3	1	1	3	3	1	2	1	3	3	**2.1**
										Mean Overall Score	**2.2 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UST23CC04	**Core Course - 4:** Time Series and Index Numbers	6	4

Course Objectives
Learn the basics of data analysis like Averages and forecasting techniques.
Make the students capable of interpreting and evaluating numerical and quantitative issues in business.
Exhibit the students' ability to use statistical, graphical and algebraic techniques wherever relevant.
Help students perceive Statistical applications of Time Series and Index Numbers.
Learn the uses of Time series and Index numbers in management decisions

UNIT I: Time Series **(18 Hours)**

Definition, uses, Additive Model, Multiplicative Models, Components - Secular Trend, Seasonal variation - Measurement of Trend: Graphical method, Method of Semi-Averages, Method of Moving Averages and Method of Least Squares.

UNIT II: Measurement of Seasonal Variations **(18 Hours)**

Method of Simple Averages, Ratio to Moving Average method, Ratio to Trend Method and Link Relative Method - Cyclic Variation and Irregular fluctuations.

UNIT III: Growth Curves **(18 Hours)**

Parabolic, Exponential, Modified Exponential Curve and its Fitting - Method of Three Selected Points - Method of Partial Sums - Fitting of Grompertz Curve - Logistic Curve. De - Seasonalisation of data - Measurement of Cyclic variations by residual approach.

UNIT IV: Index Numbers **(18 Hours)**

Definition, Uses, Types, Problems involved in the construction of Index Numbers - Construction of Index Numbers - Simple aggregate method and Simple average of Price relatives method. Weighted Index Numbers - Laspeyre's, Paasche's, Dorbish - Bowley's, Marshall Edge Worth's Index Numbers and Fisher's Ideal Index Number.

UNIT V: Tests for adequacy **(18 Hours)**

Time Reversal Test, Factor Reversal Test, Unit test and Cyclic test. Definition of Deflation, Splicing, Inflation, and Real wages. Construction of Weighted Average of Price relatives Index Numbers using A.M & G.M. Fixed Base Index Numbers and Chain Base Index Numbers.

Teaching Methodology	YouTube videos, PPT, Black Board teaching and Handouts.

Book for Study

1. Gupta, S.C. & Kapoor, V.K. (2019). *Fundamentals of Applied Statistics,* Sultan Chand & Co., (4th Ed.).

Books for Reference

1. Garret, H.E., (2005).*Education and Psychological Statistics,* Paragon International Publications.
2. Pillai RSN & Bagavathi V., (2010).*Statistics*, S. Chand & Co.
3. Box, G.E.P., Jenkins, G.M., Reinsel, G.C. & Ljung, G.M., (2015). *Time Series Analysis: Forecasting and Control,* (5th Ed.). John Wiley & sons, Inc.
4. Brockwell, P.J. & Davis, R.A. (2003). *Introduction to Time Series Analysis.* Springer.

Website and eLearning Sources

1. https://youtu.be/W7sMRIOL7LM
2. https://youtu.be/ivR_20rdhsM?list=PLqMl6r3x6BUSP2fYr2rd3NMRTT4_5uTvV

3. https://youtu.be/c_h2BE1NRQo?list=PLqMl6r3x6BUSP2fYr2rd3NMRTT4_5uTvV
4. https://youtu.be/SdxyWarJr44
5. https://youtu.be/tJhkbuFYPms

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K -Level)**
CO1	acquire the knowledge of time series, index numbers and its applications.	**K1**
CO2	outline the forecasting and its curve fitting.	**K2**
CO3	compute the different measurements and index numbers.	**K3**
CO4	analyze the importance of time series and index numbers.	**K4**
CO5	apply the time series data and index numbers in real life problems.	**K5**

Relationship Matrix											
Semester	**Course Code**	**Title of the Course**								**Hours**	**Credits**
2	**23UST23CC04**	**Core Course - 4:** Time Series and Index Numbers								**6**	**4**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Scores of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	2	3	3	1	2	3	2	3	2	2	**2.3**
CO2	2	3	3	2	2	2	3	3	3	2	**2.5**
CO3	3	2	1	3	3	2	3	2	3	2	**2.4**
CO4	2	1	2	3	2	1	2	3	2	3	**2.1**
CO5	3	1	1	3	2	3	2	2	2	3	**2.2**
										Mean Overall Score	**2.3 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UST23AC02	**Allied Course - 2:** Mathematics for Statistics - 2	6	4

Course Objectives
Create deep interest in learning mathematics.
Develop broad and balanced knowledge and understanding of definitions, concepts, Principles and theorems.
Familiarize the students with suitable tools of mathematical analysis to handle issues and problems in mathematics and related sciences.
To apply the knowledge and skills acquired by them during the programme to solve specific theoretical and applied problems in mathematics.
The learners gain sufficient knowledge and skills enabling them to undertake further studies in mathematics and its allied areas on multiple disciplines concerned with mathematics

UNIT I: Integral calculus **(18 Hours)**

Integration by substitution types - Properties of definite integral and simple problems. Bernoulli's formula for integration by parts - Reduction formula.

UNIT II: Multiple integrals **(18 Hours)**

Double integral, Double integral in polar co-ordinates -Triple integrals, Simple applications related to area, Volume.

UNIT III: Ordinary differential equations **(18 Hours)**

First order and second order differential equations with constant coefficients e^{ax}, $\sin ax, \cos ax$, x^m, $e^{ax}V$.

UNIT IV: Partial differential equations **(18 Hours)**

Equations Formation - Complete integrals and general integrals, Four standard types - Lagrange's equations.

UNIT V: Sequence and series **(18 Hours)**

Convergence and divergence series - Test of comparison, Integral test and Cauchy's test - D'Alembert's ratio test - Alternating series - Leibnitz's test -Series of positive and negative terms - Absolute and conditional convergence.

Teaching Methodology	Chalk and Talk, YouTube videos, PPT and Handouts.

Books for Study

1. Vittal, P.R. (2012). *Allied Mathematics*, Margham Publications, (3rd Ed.).
2. Balaji, G. (2013). *Engineering Mathematics, Regulation* - Balaji publishers.

Books for Reference

1. Narayanan, S., & Manikkavasagam Pillai, T. K. (2009). Calculus Volume (I & II) S. Viswanathan printers and publishers.
2. Singaravelu, (2018). *Allied Mathematics*, ARS publications.

Website and eLearning Sources

1. Integration by Parts (mathsisfun.com)
2. Integration Using Bernoullis Formula (onlinemath4all.com)
3. Calculus II - Convergence/Divergence of Series (lamar.edu)

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K -Level)**
CO1	assimilate the notions of limit of a sequence and convergence of a series of real numbers.	**K1**
CO2	demonstrate educational skills in areas of analysis, differential etc	**K2**
CO3	apply knowledge, understanding and skills to identify the difficult/unsolved problems in mathematics and to collect the required information	**K3**
CO4	identify challenging problems in mathematics and obtain well-defined solutions.	**K4**
CO5	apply one's disciplinary knowledge and skills in mathematics in newer domains	**K5**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**						**Hours**	**Credits**
2	**23UST23AC02**			**Allied Course - 2:** Mathematics for Statistics - 2						**6**	**4**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Scores of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	2	2	3	2	1	3	2	2	3	2	**2.2**
CO2	3	3	2	1	2	2	3	2	2	1	**2.1**
CO3	3	3	2	1	2	2	3	2	3	3	**2.4**
CO4	2	3	3	3	2	1	2	3	3	2	**2.4**
CO5	3	2	2	2	3	3	3	2	2	3	**2.5**
										Mean Overall Score	**2.32 (High)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UHE24VE02	**Value Education - 2:** Fundamentals of Human Rights	2	1

Course Objectives
To sensitize students about various human rights and their importance
To empower them with the right understanding of human rights
To enable them to understand the Fundamental rights and the duties in the constitution of India
To help them comprehend the background, principles and the articles of UDHR
To make them involved in activities to defend human rights

UNIT I: Human Rights - An Introduction **(6 Hours)**

Introduction- Classification of Human Rights- Scope of Human Rights-Characteristics of Human Rights - Challenges for Human Rights in the 21st Century.

UNIT II: Historical Development of Human Rights **(6 Hours)**

Human Rights in Pre-World War Era- Human Rights in Post-World War Era- Evolution of International Human Rights Law - the General Assembly Proclamation- Institution Building, Implementation and the Post- Cold War Period. The ICC.

UNIT III: India and Human Rights **(6 Hours)**

Introduction- Preamble to Indian Constitution - Classification of Fundamental Rights-Salient Features of Fundamental Rights-and Fundamental Duties.

UNIT IV: Human Rights of Women and Children **(6 Hours)**

Women's Human Rights- Issues related to women's rights - and Rights of Women's and Children

UNIT V: Human Rights Violations and Organizations **(6 Hours)**

Human Rights Violations - Human Rights Violations in India - the Human Rights Watch Report, January 2012- Human Rights Organizations – NHRC – SHRC.

Teaching Methodology	Chalk and Talk, Power point, Handouts and Group discussion

Book for Study

1. Department of Human Excellence, (2021). *Techniques of Social Analysis: Fundamentals of Human Rights.*

Books for Reference

1. Venkatachalem. (2005). *The Constitution of India*, *Giri Law House.*
2. Naik, V. & Shany, M. (2011). *Human rights education and training*, Crescent Publishing Corporation.
3. Neera, B. (2011). *Human Rights Content and Extent.* Swastika Publications.

Websites and eLearning Sources

1. https://www.un.org/en/universal-declaration-human-rights/
2. https://www.ilo.org/global/lang--en/
3. https://www.amnesty.org/en/

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	Identify the importance and the values of human rights	**K1**
CO2	Understand the historical background and the development of Human Rights and the related organizations	**K2**
CO3	Apply the provisions of National and International human rights to themselves and the society	**K3**

Relationship Matrix											
Semester	**Course Code**			**Title of the Course**						**Hours**	**Credits**
2	**23UHE24VE02**			**Value Education - 2:** Fundamentals of Human Rights						**2**	**1**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	3	2	1	2	2	3	2	2	2	2	**2.1**
CO2	3	2	1	2	2	3	2	2	2	2	**2.1**
CO3	3	2	2	2	2	2	3	2	1	2	**2.1**
Mean Overall Score											**2.1 (Medium)**

Semester	Course Code	Title of the Course	Hours/Week	Credits
2	23UHE24AE01	**Ability Enhancement Compulsory Course - 2:** Environmental Studies	2	1

Course Objectives
To enable students connect themselves with nature
To Impart knowledge of the concept of Biodiversity
To create awareness of the causes and consequences of various pollution
To help them recognize the available natural resources and the need to sustain them
To enable them to Identify the environmental problems and offer alternatives by making interventions both individually and collectively

UNIT I: Introduction to Environmental Studies **(6 Hours)**

Introduction – Scope and Importance – Subsystems of Earth – Various recycling Methods – Environmental Movements in India – Eco- Feminism – Public awareness – Suggestions to conserve environment

UNIT II: Natural Resources **(6 Hours)**

Food Resources – Land Resources – Forest resources – Mineral Resources – Water Resources – Energy Resources

UNIT III: Ecosystems, Biodiversity and Conservation **(6 Hours)**

General structure of ecosystem - Functions of Ecosystem - Energy flow and Ecological pyramids – Levels of Biodiversity - Hot spots of Biodiversity - Endangered and Endemic Species - Value of Biodiversity - Threats to Biodiversity - Conservation of Biodiversity

UNIT IV: Environmental Pollution **(6 Hours)**

Air Pollution – Water Pollution – Oil Pollution – Soil Pollution – Marine Pollution – Noise Pollution - Thermal Pollution – Radiation Pollution

UNIT V: Environmental Organizations and Treatise **(6 Hours)**

United Nations Environment Program (UNEP) - International treaties on Environmental protection - Ministry of Environment, Forest and Climate Change - Important National Environmental Acts and rules– Environmental Impact assessment - Issues deals with Population growth.

Teaching Methodology	Chalk and Talk, Power point and Field visit

Book for Study

1. Department of Human Excellence, (2021). *Environmental Studies.*

Books for Reference

1. Rathor, V.S. & Rathor B. S. (2013). *Management of Natural Resources for Sustainable Development*. Daya Publishing House.
2. Sharma P.D. (2010). *Ecology and Environment*, (8th Ed.). Rastogi Publications.
3. Agrawal, A & Gibson, C.C. (2001). *Introduction: The Role of Community in Natural Resource Conservation.* Rutgers University Press.

Websites and eLearning Sources

1. https://www.unep.org/
2. http://moef.gov.in/en/
3. https://www.ipcc.ch/reports/

Course Outcomes		
CO No.	**CO-Statements** On successful completion of this course, students will be able to	**Cognitive Levels (K - Level)**
CO1	Identify the concepts related to global ecology and the environment	**K1**
CO2	Comprehend the natural resources and environmental organizations	**K2**
CO3	Apply the acquired knowledge to sensitize individuals and public about the environmental crisis	**K3**

Relationship Matrix											
Semester	**Course Code**	**Title of the Course**								**Hours**	**Credits**
2	**23UHE24AE01**	**Ability Enhancement Compulsory Course - 2:** Environmental Studies								**2**	**1**
Course Outcomes	**Programme Outcomes (POs)**					**Programme Specific Outcomes (PSOs)**					**Mean Score of COs**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	
CO1	3	2	1	2	2	3	2	2	2	2	**2.1**
CO2	3	2	1	2	2	3	2	2	2	2	**2.1**
CO3	3	2	2	2	2	2	3	2	1	2	**2.1**
Mean Overall Score											**2.1 (Medium)**