

NATIONAL COLLEGE

(AUTONOMOUS)

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(Affiliated to Bharathidasan University)
TIRUCHIRAPPALLI-620 001



DEPARTMENT OF STATISTICS

B.Sc. STATISTICS

SYLLABI

From 2019 onwards

COURSE STRUCTURE B.Sc.STATISTICS (2019 Onwards)

S.No.	CODE	COURSE TITLE			Hrs.	Credits	Internal Exam	External Exam	Total
I-SEMESTER									
1	U19T1	P-I	TAMIL-I		6	3	25	75	100
2	U19E1	P-II	ENGLISH-I		6	3	25	75	100
3	U19ST1	P-III	CORE-I	DESCRIPTIVE STATISTICS	6	5	25	75	100
4	U19ST2P		CORE- P* II	PRACTICAL-I (NS)	2	–	–	–	–
5	U19AMST1		FIRST ALLIED-I	MATHEMATICS-I	5	5	25	75	100
6	U19AMST2P		FIRST ALLIED*- P II	MATHEMATICS-II (Non-Sitting)	3	–	–	–	–
7		P-IV	EVS	ENVIRONMENTAL SCIENCE	2	2	25	75	100
				TOTAL	30	18	125	375	500
II-SEMESTER									
8	U19T2	P-I	TAMIL-II		6	3	25	75	100
	U19E2	P-II	ENGLISH-II		4	2	25	75	100
9	U19CE1		COMMUNICATION ENGLISH COURSE-I		2	1	25	75	100
10	U19ST2P	P-III	CORE-P* -II	PRACTICAL-I (NS)	3	3	25	75	100
11	U19ST3		CORE- III	PROBABILITY THEORY	5	5	25	75	100
12	U19AMST2P		FIRST ALLIED*- P II	MATHEMATICS-II (Non-Sitting)	3	3	25	75	100
13	U19AMST3		FIRST ALLIED-III	MATHEMATICS-III	5	5	25	75	100
14		P-IV	OA	OFFICE AUTOMATION	2	2	25	75	100
				TOTAL	30	24	200	600	800
III-SEMESTER									
15	U19T3	P-I	TAMIL-III		6	3	25	75	100
16	U19E3	P-II	ENGLISH-III		6	3	25	75	100
17	U19ST4	P-III	CORE-IV	DISCRETE PROBABILTY DISTRIBUTIONS	3	4	25	75	100
18	U19ST5P		CORE- P* V	PRACTICAL-II : STATISTICAL DATA ANALYSING USING BASIC SOFTWARE (Non-Sitting)	2	–	–	–	–
19	U19AMST4		SECOND ALLIED-I	OPERATIONS RESEARCH-I	4	3	25	75	100
20	U19AMST5P		SECOND ALLIED*- P II	OPERATIONS RESEARCH-II (Non-Sitting)	2	–	–	–	–
21	U19ST6E		ME-I	VITAL STATISTICS	3	4	25	75	100
22		P-IV	DP	DESKTOP PUBLISHING	2	2	25	75	100
			LAB-OA&DP	LAB-OFFICE AUTOMATION & DESKTOP PUBLISHING	2	2			
				TOTAL	30	21	150	450	600
IV-SEMESTER									
23	U19T4	P-I	TAMIL-III		6	3	25	75	100
	U19E4	P-II	ENGLISH-III		4	2	25	75	100
24	U19CE2		COMMUNICATION ENGLISH COURSE-II		3	1	25	75	100
25	U19ST5P	P-III	CORE- P* V	PRACTICAL-II : STATISTICAL DATA ANALYSING USING BASIC SOFTWARE (NS)	2	2	25	75	100
26	U19ST7		CORE- VI	CONTINUOUS PROBABILITY DISTRIBUTIONS	4	4	25	75	100
27	U19AMST5P		SECOND ALLIED*- P II	OPERATIONS RESEARCH-II (Non-Sitting)	3	3	25	75	100
28	U19AMST6		SECOND ALLIED-III	OPERATIONS RESEARCH-III	4	4	25	75	100

29		P-IV	QA-I	QUANTITATIVE APTITUDE-I	2	2	25	75	100
			VE	VALUE EDUCATION	2	2	25	75	100
				TOTAL	30	23	225	675	900
V-SEMESTER									
30	U19ST8	P-III	CORE-VII	STATISTICAL INFERENCE-I	6	5	25	75	100
31	U19ST9		CORE-VIII	APPLIED STATISTICS	6	5	25	75	100
32	U19ST10		CORE-IX	C-PROGRAMMING	5	4	25	75	100
33	U19ST11P		CORE-XP	PRACTICAL-III- COMPUTER LAB FOR C	4	4	40	60	100
34	U19ST12E		ME-II	SAMPLING THEORY	5	5	25	75	100
35		P-IV	SSD	SOFT SKILL DEVELOPMENT	2	2	25	75	100
			QA-II	QUANTITATIVE APTITUDE-II	2	2	25	75	100
				TOTAL	30	27	190	510	700
VI-SEMESTER									
36	U19ST13	P-III	CORE-XI	STATISTICAL INFERENCE-II	6	5	25	75	100
37	U19ST14		CORE- XII	DESIGN OF EXPERIMENTS	5	5	25	75	100
38	U19ST15		CORE-XIII	STATISTICAL QUALITY CONTROL	5	5	25	75	100
39	U19ST16P		CORE- XV P	PRACTICAL-IV-SPSS	5	4	40	60	100
40	U19ST17		CORE-PROJECT	GROUP PROJECT	3	3	40	60	100
41	U19ST18E		ME-III	ACTUARIAL STATISTICS	5	4	25	75	100
		P-IV	GS	GENERAL STUDIES	1	1	25	75	100
				TOTAL	30	27	205	495	700
GRAND TOTAL					180	140	1095	3105	4200

தேசியக்கல்லூரி (தன்னாட்சி), திருச்சிராப்பள்ளி - 620 001.
தமிழாய்வுத்துறை

இளநிலை - தமிழ் - முதற் பருவம்
தாள்: மொழிப்பாடம்-1 செய்யுள் (கவிதை), உரைநடை, சிறுகதை,
இலக்கிய வரலாறு, இலக்கணம்

U19T1

கற்பிக்கும் காலம்: 6 மணி
கற்பித்தலின் நோக்கங்கள்

தரப்புள்ளிகள்: 3

1. இக்கால மரபுக்கவிதை, புதுக்கவிதை, சிறுகதை, உரைநடைக்கட்டுரைகளை அறிமுகம் செய்தல்.
2. நாட்டுப்புறப்பாடல்களைப் புலப்படுத்துதல்.
3. எழுத்துக்களின் வேறுபாட்டால் பொருள் மாறுபடலை எடுத்துரைத்தல்.

அலகு - 1: மரபுக்கவிதை

பாரதியார்	- கண்ணன் என் சேவகன், கண்ணன் என் விளையாட்டுப் பிள்ளை.
பாரதிதாசன்	- அழகின் சிரிப்பு
கவிமணி	- வாழ்க்கைத் தத்துவங்கள், இயற்கை வாழ்வு
பட்டுக்கோட்டையார்	- படிப்பும் உழைப்பும், நேர்மை வளையுது
நாமக்கல்லார்	- படிப்பினை
கண்ணதாசன்	- காலக்கணிதம், ஒரு கந்தல் துணியின் கதை
சுரதா	- நீர்

அலகு - 2: புதுக்கவிதை, நாட்டுப்புறப்பாடல்கள்,

வாலி	- ஒரு கௌதமன் வாரானோ!, புன்னகை மன்னன்
மு.மேத்தா	- ஒரு கிராமத்தின் கதையல்ல
அப்துல் ரகுமான்	- சிறகுகள், சுயப்பிரசவம்
ஈரோடு தமிழன்பன்	- மின்மினிக்காடு
அறிவுச்செல்வன்	- நமக்குத் தொழில் மனிதம்
விக்ரமாதியன்	- நிகழ்வுகள்
பொன்மணி வைரமுத்து	- வாழ்க்கை தொடங்குகிறது
நாட்டுப்புறப் பாடல்கள்:	

- (1) தாலாட்டு
- (2) கும்மிப்பாடல்
- (3) வேளாண்மை

அலகு - 3: உரைநடைக் கட்டுரைகள்

1. டிங்கினானே - உ.வே.சாமிநாத ஐயர்
2. கடற்கரையிலே - சிதம்பரனார் - ரா.பி.சேதுப்பிள்ளை
3. கம்பரும் நாடகப் பண்பும் - ரசிகமணி டி.கே.சிதம்பரநாத முதலியார்
4. முடத்தெங்கு - கி.ஆ.பெ. விசுவநாதம்
5. இராமன் எத்தனை இராமனடி - முனைவர் சோ.சத்தியசீலன்
6. உரைநடையின் அணிநலன்கள் - முனைவர் மா.இராமலிங்கம்
7. திருவள்ளுவர் குறிப்பிடும் மென்திறன்கள் - முனைவர் ம.திருமலை

அலகு - 4: சிறுகதைகள்

- | | |
|------------------|------------------------|
| 1. கவர்னர் வண்டி | - கல்கி |
| 2. நினைவுப்பாதை | - புதுமைப்பித்தன் |
| 3. சோற்றுச்சுமை | - ஜெயகாந்தன் |
| 4. முள்முடி | - தி.ஜானகிராமன் |
| 5. காற்று | - கு.அழகிரிசாமி |
| 6. ஆயுள் | - பிரபஞ்சன் |
| 7. அசலும் நகலும் | - இந்திரா பார்த்தசாரதி |
| 8. மாத்திரை | - ஆண்டாள் பிரியதர்ினி |

அலகு - 5: இலக்கிய வரலாறு, இலக்கணம்

இலக்கிய வரலாறு. (மரபுக்கவிதை, புதுக்கவிதை, உரைநடை, சிறுகதை மட்டும்) - மயங்கொலிச்சொற்கள், ல,ள,ழ, ர,ற, ன,ண,ந வேறுபாடுகளால் பொருள் மாறுபடுதல்.

குறிப்பு: ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

பாடநூல்

1. தமிழ் - முதற் பருவம் - தேசியக்கல்லூரி வெளியீடு.
2. இலக்கிய வரலாறு - தேசியக்கல்லூரி வெளியீடு.

கற்பித்தலின் பயன்கள்

1. இக்காலத் தமிழை உணர்வர்.
2. கவிதை, சிறுகதை படைக்கும் ஆற்றல்களை வளர்த்துக் கொள்வர்.
3. இலக்கணப் பிழையின்றி எழுத முயற்சிப்பர்.

தேசியக்கல்லூரி (தன்னாட்சி), திருச்சிராப்பள்ளி - 620 001.
தமிழாய்வுத்துறை
இளநிலை - தமிழ் - இரண்டாம் பருவம்
தாள்: மொழிப்பாடம்-2 செய்யுள் (பக்தி இலக்கியம்), புதினம்,
இலக்கிய வரலாறு

U19T2

கற்பிக்கும் காலம்: 6 மணி
கற்பித்தலின் நோக்கங்கள்

தரப்புள்ளிகள்: 3

1. பல்வேறு சமய நெறிமுறைகளை உணர்த்துதல்.
2. பக்தி இலக்கிய மாண்பினைப் புலப்படுத்துதல்.
3. புதின இலக்கிய வகையை அறிமுகம் செய்தல்.

அலகு - 1: சைவ இலக்கியம்

திருஞானசம்பந்தர் - திருச்சிராப்பள்ளி - நன்றுடையானை தீயதிலானை.
திருநாவுக்கரசர் - தில்லைப் பெருங்கோயில் - கருநட்ட கண்டனை.
கந்தரர் - திருமழபாடி - பொன்னார் மேனியனே
மாணிக்கவாசகர் - திருச்சாழல் - பூசுவதும் வெண்ணீறு.

அலகு - 2: வைணவ இலக்கியம்

திருப்பாணாழ்வார் - அமலனாதிபிரான் - அமலனாதிபிரான் அடியார்க்கு
தொண்டரடிப்பொடியாழ்வார் - திருமாலை - பச்சைமாமலை போல் மேனி
ஆண்டாள் - நாச்சியார் திருமொழி - வாரணம் ஆயிரம் சூழ
நம்மாழ்வார் - திருவாய்மொழி - உயர்வற உயர்நலம்

அலகு - 3: பிற சமய இலக்கியங்கள்

சமண சமயப் பாடல்கள் - 10.
பௌத்த சமயப் பாடல்கள் - 10
காசீப் புலவர் - முனாஜாத்துப் பதிகம் - 10
ஹெச்.ஏ.கிருஷ்ணபிள்ளை - இரட்சணிய மனோகரம் தோத்திரப்பதிகம் - 10

அலகு - 4: புதினம்

துளசிமாடம் - நா.பார்த்தசாரதி.

அலகு - 5: இலக்கிய வரலாறு, இலக்கணம்

இலக்கிய வரலாறு (சைவம், வைணவம், சமணம், பௌத்தம், இசுலாம், கிறித்தவம்
மற்றும் புதினம் பற்றியன மட்டும்), வல்லினம் மிகும் இடங்கள், வல்லினம் மிகா இடங்கள்.

குறிப்பு: ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

பாடநூல்

1. தமிழ் - இரண்டாம் பருவம் - தேசியக்கல்லூரி வெளியீடு.
2. இலக்கிய வரலாறு - தேசியக்கல்லூரி வெளியீடு.
3. புதினம் - துளசிமாடம் - நா.பார்த்தசாரதி - தேசியக்கல்லூரி வெளியீடு.

கற்பித்தலின் பயன்கள்

1. வேறுபட்ட சமய வழக்காறுகளை அறிவர்.
2. பிற சமயத்தார்களிடம் அன்பு பாராட்டுவர்.
3. புனைகதை வடிவங்களில் புதினம் பற்றி அறிவர்.

தேசியக்கல்லூரி (தன்னாட்சி), திருச்சிராப்பள்ளி - 620 001.
தமிழாய்வுத்துறை

இளநிலை - தமிழ் - மூன்றாம் பருவம்
தாள்: மொழிப்பாடம்-3 செய்யுள் (காப்பியம்), நாடகம்,
இலக்கிய வரலாறு, பொதுக்கட்டுரை

U19T3

கற்பிக்கும் காலம்: 6 மணி

தரப்புள்ளிகள்: 3

கற்பித்தலின் நோக்கங்கள்

1. காப்பிய இலக்கியத்தின் செழுமையை உணர்த்துதல்.
2. காப்பியங்களின் உட்பொருளையும் கவியழகையும் புகட்டுதல்.
3. நாடகத்தின் மேன்மையை உணரச் செய்தல்.

அலகு - 1:

சிலப்பதிகாரம் - அடைக்கலக்காதை
மணிமேகலை - ஆதிரை பிச்சையிட்ட காதை.

அலகு - 2:

கம்பராமாயணம் - கும்பகர்ணன் வதைப்படலம்
பெரியபுராணம் - மெய்ப்பொருள் நாயனார் புராணம்

அலகு - 3:

தேம்பாவணி - வளன் சனித்த படலம்
சீறாப்புராணம் - மானுக்குப் பிணை நின்ற படலம்.

அலகு - 4:

நாடகங்கள்:
1. விசுவநாதன் அல்லது கடமை முரண்.
2. மௌனதேசிகர் - பண்டித ம.கோபாலகிருணய்யர்

அலகு - 5:

இலக்கிய வரலாறு (காப்பியம், புராணம், நாடகம் பற்றியன மட்டும்),
பொதுக்கட்டுரை.

குறிப்பு: ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

பாடநூல்கள்

1. தமிழ் - மூன்றாம் பருவம், தேசியக்கல்லூரி வெளியீடு.
2. இலக்கிய வரலாறு - தேசியக்கல்லூரி வெளியீடு.
3. நாடகங்கள் - தேசியக்கல்லூரி வெளியீடு.

கற்பித்தலின் பயன்கள்

1. தமிழ்க் காப்பியப் பரப்பினை அறிவர்.
2. காப்பியங்களின் வழிநின்று புதிய முறையில் கற்பனையாற்றலைப் பெறுவர்.
3. நாடகத்தை உருவாக்கவும் நடிக்கவும் பழகுவர்.

தேசியக்கல்லூரி (தன்னாட்சி), திருச்சிராப்பள்ளி - 620 001.

தமிழாய்வுத்துறை

இளநிலை - தமிழ் - நான்காம் பருவம்
தாள்: மொழிப்பாடம் - 4 : செய்யுள் (பண்டைய இலக்கியம்),
இலக்கிய வரலாறு, மொழிபெயர்ப்பு

U19T4

கற்பிக்கும் காலம்: 6 மணி

தரப்புள்ளிகள்: 3

கற்பித்தலின் நோக்கங்கள்

1. அக, புற இலக்கியங்கள் பற்றி விளக்குதல்.
2. சங்கப் புலவர்களின் புலமைச், சிறப்பை எடுத்துரைத்தல்.
3. சங்ககால மக்களின் இல்லற மாண்பினை உணர்த்துதல்.

அலகு - 1:

நற்றிணை (5 பாடல்கள் - 242, 333, 353, 375, 380)

1. இலையில் பிடவம் ஈர்மலர் அரும்பப் - விழிக்கட் பேதைப் பெருங்கண்ணனார் - முல்லை.
2. மழைதொழில் உலந்து மாவிகம்பு கந்தெனக் - கள்ளிக்குடி பூதம் புல்லனார் - பாலை
3. ஆளில் பெண்டிர் தாளின் செய்த - கபிலர் - குறிஞ்சி.
4. நீடுசினைப் புன்னை நறுந்தாது உதிரக் - பொதும்பில் கிழார் - நெய்தல்.
5. நெய்யும் குய்யும் ஆடி மையொடு - கடலூர்ப் பல்கண்ணனார் - மருதம்.

குறுந்தொகை - (5 பாடல்கள் - 3, 27, 38, 135, 186)

1. நிலத்தினும் பெரிதே வானினும் உயர்ந்தன்று - தேவகுலத்தார் - குறிஞ்சி
2. கன்றும் உண்ணாது கலத்தினும் படாது - வெள்ளிவீதியர் - பாலை
3. கான மஞ்ஞை அறையின் முட்டை - கபிலர் - குறிஞ்சி
4. வினையே ஆடவர்க்குயிரே வானுதல் - பாலை பாடிய பெருங்கடுங்கோ - பாலை
5. ஆர்கலி ஏற்றொடு கார்தலை மணந்த - ஓக்கூர் மாசாத்தியார் - முல்லை

அலகு - 2:

அகநானூறு - (3 பாடல்கள் - 40, 48, 53)

1. கானல் மாலைக் கழிப்பூக் கூம்ப - குன்றியனார் - நெய்தல்
2. அன்னாய்! வாழி! வேண்டு அன்னை! நின்மகள் - தங்கால் முடக்கொற்றனார் - குறிஞ்சி
3. அறியாய், வாழி, தோழி! இருள்அற - சீத்தலைச்சாத்தனார் - பாலை

கலித்தொகை - 2 பாடல்கள்

1. எறிதரு கதிர் தாங்கி ஏந்திய குடை நிழல் - பாலைக்கலி : 8
2. முறம் செவி மறைப் பாய்பு முரண் செய்த புலி செற்று - குறிஞ்சிக்கலி : 16

அலகு - 3:

புறநானூறு (5 பாடல்கள் - 9, 45, 74, 101, 112,)

1. ஆவும் ஆனியற் பார்ப்பன மாக்களும் - நெட்டிமையார்
2. இரும்பனை வெண்தோடு மலைந்தோன் அல்லன் - கோவர்க்கிழார்
3. குழவி இறப்பினும் ஊன்தடி பிறப்பினும் - சேரன் கணைக்காலிரும்பொறை
4. ஒருநாள் செல்லலம் இருநாள் செல்லலம் - ஓளவையார்
5. அற்றைத் திங்கள் அவ்வெண் நிலவில் - பாரி மகளிர்

திருக்குறள் - 3 அதிகாரங்கள் - 1. கல்வி, 2. ஈகை, 3. அன்புடைமை.

நாலடியார் (5 பாடல்கள் - 8, 19, 21, 36, 65)

1. செல்வம் நிலையாமை - செல்வர்யாம் என்றுதாம் செல்வுழி எண்ணாத
2. இளமை நிலையாமை - மற்றறிவாம் நல்வினை யாம்இளையம் என்னாது
3. யாக்கை நிலையாமை - மலைமிசைத் தோன்றும் மதியம்போல் யானை
4. அறன் வலியுறுத்தல் - இன்றுகொல் அன்றுகொல் என்றுகொல் என்னாது
5. சினமின்மை - இளையான் அடக்கம் அடக்கம் கிளைபொருள்

அலகு - 4:

நெடுநல்வாடை (முழுவதும்).

அலகு - 5:

இலக்கிய வரலாறு - எட்டுத்தொகை, பத்துப்பாட்டு நூல்கள், பதினெண் கீழ்க்கணக்கு நூல்கள், மொழிபெயர்ப்பு.

குறிப்பு: ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

பகுதி 'அ, ஆ'வில் இலக்கிய வரலாறும், பகுதி 'இ'யில் 5-வது வினா மொழிபெயர்ப்புப் பகுதியினைத் தந்து எழுதக் கூறுதல் வேண்டும்.

(வினாத்தாளில் பகுதி 'இ'யில் கட்டாயம் மொழிபெயர்ப்புப் பகுதி இடம்பெறல் வேண்டும்.)

பகுதி அ - $20 \times 1 = 20$

பகுதி ஆ - $5 - 5 \times 5 = 25$

பகுதி இ - $5 - 3 \times 10 = 30$ (5-ஆவது வினாவில் மொழிபெயர்ப்புப்பகுதி வினாவாகக் கேட்கப்பெறல் வேண்டும்.)

பாடநூல்

1. தமிழ் - நான்காம் பருவம் - தேசியக்கல்லூரி வெளியீடு.
2. இலக்கிய வரலாறு - தேசியக்கல்லூரி வெளியீடு.

கற்பித்தலின் பயன்கள்

1. ஐவகை நில அமைப்புகளைப் பற்றிய அறிவினைப் பெறுவர்.
2. சங்க கால மக்களின் வாழ்வியல் பற்றி அறிவர்.
3. மன்னர்களின் ஆட்சிச்சிறப்பு, கொடைச்சிறப்பு, வீரம் பற்றி உணர்வர்.

COURSE OBJECTIVES

The Learner will be able to

- a. communicate effectively and appropriately in real life situation;
- b. use English effectively for study purpose across the curriculum;
- c. develop interest in and appreciation of Literature;
- d. develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing;
- e. revise and reinforce structure already learnt.

UNIT I:

1. At the College
2. On the Campus
3. Outside the Class
4. At the Post office
5. For Business and Pleasure
6. Review

UNIT II:

7. Are you Smart ?
8. Are You Creative?
9. Is it too hard to improve?
10. How to win ?
11. View Points
12. Snakes and Ladders
13. Yourself

UNIT III:

1. Birbal story- The loyal gardener
2. Hindu mythological story- The origin of coconut tree
3. A chinese story: The generous student
4. An African Story ; The Three Runners

UNIT IV:

5. The Golden place
6. The one – hundreth prince
7. The mouse Merchand

UNIT V:

8. When wishes come true – Rabindranath Tagore
9. The World and after
10. Julius Caesar

Text Books: 1. A Collection of Short stories, Department of English, National College, Trichy.

2. Creative English for Communication (2nd edition) by Krishnasamy and Sriraman. Published by Macmillan

Course objectives:

The learner will be able to

1. develop interest in and appreciation of Literature;
2. develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing;
3. integrate the skill of Reading a variety of texts.
4. use English effectively for study purpose across the curriculum

UNIT I

Excitement : Mack R. Douglas

Tight Corners : E.V. Lucas

UNIT II

Water – The Elixir of Life : C.V. Raman

Tree Speaks : C. Rajagopalachari

UNIT III

The Art of Telling Tales : April Hersey

A Job Well Done : Ruskin Bond

UNIT IV

The Panorama of India's Past : Jawaharlal Nehru

The Origin of Grammar : Margaret Bryant & Janet

UNIT V

Dangers of Drug Abuse : Hardin B. Jones

Crime and Punishment : R.K. Narayan

Text Book : Dr. Ananthan , R. Effective Communication. Ed. Chennai : Anu Chithra Pub.2010.

COMMUNICATIVE ENGLISH I – U19CE1

Semester : II
Instruction Hours/ Week : 2

Communicative English Course : I
Credit : 1

COURSE OBJECTIVES:

The Learner will be able to

1. communicate, to define, classify, and understand the methods of communication,
2. improve their LSRW skills,
3. enable them to practice those skills in their daily life by identifying instances of communication in the circumstances of their own.

UNIT I

Writing Stories

Grammar Components : Articles, Prepositions and Tenses

UNIT II

Precis Writing

Grammar Components : Non- Finite Verbs and Phrasal Verbs

UNIT III

Writing Letters

Grammar Components : Conjunctions and Interjections and Punctuation

UNIT IV

Reporting

Grammar Components : Reported Speech and Transformation of Sentences

UNIT V

Writing an Essay

Grammar Components : Sentence structure (S/V/O/C/A) and Simple, Compound and Complex Sentences

Text book : Pillai, Radhakrishna G. English Grammar & Composition Ed. Chennai : Emerald Pub.2016

COURSE OBJECTIVES:

The Learner will be able to

1. have a knowledge in basic grammatical units of English
2. have a depth of knowledge in Concord, reconstructing passages and précis writing.
3. comprehend the given passage and understand it.
4. gain a good knowledge and understanding in vocabulary
5. write on his/her own on a given topic and gain a good skill in letter/report writing.

UNIT I:

Basics of English(Revision)

- (a)Parts of speech and Articles
- (b)Active and passive voice
- (c)Framing Questions
- (d)Tag questions
- (e)Indirect speech
- (f)Tenses

UNIT II:

- (a)Errors and how to avoid them
- (b)Spotting errors
- (c)Reconstructing passages
- (d)Précis writing

UNIT III:

Reading comprehension

UNIT IV:

- (a)Sentence completion,
- (b) Spelling
- (c)Vocabulary – Words often confused or Misused, Synonyms, Antonyms.

UNIT V:

Letter writing , Report writing ,Paragraph writing, Essay writing

Text book : English for Competitive Examinations by R.P.Bhatnagar&Rajul Bhargava
macmillanIndia ltd. Delhi.

COURSE OBJECTIVE:

The Learner will be able to

- a. appreciate a piece of poem and analyze it
- b. appreciate and interpret an one act play.
- c. use English effectively for study purpose across the curriculum;
- d. develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing;
- e. revise and reinforce structure already learnt.

POETRY:

UNIT I : John Milton : On His Blindness

Oliver Goldsmith : The Village School Master

William Wordsworth : The Solitary Reaper

UNIT II : P.B.Shelly : Ozymandias

John Keats : La Belle Dame Sans Merci

Robert Browning : Incident of the French camp

UNIT III : John Masefield : Laugh and Be Merry

Robert Frost : Stopping by Woods On a Snowy

Evening

John Drinkwater : The Vagabond

DRAMA:

UNIT IV: Anton Chekov : A Marriage Proposal

Lady Gregory : The Rising of the Moon

UNIT V: W.St. John Tayleur : Reunion

William Shakespeare : Othello, The Moor of Venice – Act V

Text Books : 1)**An Introduction to Poetry** edited by A.G.Xavier; [Macmillan]

2)**A Book Plays:** A Group of Editors, Published by Orient Blackswan

SEMESTER : IV
INSTRUCTION HOURS/WEEK : 2

COMMUNICATIVE ENGLISH COURSE : II
CREDIT : 1

The learner will be able to

1. develop interest in and appreciation of Literature;
2. develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing;
3. integrate the skill of Reading a variety of texts.
4. use English effectively for study purpose across the curriculum

UNIT I:

Enriching Vocabulary – Register Development; who is who; Synonyms, Proverbs

UNIT II:

Tense Forms with emphasis on differences between Present and Present Continuous; Past and Present Perfect , Framing questions, Auxiliaries, if clauses; conjunctions and linkers; Prepositions

UNIT III

Pronunciation, Good Pronunciation habits, Phonetic Transcription, Greetings, Farewells commands etc.,

UNIT IV:

Conversational Skills – Affirmative or Negative Language – idiomatic expressions, Phrases, Dialogue Writing,

UNIT V:

- ☐ Writing Skills – Note- taking, note- making, e-mail, Describing an object, narrating a story.
- ☐ Circulars
- ☐ Notes - reminders, warnings, farewells, apology.
- ☐ Draft invitations – marriage, annual day, inaugural functions of associations, valediction, seminar, workshop.
- ☐ Draft Short messages- compliments, birthday wishes, notifications
- ☐ Draft Posters- Slogans, Announcements
- ☐ Draft Advertisements
- ☐ Dialogue writing

Text Book

1. Communicative English by Department of English, National College(Autonomous), Trichy.

SYLLABUS
UG Part I – Hindi
Semester – 1

U19HI : Functional Hindi-1, Prose, Grammar And Translation – 1

Objectives :

- Unit I :** The Objective of teaching functional Hindi is to encourage the students to learn the functional words.
- Unit II :** The Objective of teaching grammar is to teach the basic grammatical structures.
- Unit III :** The Objective of teaching prose is to develop their language ability.
- Unit IV :** The Objective of teaching translation is to convey the original tone and meaning.
- Unit V :** The Objective of teaching short stories is to enhance their creative writing and spoken skills through story telling/story writing and story reading mode.

Program Outcome :

The learners will acquire the knowledge of basic letters and functional hindi words. They understand the grammatical structures and able to translate the sentences from source to target language. The learners can read and understand the prose and stories.

SEMESTER – I

COURSE CODE : U19H1

6hrs/wk

Paper I – FUNCTIONAL HINDI-1, PROSE, GRAMMAR AND TRANSLATION – 1

Unit – I Functional Hindi

1. Directions, Seasons, Days, Colours
2. Fruits, Vegetables, Flowers, Numbers
3. Groceries, Grains, Taste, Cardinals
4. Domestic Animals, Wild Animals, Relatives, English Month
5. Occupation, Parts of Body, Numbers and Tamil Months

Unit – II Grammar

1. Noun
2. Verb
3. Pronoun
4. Vachan
5. Gender

Unit – III Prose

1. Challis karod kurta kaha se....
2. Bhojan Aur Vigyan
3. Dr. Abdul Kalam

Unit – IV Translation

1. (Hindi to English Lesson -1 to 5)

Unit – V Story

4. Raja Ka Chunaav – Ashok Kumar Kantha Bhatiya
5. Poos Ki Raat –Premchand

DEPARTMENT OF HINDI

For Candidates admitted from the Academic Year 2019 onwards

SEMESTER – 1

Course Code U19H1

Credits – 3

Paper I – FUNCTIONAL HINDI-1, PROSE, GRAMMAR AND TRANSLATION – 1

PROSE

Prescribed Text Book

Bharat – Madhyama Patya Samgiri

O.No.1619 Hindi Prachar Pushtakmala, Madras.

Prescribed Lessons

1. Challis karod kurta kaha se....
2. Bhojan Aur Vigyan
3. Dr. Abdul Kalam

STORY

Vaani Hindi Patmala – Ashok kumar , kanta Bhatya

Oxford University Press ISBN-10:0-19-9469687

1. Raja Ka Chunaav – Ashok Kumar Kantha Bhatiya

Poos Ki Raat –Premchand

Grammar

Reference Book

Sugam Hindi Vyakaran - Prof.Vanshi Dhar and Dharmapal Shastri

Siksha Bharathi, New Delhi

ISBN-10:81-7483-037-5

Prescribed Portion

Noun, Verb, Pronoun, Vachan, Gender

Functional Hindi

Hindi Vataayan – Dr. K.M.Chandra Mohan

ISBN : 81-7124-223-5, Vishwa Vidhyalay Prakashan, Varanasi

Semester – II

U19H2 : Comprehension, Grammar – 2, Drama And Hindi Literature-1

Objectives :

- Unit I :** The Objective of teaching comprehension is to incorporate self-reading and understanding.
- Unit II :** The Objective of teaching grammar is to acknowledge the basic rules of the grammatical structures.
- Unit III :** The Objective of teaching Literature is to acquire the knowledge of the origin of Hindi in literature.
- Unit IV :** The Objective of teaching one act play is to help the learners to understand the method of acting and writing a play.
- Unit V :** The Objective of teaching Drama is to acknowledge the basic dramatic structures.

Program Outcome :

The Learners will be able to comprehend on their own and to improve their reading skills. The learners will be able to communicate accurately free of grammatical errors. The learners will get a widen knowledge of Hindi literature. The learners will understand various genres of literary works. The learners will get deep and broad vision of drama.

SEMESTER - II

COURSE CODE : U19H2

6hrs/wk

PAPER II – COMPREHENSION, GRAMMAR – 2, DRAMA AND HINDI LITERATURE-1

Unit – 1 Comprehension

1. Discipline
2. Humanity
3. Coeducation
4. Student Life
5. Importance of Hard work

Unit – II Grammar

1. Adjective
2. Adverb
3. Conjunction
4. Tense

Unit – III Hindi Literature

1. Aadi kaal (Introduction, Specialities, Famous Poets)

Unit – IV One act play

1. Reed ki Hadhi (Jagdeesh Chandra Mathur)
2. Andheri Nagari (Bharathendu Harischandra)

Unit – V Drama

1. Swarg ke Jalak (Upendranath Ashak)

DEPARTMENT OF HINDI

For Candidates admitted from the Academic Year 2019 onwards

U19H2

SEMESTER – II

PAPER II – COMPREHENSION, GRAMMAR – 2, DRAMA AND HINDI LITERATURE-1

Comprehension

Prescribed Text Book

Adhunik Hindi Nibandhavali - Praveshika Book

Hindi Prachar Pushtakmala, Madras.

Prescribed Lessons

1. Discipline
2. Humanity
3. Coeducation
4. Student Life
5. Importance of Hard work

One Act Play

Hindi Sahith Rastrabhasha patya saamgri

O.No.1636 Hindi Prachar Pushtakmala, Pushpa-507

1. Andheri Nagari – Bharatendu Harishchandra
2. Reed ki Haddi – Jagdish Chandra Mathur

Drama

Swarg ki Jalak – Upendranath Ashk

Grammar

Sugam Hindi Vyakaran - Prof.Vanshi Dhar and Dharmapal Shastri

Siksha Bharathi, New Delhi

ISBN-10:81-7483-037-5

Prescribed Portion

Adjective, Adverb, Conjunction, Tense

Hindi Literature

Aadi kaal (Introduction, Specialities, Famous Poets)

Prescribed Book

1. **Hindi Sahithya ki Pravirthiya – Dr. Jaykisan Prasad**

Semester – III

U19H3 : Dialogue Writing, Poetry, Translation -2 Hindi Literature-2

Objectives :

- Unit I :** The Objective of teaching couplet will give learners confidence and energetic.
- Unit II :** The Objective of teaching dialogue writing is to teach the learners about appropriate words and style in appropriate place.
- Unit III :** The Objective of teaching Bhakthi Literature is to acquire the knowledge of the origin of Bhakthi and its movement in Hindi literature.
- Unit IV :** The Objective of teaching Poetry is to make the learners to acquire the knowledge of the poets and their writings.
- Unit V :** The Objective of teaching Translation to the learners to get knowledge of translation from the source to target language. They also gain the knowledge of homonyms and synonyms in Hindi.

Program Outcome :

The Learners will understand the couplets and poetry by the prescribed units. The learners will come to know about the dialogue delivery and their usage in their daily life also they can translate from source to target language. They can understand the Bhakthi movement through Hindi Literature.

SEMESTER - III

COURSE CODE : U19H3

6hrs/wk

PAPER – III DIALOGUE WRITING, POETRY, TRANSLATION -2 HINDI LITERATURE-2

Unit – I Couplets

1. Couplets of Kabir
2. Couplets of Tulshi
3. Couplets of Rahim

Unit –II Dialogue Writing

1. Mother and Daughter
2. Teacher and Student
3. Between Two Friends
4. Brother and Sister
5. Customer and Shopkeeper

Unit – III Hindi Literature

1. Bhakthi Kaal (Introduction, Specialities, Famous Poets)

Unit – IV Poetry

1. Baghavan ke Dakiye (Ramdhari singh Dinakar)
2. Tera Sneh na kovoona (Sumitranandan Pant)
3. Kilonaa (Chiyaram Saran Gupta)

Unit – V Translation

1. English to Hindi (Lesson 1 to 5)
2. Homonyms
3. Synonyms

DEPARTMENT OF HINDI

For Candidates admitted from the Academic Year 2019 onwards

U19H3

SEMESTER – III

PAPER – III DIALOGUE WRITING, POETRY, TRANSLATION -2 HINDI LITERATURE-2

Couplets

Prescribed Text Book

Kavya Sourab - Hindi Prachar Pushtakmala, Pushpa- 437

O.No. 1242, Dakshin Hindi Prachar Sabha, Madras.

Prescribed couplet

- 1. Kabir – 5 dohas**
- 2. Tulsi – 5 dohas**
- 3. Rahim – 5 dohas**

Poetry

Prescribed Book

Vasanth III

Subodh Hindi Patmala – 3, Hindi Prachar Pushtakmala, Pushpa – 507, O.No.1636

Prescribed Poem

- 4. Baghavan ke Dakiye - Ramdhari singh Dinakar**
- 5. Tera Sneh na kovoona - Sumitranandan Pant**
- 6. Kilouna - Chiyaram Saran Gupta**

Dialogue Writing

Hindi Vataayan – Dr. K.M.Chandra Mohan

ISBN : 81-7124-223-5, Vishwa Vidhyalay Prakashan, Varanasi

Hindi Literature

Bhakthi Kaal (Introduction, Specialities, Famous Poets)

Prescribed Book

Hindi Sahithya ki Pravirthiya – Dr. Jaykisan Prasad

Translation

Subodh Hindi Patmala – 1

Hindi Prachar Sabha, Madras.

Prescribed Lessons

Lesson 6 to 10

Homonyms

Synonyms

Semester – IV

U19H4 : Letter Writing, General Essay, Hindi Literature-3

Objectives :

- Unit I :** The Objective of teaching letter writing is to improve their communication skills through writing letters in formal and informal way.
- Unit II :** The Objective of teaching Modern Era in Hindi literature to acquire the knowledge of various subjects which was used in pre independence and post independence and also in recent years.
- Unit III :** The Objective of teaching Street play is to introduce theatre arts and the origin of today's theatre.
- Unit IV :** The Objective of teaching Technical words and phrases is to develop their writing skill. Writing essay will develop their creativity. The learners were encouraged to summarise a passage through precise writing.
- Unit V :** The Objective of teaching Fiction is to acquire knowledge of a long story and their characteristics.

Program Outcome :

The Learners will able to draft and structure letters on their own. They come to know about the modern era in Hindi literature. They understand the role of street play in recent times. They can be aware of using technical words and phrases. Now they can understand the role of fiction by reading and get the knowledge of authors vision.

IV SEMESTER

Course Code: U19H4

6hrs/wk

PAPER IV- LETTER WRITING, GENERAL ESSAY,HINDI LITERATURE-3

Unit – I Letter Writing

1. Leave Letter
2. Placing Order for Books
3. Complaint Letter

Unit – II Hindi Literature

1. Modern Era (Introduction, Specialities, Famous Poets)

Unit – III Street Play

1. Aurat

Unit – IV

1. Technical Words
2. Technical Phrases
3. General Essay
4. General Essay
5. Precise Writing

Unit – V Novel

1. Kadiyan (Bhishma Sahani)

DEPARTMENT OF HINDI

For Candidates admitted from the Academic Year 2019 onwards

U19H4

SEMESTER – IV

PAPER IV- LETTER WRITING, GENERAL ESSAY, HINDI LITERATURE-3

Letter Writing

Prescribed Letters

6. Leave Letter
7. Placing Order for Books
8. Complaint Letter

Street Play

Prescribed Book

Indra Gandhi Rashtriya Mukta Vishva Vidhyalay, New Delhi.

ISBN – 81-7605-844-0

Prescribed Play

Aurat

Hindi Literature

Modern Era (Introduction, Specialities, Famous Poets)

Prescribed Book

Hindi Sahithya ki Pravirthiya – Dr. Jaykisan Prasad

Prescribed Book

Hindi Vataayan – Dr. K.M.Chandra Mohan

ISBN : 81-7124-223-5, Vishwa Vidhyalay Prakashan, Varanasi

Prescribed Portion

4. Technical Words
5. Technical Phrases
6. General Essay
9. General Essay
10. Precise Writing



NATIONAL COLLEGE (AUTONOMOUS)
LANGUAGE COURSE PART I SANSKRIT SEMESTER I PAPER I SANSKRIT I
(For the candidates admitted from June 2019 onwards)

SYLLABUS

SUBJECT CODE:U19S1

Unit I

संस्कृतभाषा देवनागरीलिपि: च - परिचयः
कर्तृपद-परिचयः

- १। संस्कृत भाषा - प्रास्ताविकम्
- २। अक्षराभ्यासः, वर्णाः,
- ३। स्वराः, व्यञ्जनानि, संयुक्ताक्षराणि, लेखनप्रकारः च
- ४। अकारान्त-शब्दाः
- ५। लिङ्गत्रयम्
- ६। वचनत्रयम्
- ७। विभक्तयः
- ८। अनुवाद-अभ्यासः
- ९। आङ्गल/तमिल् भाषायां संस्कृतात्
- १०। संस्कृते आङ्गल/तमिल् भाषातः

Unit II

क्रियापदानि (परिचयः)

1. वर्तमानकाले (लट्) धातवः

- १। अन्यपुरुष/प्रथमपुरुष/मध्यमपुरुष/उत्तमपुरुषः च
- २। एकवचनम्, बहवचनम् च
- ३। क्रियापदानि - गम् (गच्छ्), पिब्, पठ्, क्रीड्, वद्

2. पुल्लिङ्ग-कर्तृपदानि
सर्वनामपदानि च

- १। बालकः, शिक्षकः, अध्यापकः, नृपः, देवः, मनुष्यः,
हस्तः अलसः कुशलः, अहम्, त्वं, सः।

3. नपुंसक-लिङ्ग-कर्तृपदानि

- १। पुस्तकम्, फलम्, दुग्धम्, घृतम्, उद्यानम्, पुष्पम्,
जलम्, मधुरम्, कन्दुकम्, भोजनम्।

4. अव्ययानि

- १। तत्र, कुत्र, यत्र, अत्र, न, तदा, कदा, यदा-तदा,
शीघ्रं, द्रुतम्, सत्त्वरम्, पश्चात्, अपि, सह, अतः
साकम्, सार्धम्, समं, एव, तावत्, तु, यदि-तर्हि,
सदा।

5. अन्ये अकारान्त-कर्तृपदानि

- १। सूर्यः, सायंकालः, प्रकाशः, वृद्धः, सत्यं, असत्यं,
विद्यालयः, गृहम्, जलम्, दुग्धम्, मधुरम्, भोजनम्

Unit III

1. अनुवाद-अभ्यासः

2. विभक्तीनां परिचयः

3. प्रश्न-निर्माण-पदानि

4. क्रियापदानि(लट्)

5. अनुवाद-अभ्यासः

उपर्युक्त-कर्तृ-क्रियापदानि वाक्येषु उपयोगः,
अनुवाद-अभ्यासः च।

१। प्रथमा विभक्तिः - संबोधनप्रथमा-विभक्तिपर्यन्तं
विभक्ति-अन्तानां परिचयः ,

२। विभक्ति-अन्तानां प्रत्ययैः आदेशाः

३। तृतीया विभक्तिः - सह, साकं सार्धम्, समं

४। चतुर्थी विभक्तिः - षष्ठ्याः विभक्तेः कृते प्रत्ययः

५। विना इत्यादीनां अव्ययानां उपयोगः।

किम्, कुत्र, कथं, किमर्थम्, कुतः, कदा।

वर्तमानकाले

भू (भव) अस्, धाव् , कृ (कर्) अस्, धाव्,

पत्, आ-गम् (गच्छ)।

आङ्गलात् संस्कृते/ संस्कृतात् आङ्गले

Unit IV

1. विशेषण-विशेष्यौ

2. संख्यावाचकपदानि

3. सर्वनामपदानि

4. भविष्यत्काले क्रियापदानि (लृट् लकारः)

5. भोज्यपदार्थनामानि

१। रङ्गाः -शुक्ल-नील-पीत-रक्त-हरित-कपिश-
चित्र-भेदाः। तथा अन्यानि सरलपदानि

२। तेषां विशेषणेषु उपयोगः

१। संस्कृते संख्यावाचकपदानि (० त। १०
पर्यन्तम्।

१। तद् शब्दः - पुल्लिङ्ग-स्त्रीलिङ्ग-
नपुंसकलिङ्गाः

२। अस्मद् - युष्मद् शब्दौ।

३। एतद् शब्दः - त्रिषु लिङ्गेषु

१। गम् (गच्छ), पठ्, वद, पत्, लिख्, क्रीड्,
आ-गम्(गच्छ), भू (भव), धाव्, पा(पिब),
दृश्(पश्य), कृ (कर्)।

१। तेषां वाक्येषु उपयोगः।

२। अनुवाद-अभ्यासः।

३। वार्तालापः



Unit V

1. प्रत्ययाः
 - १। क्त-प्रत्ययः
 - २। तुमुन्नन्तः
 - ३। क्त्वा प्रत्ययः
 - १। अट्, भक्ष्, अर्च्, खेल्, चल्, धार्, कथ्, क्षाल्, पाल्, तुल्, मार्, घर्ष्, तोष्, गण्, ।
 - १। कृषीवलः इति पाठः।
 - २। नूतन-क्रियापदानि -क्री, वि-क्री, सिच्, रुह्, वर्ष्, रुह्, रच्, निस्ज्-कस्, वस्, कृष्, मुच् ।
 - १। आकारान्तः स्त्रीलिङ्गः माला शब्दः
 - २। समानान्त-पदानि।
 - ३। पदानां वाक्येषु उपयोगः
 - १। सवर्णदीर्घ-सन्धिः
 - २। गुणसन्धिः
 - ३। वृद्धिसन्धिः
 - ४। सन्धीनां वाक्येषु उपयोगः
 - ५। सन्धीनां अभ्यासः
2. क्रियापदानि (लट् लकारे)
3. कृषि-संबन्धीनि पदानि
4. आकारान्त-स्त्रीलिङ्गः
5. सन्धिः (स्वरः)

Prescribed Book: Saral Sanskrit Sikshak Part I, Bharatiya Vidya Bhavan, Mumbai, 400007.

(Omitted portions: Lesson I: Passage starting: रामो राजमणिः with the meaning.

Lesson 6,7: Passage for memory (Memorise) at the end.

Lesson 10 and Lesson 12: Full)

References:

Sanskrita Bodhini (Prathama), Sanskrita Bhasha Pracharini Sabha, Chittoor, Andhra Pradesh, 2011

NATIONAL COLLEGE (AUTONOMOUS)
LANGUAGE COURSE PART I SANSKRIT SEMESTER II PAPER II SANSKRIT II
(For the candidates admitted from June 2019 onwards)
SYLLABUS
SUBJECT CODE: U19S2

Unit I

1. पुनश्चर्या

गतषाणमासे अभ्यस्तानाम्

2. कर्तृपदानां परिचयः

१। इकारान्तः पुल्लिङ्गः कविशब्दः

केचन समानान्त-शब्दः च।

२। सर्वनामशब्दः - तद् - स्त्रीलिङ्गे

३। इकारान्तः स्त्रीलिङ्गः मतिशब्दः,

केचन समानान्त-शब्दाः च।

४। एतेषां वाक्येषु उपयोगः, अनुवाद-अभ्यासः च।

3. क्रियापदानि

वर्तमानकालः (लट्)

१। जप्, चर, रक्ष, हस्, वम्, नम्, दह, तप्, वस्,

इच्छ, वाञ्छ, शंस्, त्यज्, जल्प, निन्द, क्षिप्।

२। वाक्येषु उपयोगः, अनुवाद-अभ्यासः च।

Unit II

1. भविष्यत्कालः (लृट्) नूतनक्रियापदानि

१। अर्ज्, दण्ड्, चिन्त्, ज्वल्, तर्ज्, तर्क्, तप्,
नट्।

1. नूतनकर्तृपद-परिचयः

१। इकारान्त पुल्लिङ्गः तथा स्त्रीलिङ्गपदानि
उपर्युक्त-क्रियापदानि च मिलित्वा वाक्येषु
उपयोगः

2. आत्मनेपदिनः धातवः (क्रियापदानि)

वर्तमानकाले (लट्)

१। यत्, लभ्, रम्, क्षम्, त्रप् सह, स्वद्, बाध्,
भाष्, भास्

२। पूर्वोक्त-कर्तृपदानि क्रियापदानि च वाक्येषु
उपयोगः

३। अनुवाद-अभ्यासः

3. आत्मनेपदिनः धातवः (लट् क्रियापदानि)

१। भाष्, यत्, लभ्, रम्, क्षम्, त्रप्, सह, स्वद्,
भास्

२। संवादः - अभ्यासः



Unit III

1. भूतकालः (लङ्)

- १। सर्वेऽपि धातवः वर्तमानकाले कृताः।
- २। भूतकालक्रियापदानि वाक्येषु उपयोगः।
- ३। वर्तमानकालं भूतकालं च मिश्रित्य वाक्येषु उपयोगः।
- ४। वाक्येषु उपयोगः अनुवाद-अभ्यासः च।

2. प्रेरणार्थकं क्रियापदम् (भविष्यत्) लोट्

- १। सर्वेऽपि धातवः ये वर्तमानकाले तथा भूतकाले कृताः।
- २। प्रेरणार्थकक्रियापदानि च वाक्येषु उपयोगः पूर्ववत् (मध्यमपुरुष-एकवचनमात्रम्)
- ३। अनुवाद-अभ्यासः

Unit IV

1. सन्धिप्रकरणम्

- १। यण् सन्धिः
- २। अयादिसन्धिः

2. नूतन-कर्तृपदानि (पुल्लिङ्गः)

- १। उकारान्तः पुल्लिङ्गः गुरु शब्दः
- २। समानान्त-शब्दा केचन।
- ३। उकारान्त-पदानि वाक्येषु उपयोगः
- ४। अनुवाद-अभ्यासः
- ५। संख्यावाचकपदानि १ - २५ संस्कृते।

३। नूतन-कर्तृपदानि (स्त्रीलिङ्गः)

- १। उकारान्तः स्त्रीलिङ्गः धेनु शब्दः
- २। समानान्तक-शब्दाः केचन।
- ३। उकारान्त-पदानि स्त्रीलिङ्गे उपयोगः
- ४। अनुवाद-अभ्यासः
- ५। पुल्लिङ्ग-स्त्रीलिङ्ग-पदानि मिश्रित्य वाक्येषु उपयोगः ।

4. कथालेखनम्

१। पाठ्यक्रम-अन्तर्गत-कथा

२। नूतन-कर्तृपदानि (कथा-अन्तर्गतानि)

Unit V

1. नूतन-प्रत्ययाः

१। क्तवतु प्रत्ययः- क्तप्रत्ययः

२। कर्तरि प्रयोगः कर्मणि प्रयोगः च

३। सन्नन्ताः - इच्छाप्रकृतिः(Desiderative)

2. नूतन-क्रियापदानि

१। प्रथ्, प्री, बन्द्, भूष्, मृज् (मार्ज्), युज्,

रच्, स्निह्, हिंस् (लट् परस्मैपदि, आत्मनेपदि)

२। उपरि अभ्यसित-धातु तथा प्रत्ययान् वाक्येषु
उपयोगः

३। संभाषणम् - कालिदासकृतं अभिज्ञानशाकुन्तलम्।

Prescribed Book: Sarala Sanskrit Sikshak Part II, Bharatiya Vidya Bhavan,
Mumbai 400007.

(Omitted portions: 1. Lesson 2: श्लोकाः (pages 14, 15)

2. Lesson 4, श्लोकः (page 23)

3. Lesson 10, सुभाषितानि, संस्कृत-लोकोक्तयः)

References:

1. संस्कृत-व्यवहार-साहस्री, Samskrita Bharati, Bengaluru 560085.

2. संस्कृतबोधिनी, प्रथमा, संस्कृतभाषाप्रचारिणि सभा, चित्तूर, आन्ध्रप्रदेश ५०७५०९

संवत्सरः - २०११

NATIONAL COLLEGE (AUTONOMOUS)
LANGUAGE COURSE PART I SANSKRIT SEMESTER III PAPER III SANSKRIT III
SYLLABUS
SUBJECT CODE: U19S3

Unit I

- १। पुनश्चर्या
- २। पशु-पक्षि-वृक्ष-वर्ग-शलाटुका-फल-नामानि
- ३। वाणिज्य-उपयोगि-पदानि
मापनं तोलनं च
- ५। संख्यावाचकपदानि
- ६। संवत्सरनामानि
- ७। सस्यादि नामानि
- ८। धन/धनपत्र/नाणक नामानि
- ९। इदं शब्दः - पुनपुंस्त्रीषु।
- १०। अनुवाद अभ्यासः

Unit II

- १। क्रियापदानि
लोट् लकारे परस्मैपदि, आत्मनेपदि च
- २। इतोऽपि अव्ययानि
- ३। कथालेखनप्रकारः
- ४। अनुवादः
- ५। उपसर्गाः
- ६। तेषां वाक्येषु उपयोगः

Unit III

- १। ईकारान्त-स्त्रीलिङ्गपदानि
नदी, अटवी, कौमुदी, वाहिनी, नगरी
इत्येतानि पदानि, तेषां शब्दरूपानि च
- २। क्रियापदानि, परस्मैपदिनः
- ३। आत्मनेपदिनः
- ४। उभयपदिनः
- ५। शरीर-अङ्गनामानि, भूषण-नामानि
- ६। ऋकारान्तःपुल्लिङ्ग-शब्दाः कर्तृ, पितृ,
इत्यादयः
- ७। क्रियापदानि
- ८। अनुवाद-अभ्यासः



Unit IV

- १। कृषिकर्म
- २। कृषिसंबन्धीनि उपकरणानि
- ३। अनुवाद-अभ्यासः
- ४। ल्यबन्ताः
- ५। वाक्येषु उपयोगः
- ७। विधिलिङ् (optative/potential mood)-1
- ८। परस्मैपदि आत्मनेपदि च

Unit V

- १। नकारान्तः पुल्लिङ्गः राजन् शब्दः
- २। सन्धिप्रकरणम् - पुनश्चर्या
- ३। विसर्गसन्धिः
- ४। नूतन-अव्यय-पदानि
- ५। अनुवाद-अभ्यासः
- ६। विधिलिङ् (optative/potential mood)-2
- ७। भोजनवेला - संवादः
- ८। नूतन-कर्तृ-क्रिया-अव्यय-विविध-प्रत्यय-पदानि ।
- ९। शब्दरूपाणि, धातुरूपाणि च पुनश्चर्या ।

Prescribed books: 1. Saral Sanskrit Sikshak, Part III, Bharatiya Vidya Bhavan, Mumbai 400007.

Omitted portions: 1. Lesson 9 सीतायाः स्वयंवरः

2. Lesson 11, सुभाषितानि, संस्कृत-लोकोक्तयः

References:

1. Samskrita-vyavaharasahasri, Samskrita Bharati, Bengaluru 85
2. Angala-samskrita kosha, Samskrita Bharati, Bengaluru 85.

NATIONAL COLLEGE (AUTONOMOUS)
LANGUAGE COURSE PART I SANSKRIT SEMESTER IV PAPER IV SANSKRIT IV
SYLLABUS
SUBJECT CODE: U19S4

Unit I

- १। प्रथम-षाण्मासिक, द्वितीय-षाण्मासिक, तृतीय-षाण्मासिक-अभ्यस्तानां विषयाणां पुनश्चर्या
- २। सर्व-शब्दः त्रिषु लिङ्गेषु।
- ३। वाच् शब्दः स्त्रीलिङ्गे
- ४। अनुवाद-अभ्यासः
- ५। हिमालयः - रचनालेखनम्

Unit II

- १। ओकारान्तः स्त्रीलिङ्गः गो शब्दः
- २। गो-संबन्धीनि पदानि
- ३। गां अधिकृत्य लेखः
- ४। नूतन-कर्तृ-क्रियापदानि - शब्दसंग्रहः
- ५। अनुवाद-अभ्यासः
- ६। पदानां वाक्येषु उपयोगः

Unit III

- १। समासः - उपोद्घातः
- २। तत्पुरुष-समासः
- ३। कर्मधारय-समासः
- ४। बहुव्रीहि-समासः
- ५। द्वन्द्व-समासः
- ६। द्विगु-समासः
- ७। अव्ययीभाव-समासः
- ८। एकशेषसमासः

संस्कृतम् - दैनन्दिनव्यवहारः

1. संस्कृत-व्यवहारः

- १। संख्यावाचकपदानि २५ तः ५० पर्यन्तम्।
- २। बन्धुवर्गनामानि
- ३। गृहे उपयुक्तानां वस्तूनां नामानि
- ४। वासर-तिथि-पक्ष-मास-नामानि
- ५। दैवत-ग्रहाणां नामानि

UNIT IV

1. रचनात्मकं कार्यम्

- १। पत्रलेखन- उपोद्घातः, उदाहरणानि च
- २। पिता/माता - पुत्राय/पुत्र्यै
- ३। पितरं/मातरं प्रति - पुत्रः/पुत्री
- ४। मित्राय पत्रम्
- ५। पतिः/पत्नी - पत्न्यै/पत्ये

2. अनुच्छेदः

- १। दत्तं अनुच्छेदं पठित्वा उत्तरलेखनम् - प्रकारः
- २। सरल-कथायुक्तम्, सरल-गद्यांशयुक्तम् च।

3. अनुच्छेदलेखनम्

- १। दत्तानि पदानि विचित्य पञ्चवाक्येषु एकम् अनुच्छेद-लेखनम्।
- २। सरलकथा अथवा गद्यांशयुक्तम्।

4. रचनालेखनम् (पाठ्यपुस्तक-अन्तर्गतम्)

- १। सरलकथा
- २। गद्यांशः

UNIT V

1. श्रेष्ठभाषा द्रविडभाषा - अस्याः ऐतिहासिकं स्थानम्।

- १। भाषायाः स्थापनम्
- २। भाषा-समूहः
- ३। श्रेष्ठभाषायाः गुणानि।
- ४। श्रेष्ठभाषाः
- ५। भारतीय-श्रेष्ठ-भाषे - द्रविड-संस्कृते
- ६। द्रविडभाषायाः पुराणत्वम्।
- ७। द्रविडभाषां श्रेष्ठभाषा-समूहे योजयितुमान्दोलनम्।
- ८। विश्व-श्रेष्ठद्रविडभाषा सम्मेलनम् २०१०

Prescribed Book: Sarala Sanskrit Sikshak Part IV, Bharatiya Vidya Bhavan,
Mumbai 400007.

(Omitted portions:

Lesson 2: विद्याप्रशंसा, Lesson 7: लङ्कातः यदा हनूमान् प्रतिनिवृत्तः Lesson 8: रामस्य वनगमनम्
Lesson 12: नलदमयन्ती-वर्णनम् Lesson 13: किङ्करैः पश्य किं कृतम् Lesson 14: रूपाणि
Lesson 15: सुभाषितानि Lesson 17: लोकोक्तयः।)

References:

1. संस्कृतव्यवहारसाहस्री, संस्कृतभारती, बेङ्गलूरु ५६००८५।
2. संस्कृतबोधिनी (द्वितीया), संस्कृतभाषाप्रचारिणी सभा, धितूर, आन्ध्रप्रदेशः ५१७५०१।

CORE-I
DESCRIPTIVE STATISTICS
U19ST1

Semester : I

Hours:6

Credit : 5

Objective: Enable the students to understand and study about the descriptive statistics

Unit I

Introduction-Origin and Growth of Statistics- Statistics definition –Statistics : Science or Art- Functions of Statistics-Applications of Statistics- Limitations of Statistics.

Unit II

Statistical survey- an introduction –planning the survey-executing the survey.

Unit III

Collection of data-introduction –primary and secondary data-methods of collecting primary data-drafting the questionnaire-pre-testing the questionnaire (Pilot survey)-sources of secondary data-editing primary and secondary data. Meaning and Objectives of classification-types of classification-tabulation of data-types of tables-types of diagrams-graphs-limitations of diagrams and graphs.

Unit IV

Introduction-types of averages-merits and demerits-relationship among the averages between A.M,G.M, and H.M

Unit V

Introduction-dispersion definition-significance of measuring variation-properties of a good measures of variation-measures of skewness -Karl Pearson's and Bowley's coefficients of skewness, Moments-Row and Central. Kurtosis concepts and measures of kurtosis. Correlation and Regression analysis-Methods of least squares -Simple problems.

Text Books:

1.Gupta.S.P-Statistical Methods-Sultan Chand & Sons,New Delhi.

Unit:I 1 to18, Unit:II 25 to 37, Unit:III 39 to 60, Unit:IV 91 to 96,109 to 114, 127 to 176

Unit:IV 177 to 238, Unit:V 271 to 304, 340-387

Book for Reference:

1.Gupta .S.C and Kapoor.V.K- Fundamental of mathematical Statistics-Sultan Chand & Sons-New Delhi.

Allied Mathematics – U19AMST1

(For Mathematical Statistics)

Semester : I

Allied Course: I

Instruction Hours/Week :

Credit 5

Objective: Enable the students to understand and study basic mathematics

Unit I

Successive differentiation -nth derivatives of standard functions-Leibnitz's theorem, related problems

Unit II

Rolle's theorem, mean value theorems, Intermediate forms, maxima and minima of functions of one and two variables.

Unit III

Definite integrals-integration by parts – reduction formula – properties of definite integrals-related problems

Unit IV

Double integral in Cartesian and polar coordinates-changing the order of integration-triple integral

Unit V

Beta and Gamma functions-definitions –recurrence formula of Gamma function –properties of Beta function-relation between Beta and Gamma function and simple problems.

Text Books:

1. S. Narayanan, T.K. Manickavasagam Pillay, Calculus (Vol. I), S. Viswanathan Printers and publishers, Reprint 2003 (Unit-I, Unit-II).
2. S. Narayanan, T.K. Manickavasagam Pillay, Calculus (Vol. II), S. Viswanathan Printers and publishers, Reprint 2003 (Unit-III, Unit-IV, Unit-V).

Unit I Chapter - 3, Sections: 1.1-1.5, 2.1,2.2.

Unit II Chapter - 6, Sections: 1,2.1-2.5,4.1- 4.6.

Unit III Chapter - 1, Sections: 11, 12, 13.

Unit IV Chapter - 5, Sections: 1- 6.

Unit V Chapter - 7, Sections: 2.1-2.3, 3, 4, 5.

CORE-P II
PRACTICAL-I
U19ST2P

Semester-I & II(NS)

Hours:

Credits:3

Semester I& II
(Based on core paper I)

NOTE:

- ❖ Internal Exam 25 Marks, Practical Semester Examinations 75 Marks.
- ❖ Duration of the examination: 3 Hours
- ❖ Six questions are to be set without omitting any unit.
- ❖ Candidates are to answer any four questions.
- ❖ All questions carry equal marks.

1. Construction of uni- variate, bi-variate frequency distributions
2. Diagrammatic and graphical representation, Ogives, Lorenz curves.
3. Measures of Central Tendency
4. Measures of Dispersion.
5. Measures of skewness and kurtosis
6. Correlation
7. Regression Equation
8. Curve fitting $y = a + bx$, $y = a + bx + cx^2$, $y = ab^x$

CORE-III

PROBABILITY THEORY U19ST3

Semester-II

Hours:

Credit: 5

Objective: Enable the students to understand and study random phenomena mathematically.

Unit:-I

Introduction-probability defined-importance of the concept of probability-calculation of probability- Theorems of probability- Addition theorem, Multiplication theorem- conditional probability- Baye's theorem- simple problems.

Unit:-II

Concepts of random variables- discrete and continuous random variables - probability mass function – probability density function- Distribution Function – properties of distribution function.

Unit:-III

Two dimensional random variables – joint probability mass function – two dimensional distribution function – joint density function , Marginal density function – conditional distribution function and conditional probability density function-simple problems.

Unit :-IV

Mathematical expectations- properties of expectation-variance-properties of variance-covariance- simple problems.

Unit :-V

Moment generating function-cumulants-characteristic functions-simple problems-Inversion theorem(Statement only)-uniqueness theorem(Statement only)-hally bray theorem-chebychev's inequality-simple problems.

Text books :

1.Gupta.S.P-Statistical Methods-Sultan Chand & Sons,New Delhi.

Book for Reference:

1.Gupta .S.C and Kapoor.V.K- Fundamental of mathematical Statistics-Sultan Chand & Sons- New Delhi.

Allied Mathematics-II – U19AMST2P

(For Mathematical Statistics)

Semester : II

Instruction Hours/Week :

Credit

3

Objective: Enable the students to understand and study basic mathematics.

Unit I

Different methods to find the solutions of algebraic and transcendental equations-The Bisection method – The Iteration method – The method of False Position – NewtonRaphson method – Generalized Newton's method.

Unit II

Finite Differences – Forward differences – Backward differences – central differences –symbolic relations and separation of symbols – Newton's forward and backward difference formula – Lagrange's interpolation formula.

Unit III

Numerical Differentiation: Newton's forward and backward difference formula – Numerical Integration: Trapezoidal rule – Simpson's rule (1/3 and 3/8).

Unit IV

Solutions to linear systems - direct methods and indirect methods - Gaussian Elimination method - Gauss Method to find the Inverse - Method of factorisation - Iterative Methods.

Unit V

Numerical solution of ordinary differential equations - Taylor series method - Picard's method- Euler's method - Euler's modified method – Runge – Kutta method - AdamsMoulton method- Milne's method(Only Problems).

TEXT BOOK: S.S.Sastry, Introductory Methods of Numerical Analysis, Prentice Hall of India Private Limited,2010.

UNIT I - Chapter 2: Section 2.1,2.2,2.3-2.3.1, 2.4, 2.5 – 2.5.1

UNIT II - Chapter3: Section 3.3-3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.6, 3.10 - 3.10.1

UNIT III – Chapter 5:Section 5.1,5.2, 5.4-5.4.1, 5.4.2,5.4.3

UNIT IV – Chapter 6: Section 6.3-6.3.2, 6.3.3, 6.3.4, 6.4, 6.5

UNIT V - Chapter 7: Section 7.1,7.2,7.3, 7.4-7.4.2, 7.5,7.6-7.6.1, 7.6.2

REFERENCES:

1. S.Narayanan & Others, Numerical Analysis, S.Viswanathan Publishers, 1994.
2. A.Singaravelu, Numerical Methods, Meenachi Agency, June 2000.

Allied Mathematics-III

(For Mathematical Statistics)

Semester : II

Code: U19AMST3

Hours :

Credit : 5

Objective: Enable the students to understand and study basic mathematics.

Unit I

Solving differential equations of the form $Mdx + Ndy = 0$ -first order , higher degree differential equations :Solvable for x, solvable for y, solvable for dy/dx , Clairaut's form-simple problems.

Unit II

Particular integrals of second order differential equations with constant coefficients- particular integrals for e^{ax} , $\sin ax$, $\cos ax$, x^m .

Unit III

Rank of the matrix-consistency-Eigen values , Eigen vectors- Cayley Hamilton's theorem (statement only) –Symmetric ,Skew symmetric ,orthogonal , Hermitian ,Skew Hermitian and Unitary matrices-simple problems

Unit IV

Sequence –bounded sequences-monotonic sequence –convergence sequences-divergence and oscillation sequences- Comparison test-geometric series –harmonic series –D'Alembert's ratio test, Raabe's test-Gauss's test.

Unit V

Cauchy's condensation test-Cauchy's root test-Alternative series- Leibnitz's test-Absolute convergence-Simple problems.

Text Book:

1. M.D. Raisinghania, Ordinary & Partial Differential Equations, S.Chand & Co., 2001(Unit I&II).
2. T.K.Manickavasagam Pillay & Others, Algebra Vol. II, S.V. Publications 2008.(Unit III)
3. Dr. S. Arumugam, Sequences & Series, New Gamma Publishers, 1999.

Unit I: Chapter – 2, Sections: 2.9 – 2.11, Chapter – 6, Sections: 6.1 – 6.12.

Unit II: Chapter – 4, Sections: 4.1 – 4.14.

Unit III: Chapter – 6, Sections: 1,6,9,11,16

Unit IV: Chapter – 3, Sections: 3.1 – 3.5, Chapter – 4, Sections: 4.2, 4.3.

Unit V: Chapter – 4, Sections: 4.4, Chapter – 5, Sections: 5.1, 5.2.

CORE- IV

DISCRETE PROBABILITY DISTRIBUTIONS

Semester: III

Hours :

Code : U19ST4

Credits : 5

Objective : To impart knowledge about discrete distributions to the under graduate students

Unit I :

Uniform distributions-Bernoulli distributions –binomial distributions-definitions-moments of binomial – moment generating functions-additive property, characteristic functions-recurrence relation for cumulants-fitting of binomial distribution-simple problems.

Unit II:

Poisson distribution – moments – recurrence relation for moments-moment generating functions-characteristic functions-cumulants-fitting of poisson distribution –simple problems.

Unit III:

Negative binomial distributions- Moment Generating Functions –cumulants- poisson distribution-distribution of a limiting case of the negative binomial distributions-simple problems

Unit IV:

Geometric distributions mean and variance using moment generating functions - lack of memory.

Unit V:

Hypergeometric distribution –mean and variance-recurrence relation for the hyper geometric distribution.

Text books:

1.Gupta S.C. & Kapoor V.K. – Fundamentals of Mathematical Statistics , Sultan Chand & Sons , New Delhi .

References:

1.Gupta S.P – Statistical Methods , Sultan Chand & Sons , New Delhi

SECOND ALLIED

OPERATION RESEARCH – I

Semester – III

Hours :

Code :U19AMST4

Credit : 3

Objective: To equip the students with optimization Techniques and apply them to solve decision problems.

Unit I

Operations Research – origin and development of O.R – Nature and Features of O.R – Definition of O.R – Scientific method in O.R – Methodology of O.R – Applications of O.R – Linear programming problem (LPP)- Mathematical formulation of LPP – Graphical Solution

Unit II

Simple method – Big m method- Two – phase method.

Unit III

Duality in LPP – Formulation and dual problem – Dual problem when primal problem is the standard form – dual problem when primal problem is in the mixed Form – Dual simple method.

Unit IV

Transportation problem –Initial Basic Feasible solution –North – West corner method – Least method and Vogel's Approximation method and MODI method to solve an Transportation problem.

Unit V

Assignment problem – Balanced and Unbalanced Assignment problem – Hungarian method to solve an Assignment problem

Book for Study:

Kanti Swarup, Gupta.P.K & Manmohan-Operations Research- Sultan Chand & Sons-New Delhi

Book for Reference:

Taha H.A- An Introduction to Operations Research-Colliat Macmiicm

MAJOR ELECTIVE-I

VITAL STATISTICS

Semester – III

Hours :

Code : U19ST5E

Credits :5

Objective : To equip the students with the knowledge of application of Vital Statistics

Unit:-I

Introduction-Uses of Vital Statistics-Methods of Obtaining Vital Statistics- Measures of Population-Rates and Ratios of Vital Statistics.

Unit:-II

Measures of Morality-Crude death Rate-Specific Death Rates-Infant Mortality Rate-Standardised Death Rates.

Unit:-III

Mortality Table-Stationary Population-Stable Population- Central Mortality Rate-Force of Mortality –Assumptions, descriptions and Construction of Life table.

Unit:-IV

Fertility-Crude Birth Rate-General Fertility Rate-Specific Fertility Rate-Total Fertility rate.

Unit:-V

Measurement of Population Growth-Pearl's Vital Index-Gross Reproduction Rate-Net Reproduction Rate.

Book for Study:

1.For Unit I & V- Fundamentals of Applied Statistics-S.C.Gupta and V.K.Kapoor-Sultan Chand &Sons.

Book for Reference:

1. An introduction to health science statistics- [Stephen McKenzie](#) -new Australian publication.

CORE – V

PRACTICAL –II: STATISTICAL DATA ANALYSING USING SPREAD SHEET

Semester : III& IV(NS)

Hours :

Code:U19ST6P

Credits : 2

Objective : To expose the students to the analysis of statistical data using Spread Sheet

List of topics :

1. Diagrammatic & Graphical Representation

- ❖ Simple bar diagram
- ❖ Multiple bar diagram
- ❖ Line diagram
- ❖ Pie diagram
- ❖ Histogram & frequency curve

2. Frequency Distribution Table

3. Measures of Central Tendency

4.Measures of Dispersion

5.Measures of Skewness & Kurtosis

6. Correlation

7. Regression.

CORE- VI

CONTINUOUS PROBABILITY DISTRIBUTIONS

Semester: IV

Hours :

Code : U19ST7

Credits : 4

Objective : To impart knowledge on continuous distributions & their applications in various fields

Unit I :

Normal Distributions-Introduction-Limiting form of Binomial Distribution-characteristics of the Normal Distribution-Mode, Median – Moment Generating Functions.

Unit II:

Cumulant Generating Function of Normal distribution –Moments -Fitting of Normal Distribution –Simple Problems.

Unit III:

Uniform Distribution Moments – Moment Generating Function- Characteristics Functions - Gamma Distribution - Moment Generating Function – Cumulant Generating Functions – Additive Property.

Unit IV:

Beta distributions of first and second kind – Definition ,Mean and Variance – Exponential Distribution – Definition, Moment Generating Function with Mean and variance .

Unit v:

Central Limit Theorem – De-Moivre’s Laplace Theorem – Lindeberg – Levy Theorem – Liapounoff’s Theorem – Cramer’s Theorem - Applications of Central Limit Theorem.

Text books:

Gupta S.C. & Kapoor . V.K.(2013) – Fundamentals of Mathematical Statistics , Sultan Chand & Sons , New Delhi .

References:

Gupta S.P.(2014) – Statistical Methods , Sultan Chand & SSns , New Delhi

SECOND ALLIED – II*P

OPERATIONS RESEARCH - II

Semester –: III & IV (NS)

Hours :

Code :U19AMST5P

Credits : 3

Objective: To equip the students with optimization Techniques and solve them.

List of Problems :

- i. Graphical Method
- ii. Simplex Method
- iii. Big M Method
- iv. Two-Phase Method
- v. Duality and Dual Simplex Method
- vi. Transportation problems:

IBFS a) North west method

b) least cost method

c) VAM

Optimum solution by using MODI method

- vii. Assignment problems
- viii. sequencing problems
- ix. Networking scheduling by PERT & CPM

TEXT BOOKS:

Kant Swarup, Gupta , P..K, & Manmohan , Operations Research, Sultan Chand & Sons , New Delhi .

References:

Taha H . A - An Introduction to operations Research – Colliat Macmillem.

SECOND ALLIED – III
OPERATIONS RESEARCH – III

Semester – IV

Hours :

Code : U19AMST6

Credits : 4

Objective : To equip the students with optimization Techniques and apply them to solve real life problems.

Unit : I

Sequencing problem – meaning – problem of sequencing – processing n jobs through two machines – n jobs through K -machines – 2 jobs through K - machines.

Unit : II

Game Theory – Two Person Zero – sum games, the maximin – minimax principle – Games without saddle points – mixed strategies – Graphical Solution of $2 \times n$ and $m \times 2$ Games – Dominance property.

Unit : III

Networking Scheduling By PERT/CPM

Unit : IV

Queuing Theory – Introduction – Elements of a Queuing system – characteristics of queuing systems – classification of queuing Model – M/M/1 queuing systems with finite and infinite capacity.

Unit : V

Inventory control – EOQ with Shortage and without shortages – multi-item Deterministic problem

Book for Study:

Kanti swarup, Gupta , p.k, & – manmohan – Operations Research, sultan chand & sons , New delhi .

Book for References:

Taha, H . A , An Introduction to operations Research – Colliat macmillem.

CORE VII

STATISTICAL INFERENCE –I

Semester : V

Hours :

Code :

Credits : 5

Course Outcomes:

1. Learn the properties of good estimator.
2. Know the importance of maximum likelihood estimator.
3. Understand the types of estimation.
4. Know the role of Confidence interval in interval estimation.
5. Show the examples of prior and posterior distributions.
6. Obtain the importance of Cramer rao rule.

Unit-I:

Point Estimation Theory Parametric Estimation: Estimator - Characteristics of an Estimator - Consistency and Unbiasedness of an Estimator-Cramer-Rao Inequality.Efficiency-Asymptotic efficiency of an Estimator- Estimators based on Sufficient Statistics- Neyman's Factorization Theorem (without proof)- Rao-Blackwell Theorem.

Unit-II:

Methods of Point Estimation-1 Methods of point estimation-Method of Maximum Likelihood Estimator (MLE) - Properties of MLEs(without proof) – Problems based on MLEs.

Unit-III:

Methods of Point Estimation-2 Method of Moments – Problems-Method of Least Squares - Method of Minimum Chi-square-Method of Minimum variance-Minimum Variance Unbiased Estimation (MVUE)-Problems based on MVUE.

Unit-IV:

Interval Estimation Concept of interval estimation - Interval estimation in case of large samples - Confidence interval for proportions, means and variances based on Normal distribution - Interval estimation in case of small samples – Confidence interval for means and variances based on Student's - t distribution.

Unit-V:

Bayes's Estimation Elements of Bayes's estimation – Prior and Posterior distributions – Examples

Textbooks

1. Gupta, S.C. and Kapoor, V.K.: "Fundamentals of Mathematical Statistics", Sultan Chand & Sons, New Delhi, 2011.
2. Rohatgi, V.K. (1984) An introduction to probability theory and mathematical statistics, Wiley Eastern.

Reference Book

1. Kendall, M. and Stuart, A.: "The advanced theory of Statistics" Vol. II, Charles Griffin, 2010.

CORE VIII

APPLIED STATISTICS

Semester : V

Hours :

Code :

Credits : 5

Objective : To give an exposure to the students as to how statistics can be applied for framing policies.

Unit I :

Times series-Introduction-Components of time series-Trend-Periodic changes-Irregular component-Analysis of time series-Uses of time series-Measurement of trend-Graphic method-Method of semi-averages-method of least squares- Method of moving average.

Unit II:

Measurement of seasonal variations-method of simple averages-Ratio to trend method-ratio to moving average method –Link relative method-Simple problems.

Unit III:

Index Numbers-Introduction-Problems involved in the construction of index numbers-criteria of a good index numbers-classification of index numbers-simple aggregate method –simple average of price relatives using A.M and G.M

Unit IV:

Weighted Aggregates Method-Laspeyre's Dorobish-Bowley ,Paasche's ,Marshall-Edgeworth and Fisher's ideal index numbers-simple problems.

Unit V:

Quality index numbers-value index numbers-Average of price relatives-chain indices-criteria of good index numbers-unit test-time reversal test-factor reversal test- circular test-simple problems.

Text books :

Gupta S.C. & Kapoor V.K.(2013)-Fundamentals of Applied Statistics , Sultan Chand & sons, New Delhi.

References :

Gupta S.P.(2014)- Statistical Methods ,Sultan Chand & sons, New Delhi.

CORE- IX

C-PROGRAMMING

Semester: V

Hours :

Code :

Credits :4

Objective : To introduce the C-language and programming skills for statistical concepts.

Unit I :

Introduction to C- character set-key words and identifiers –data types-constants and variables and their declarations –operations. Arithmetic operators, Relational operators, Logical operators, Assignment operators, Increment and Decrement operators, conditional operator, Bitwise operators – expressions-arithmetic expressions, evaluation of expressions, precedence of arithmetic operators.

Unit II:

Input & Output operations- reading a character, writing a character-formatted input-inputting integer numbers, inputting real numbers, inputting character strings-formatted output-output of integer numbers-printing of a single character and printing of strings.

Unit III:

Decision making and branching-decision making with IF statement, simple IF statement, IF-ELSE statement –Nesting of IF-ELSE statements, the ELSE-IF ladder, the switch statement , the ?, : operator, the GoTo statement.

Unit IV:

Decision making and looping- the WHILE statement, the Do statement, the FOR statement- Arrays-one-dimensional- two- dimensional arrays-declaring and initializing string variables, reading strings from terminal . writing strings to screen, arithmetic operators on characters, putting strings Together-comparison of two strings.

Unit v:

User –defined functions-introduction, elements of user –defined functions-return values and their types-function calls, function declaration, category of functions, arguments with return values. Nesting of functions, recursion, passing arrays to functions. structures and unions.

Text books:

1.E.Balagurusamy-Programming in ANSI-C

References:

1.Byrons Gottfried –Theory and practice of programming with C

CORE- XP

PRACTICAL –III-COMPUTER LAB FOR C

Semester: V

Hours :

Code :

Credits : 4

Objective : To implement the different statistical techniques using C-Programming.

List of Exercise :

1. Use of GETC, PUTC, GETS and PUTS statement.
2. Use of SCANF and PRINTE statements.
3. Calculation of Mean and Variance.
4. Squeezing a given character string (Elimination of all white characters).
5. Writing a character string in reverse order.
6. Computation of Correlation
7. Regression coefficients.
8. A problem involving recursion or palindrome.

MAJOR ELECTIVE-II

SAMPLING THEORY

Semester – V

Hours :

Code :

Credits : 5

Objective : To develop the knowledge about the sampling theory and its application.

Unit:-I Basic concepts of sample survey –Introduction-Fields of application of sampling techniques and limitations-Definitions and preliminaries – census and sample surveys, advantages and disadvantages –principles of sample theory-principal steps in a sample survey-probability and non-probability sampling-sampling unit –sampling frame-sampling and non-sampling errors.

Unit:-II Simple random sampling-procedures of selecting a random sample, estimation of population parameters, estimation of population proportion-estimation of sample size.

Unit:-III Stratified random sampling-introduction-principles of stratification- advantages of stratification-estimation of the population mean and its variance- estimation of variance-allocation of sample size in different strata. Equal allocation- Neyman allocation-optimum allocation and proportional allocation-relative precision of stratified random sampling with simple random sampling.

Unit:-IV Systematic random sampling- Introduction –simple selection procedures-advantages and disadvantages-estimation of mean and its sampling variance-comparison of simple random sampling and stratified random sampling with systematic sampling.

Unit:-V Ratio estimation- Introduction -definitions and notations-bias of ratio estimation-comparison of the ratio estimation with the mean per unit-Regression estimation –Introduction-difference estimators-comparison with the mean per unit and ratio estimators.

Book for Study:

1Theory and Analysis of Sampling Survey designs-Daroga Singh.F.S.Chandhary.

Unit:- I 1.1 to 1.11 Unit:-II 2.1 to 2.4 and 2.7 Unit:-III 3.1 to 3.8 Unit:-IV 4.1 to 4.6

Unit:-V 6.1 to 6.5 , 7.1 to 7.4

Book for Reference:

1.Sampling Techniques-W.G.Cochran, Wiley Eastern Ltd.

CORE-XI

STATISTICAL INFERENCE – II

Semester – IV

Hours :

Code :

Credits :5

Objective: To enable the students to frame suitable hypothesis for testing and drawing right inference to solve many social , economic and biological real life problems.

Unit-I:

Testing of Hypothesis - Statistical Hypothesis - Simple and composite hypothesis, Null and Alternative hypothesis - two kinds of errors, level of significance, size and power of a test, most powerful test, Neyman-Pearson lemma with proof.

Unit-II:

Simple examples using Neyman-Pearson lemma .Uniformly most powerful tests and unbiased tests based on normal Likelihood ratio test (without proof) and its properties. Application of LR test for single mean.

Unit-III:

Test of Significance for Large Samples Test of significance for mean(s), variance(s), proportion(s), correlation coefficient(s) based on Normal distribution.

Unit-IV:

Test of Significance for Small Samples Test of significance for mean(s), variance(s), correlation coefficient(s), regression coefficient, based on t, Chi-square and F-distributions. Applications of Chi-square in test of significance (independence of attributes, goodness of fit).

Unit-V:

Non-parametric Tests– Kolmogorov -Smirnov test, Sign test, Wald- Wolfowitz run test, run test for randomness, median test, Wilcoxon test and Wilcoxon – Mann-Whitney U test.

Textbook

1. Gupta, S.C. and Kapoor, V.K.: “Fundamentals of Mathematical Statistics”, Sultan & Chand & Sons, New Delhi, 11th Ed, 2002.

Reference Books

1. Kendall, M. and Stuart, A.: “The advanced theory of Statistics” Vol.II, Charles Griffin, 1961.
2. Rohatgi, V.K. : “Statistical Inference”, John Wiley and Sons, 2003.
3. Hogg, R.V, Craig. A.T. and Tannis: “Introduction to Mathematical Statistics”, Prentice Hall, England, 1995.
4. Dudewicz. E.J and Mishra.S.N.: “Modern Mathematical statistics”, John Wiley and Sons, 1988.

CORE XII

DESIGN OF EXPERIMENTS

Semester : VI

Hours :

Code :

Credits :5

Objectives :To focus on the design and analysis of variance techniques in field experiment.

UNIT I:

Design of experiment –Introduction-terminology-principles of experimental design-replication-randomization-local control -Analysis of variance –Introduction- One-way classification-mathematical analysis of the model-Two-way classification –mathematical analysis of model-experimental error.

UNIT II:

Completely Randomized Design (CRD)- Randomized Block Design(RBD)-Latin Square Design(LSD)-Estimation of Missing values in RBD and LSD (one and two missing values only).

UNIT III:

Factorial experiment- 2^2 design –Yates method of computing factorial effect totals-analysis of 2^2 and 2^3 experiments.

UNIT IV:

Confounding in Factorial Design-Confounding in 2^3 Experiment- Partial Confounding (Concept only).

UNIT V :

Balanced Incomplete Block Design (BIBD)-Parameters of BIBD-Incidence Matrix- Symmetrical BIBD-Parameters relations of BIBD-Inter Block Relationship BIBD .

Text books :

1.Gupta S.C. & V.K.Kapoor -Fundamentals of Applied Statistics – sultan Chand & sons, New Delhi.

Unit:I 5.1 to 5.4 Unit:II 6.1 to 6.7 Unit: III 6.8 to 6.8.3 ,Unit: IV 6.9 to 6.9.2 , Unit:V 6.10 to 6.10.3

Reference books:

1.Douglas C.Montgomery-Design and Analysis of Experiment, Wiley International Edition,India.

CORE XIII

STATISTICAL QUALITY CONTROL

Semester : VI

Hours :

Code :

Credits :5

Objectives :

- (i) To devise statistical techniques to separate the assignable causes from the chance causes.
- (ii) To ensure quality all along the arrival of materials through each of their processing to the final delivery of goods.

UNIT I:

Introduction to SQC – chance & assignable causes of variation – uses of SQC –process and product control-tools for SQC-control chart for variables-X bar and R-chart.

UNIT II:

Control chart for attributes-control chart for fraction defective(p-chart)-control chart for number of defective (d – chart)-control chart for number of defects per unit(c-chart)-natural tolerance limit-specifications limits.

UNIT III:

Acceptance sampling by attributes –Acceptance Quality Level(AQL)-Lot tolerance proportion or percent defective (LTPD)-Process average fraction defective (\bar{p})- Consumers risk (β)- Producers risk (α)-rectifying inspection plan-Average Outgoing Quality Limit (AOQL).

UNIT IV:

Operating characteristic curve(OC – curve) – average sample number (ASN) –average amount of total inspection (ATI)- single sampling plan-determination of n and c,AOQL,OC-curve-double sampling plan-ASN and ATI of double sampling plan-single sampling vs double sampling plan.

UNIT V :

Sequential sampling-sequential probability ratio test (SPRT)-ASN function of sequential sampling plan.

Text books :

Gupta S.C. & V.K.Kapoor -Fundamentals of Applied Statistics – Sultan Chand & Sons, New Delhi.

Reference books:

Mahajan.M- Statistical Quality Control, Dhanpat Rai & Co.,

CORE – XV P
PRACTICAL – SPSS

Semester : VI

Hours :

Code :

Credits : 4

Objective : T o expose the students to the analysis of statistical data using SPSS.

List of Topics :-

1. Diagrammatic & Graphical
2. Frequency Distribution Table
3. Measures of Central Tendency
4. Measures of Dispersion
5. Correlation
6. Regression
7. χ^2 , t, F- test
8. Non – parametric test.

CORE-PROJECT

Semester : VI

Hours : 3

Code :

Credits :3

GROUP PROJECT

Objective:

To enable the students to apply the statistical techniques for solving real-life problems.

A good project goes a long way in providing practical training to the students. They get an opportunity through the project to apply some of the vital theoretical concepts and techniques that had learnt in the previous Semesters.

On most of the occasions, socio-economic survey and market research surveys are periodically conducted by government agencies, NGO's and private organizations. So, it is proposed to offer good project topics to the students in these practical areas. The students will be thoroughly trained through the project not only in scientific selection of sample for data collection, but also in identifying and applying approximate statistical techniques in their projects.

The board evaluation strategy of the project will entitle the allocation of appropriate marks to the project report preparation and the remaining marks to the project viva-voce, as indicated below:

MARKS

- 1) Project report evaluation - 60 Marks
- 2) Project Viva - 40 Marks

MAJOR ELECTIVE-III
ACTUARIAL STATISTICS

Semester – VI

Hours :

Code :

Credits : 4

Objective : (i) To Impart basic concepts in Actuarial Studies,

(ii) To Prepare students to take up a career in Quantitative Aptitude.

Unit:-I Compound Interest-Effective rate of interest i -Nominal rate of interest $i(m)$ -Varying rate of interest –effective rate corresponding to a nominal rate and vice-versa present value-accumulated value-discounts-simple problems.

Unit:-II Annuities- immediate annuity- annuity- deferred annuity-accumulation and present values of annuities- increasing and decreasing annuities-simple problems.

Unit:-III Perpetuity- Immediate perpetuity – perpetuity due-deferred perpetuity-accumulation and present values of perpetuity- Increasing and decreasing perpetuity-simple problems.

Unit:-IV Problems on Numbers-Problems on Ages-Percentage

Unit:-V Profit & Loss-ratio & proportion –Time & Work-Time & Distance.

Book for Study:

1.Mathematical basis of life assurance-IC-81, Insurance Institute of India

Unit:- I –Page 1 to 16, Unit:-II & III – Page – 27 to 67

2.Quantitative Aptitude for Competitive Examinations- R.S. Aggarwal

Unit:- IV- Page 161- 181 , 182-194 , 208-250 , Unit:- V- Page 251-293 , 294-310 , 341-370 , 384-404

Book for Reference:

1.Donald, DWA- Compound Interest & Annuities Certain- Heinemann – London.

MAJOR ELECTIVE-I

VITAL STATISTICS

Semester – III

Hours :

Code :

Credits :

Objective : To equip the students with the knowledge of application of Vital Statistics

Unit:-I

Introduction-Uses of Vital Statistics-Methods of Obtaining Vital Statistics- Measures of Population-Rates and Ratios of Vital Statistics.

Unit:-II

Measures of Morality-Crude death Rate-Specific Death Rates-Infant Mortality Rate-Standardised Death Rates.

Unit:-III

Mortality Table-Stationary Population-Stable Population- Central Mortality Rate-Force of Mortality –Assumptions, descriptions and Construction of Life table.

Unit:-IV

Fertility-Crude Birth Rate-General Fertility Rate-Specific Fertility Rate-Total Fertility rate.

Unit:-V

Measurement of Population Growth-Pearl's Vital Index-Gross Reproduction Rate-Net Reproduction Rate.

Book for Study:

1.For Unit I & V- Fundamentals of Applied Statistics-S.C.Gupta and V.K.Kapoor-Sultan Chand & Sons.

Book for Reference:

1. An introduction to health science statistics- [Stephen McKenzie](#) -new Australian publication.

MAJOR ELECTIVE-II

ECONOMETRICS

Semester –

Hours :

Code :

Credits :

Objective : To equip the students with the knowledge of application of statistics in Economics.

Unit:-I Econometrics-definition and scope-introduction-origin-objectives-characteristics and scope of econometrics-Basic concepts of econometrics-limitations.

Unit:-II Methodology –Tools and models, tools and methods of study, Raw materials of econometrics, economic and econometrics models-Time series and cross-section models-Physical and social science model.

Unit:-III Functions and diagrams in economic theory –Demand functions and curves-total revenue function and curves-cost functions curves-other functions and curves in economic theory.

Unit:-IV Demand and Supply –law of supply and demand-price elasticity of demand-significance of elasticity of demand-demand function with constant price elasticity-partial elasticities of demand (Income elasticity, Cross elasticity)

Unit:-V Methods of estimating demand function- Leontif's method (From time series data)- Pigous's method(from time series data & from family budget data)-Engel's law & Engel's curve- Pareto's law income distribution.

Book for Study:

1. For Unit I & II- Economics and Mathematical Economics-Singh, Parashav & Singh.
2. For Unit III- Mathematical Analysis for Economics – Allen, R.G.D- Macmillan, New Delhi
3. For Unit IV & V- Fundamentals of Mathematical Statistics-S.P.Gupta and V.K.Kapoor.

Book for Reference:

1. Mathematical Economics-A.C.Chiang- Macmillan, New Delhi

MAJOR ELECTIVE-III
ACTUARIAL STATISTICS

Semester –

Hours :

Code :

Credits :

Objective : (i) To Impart basic concepts in Actuarial Studies,
(ii) To Prepare students to take up a career in Quantitative Aptitude.

Unit:-I Compound Interest-Effective rate of interest i -Nominal rate of interest $i(m)$ -Varying rate of interest –effective rate corresponding to a nominal rate and vice-versa present value-accumulated value-discounts-simple problems.

Unit:-II Annuities- immediate annuity- annuity- deferred annuity-accumulation and present values of annuities- increasing and decreasing annuities-simple problems.

Unit:-III Perpetuity- Immediate perpetuity – perpetuity due-deferred perpetuity-accumulation and present values of perpetuity- Increasing and decreasing perpetuity-simple problems.

Unit:-IV Problems on Numbers-Problems on Ages-Percentage

Unit:-V Profit & Loss-ratio & proportion –Time & Work-Time & Distance.

Book for Study:

1.Mathematical basis of life assurance-IC-81, Insurance Institute of India

Unit:- I –Page 1 to16, Unit:-II & III – Page – 27 to 67

2.Quantitative Aptitude for Competitive Examinations- R.S. Aggarwal

Unit:- IV- Page 161- 181 , 182-194 , 208-250 , Unit:- V- Page 251-293 , 294-310 , 341-370 , 384-404

Book for Reference:

1.Donald, DWA- Compound Interest & Annuities Certain- Heinemann – London.

MAJOR ELECTIVE-IV

SAMPLING TECHNIQUES

Semester –

Hours :

Code :

Credits :

Objective : To develop the knowledge about the sampling theory and its application.

Unit:-I Basic concepts of sample survey –Introduction-Fields of application of sampling techniques and limitations-Definitions and preliminaries – census and sample surveys, advantages and disadvantages –principles of sample theory-principal steps in a sample survey-probability and non-probability sampling-sampling unit –sampling frame-sampling and non-sampling errors.

Unit:-II Simple random sampling-procedures of selecting a random sample, estimation of population parameters, estimation of population proportion-estimation of sample size.

Unit:-III Stratified random sampling-introduction-principles of stratification- advantages of stratification-estimation of the population mean and its variance- estimation of variance-allocation of sample size in different strata. Equal allocation- Neyman allocation-optimum allocation and proportional allocation-relative precision of stratified random sampling with simple random sampling.

Unit:-IV Systematic random sampling- Introduction –simple selection procedures-advantages and disadvantages-estimation of mean and its sampling variance-comparison of simple random sampling and stratified random sampling with systematic sampling.

Unit:-V Ratio estimation- Introduction -definitions and notations-bias of ratio estimation-comparison of the ratio estimation with the mean per unit-Regression estimation –Introduction-difference estimators-comparison with the mean per unit and ratio estimators.

Book for Study:

1Theory and Analysis of Sampling Survey designs-Daroga Singh.F.S.Chandhary.

Unit:- I 1.1 to 1.11 Unit:-II 2.1 to 2.4 and 2.7 Unit:-III 3.1 to 3.8 Unit:-IV 4.1 to 4.6

Unit:-V 6.1 to 6.5 , 7.1 to 7.4

Book for Reference:

1.Sampling Techniques-W.G.Cochran, Wiley Eastern Ltd.

MAJOR ELECTIVE-V
STATISTICAL DECISION THEORY

Semester –

Hours :

Code :

Credits :

Objective : To enable the students to decide on choosing the best course of action out of several alternatives.

Unit:-I Meaning, Scope and elements of decision making problems-meaning of pay off-payoff table and opportunity loss or regret table.

Unit:-II Types of decision making situations-under certainty-under uncertainty-under condition of risk and under perfect information-problems.

Unit:-III Expected monetary value-Expected opportunity loss-expected value of perfect information-working rule and problems.

Unit:-IV Bayesian decision theory- Baye's theorem of inverse probability and simple problems.

Unit:-V Decision tree analysis-steps and advantages and limitations of decision theory.

Book for Study:

1.M.Mahajan-Statistical Quality Control-Dhanpat Rai& co.

Book for Reference:

1.T.Veerarajan-Probability Statistics and Random Processes- Tata McGraw Hill-New Delhi.

MAJOR ELECTIVE-VI

BIO-STATISTICS AND SURVIVAL ANALYSIS

Semester –

Hours :

Code :

Credits :

Objective : To Introduce the applications of Bio-Statistics to the students.

Unit:-I Introduction to study designs-different types of observational studies-experimental studies-Epidemiology-odds-odds ratio-confidence interval for odds ratio-relative risk.

Unit:-II Chi-square test:-Diagnostic procedure with threshold model. Measuring the accuracy of diagnosis- sensitivity, specificity, Roc curve.

Unit:-III Clinical trials-Introduction-different phases of clinical trials-purpose- duration cost-drug regulatory bodies. .

Unit:-IV Survival time, survival distributions-Hazard function-exponential –gamma type I and type II censoring, progressive censoring-estimation of parameters with numerical examples.

Unit:-V Estimating survival function and variance using Kaplan Meier method – comparison of survival distribution-log rank test for comparing 2-groups.

Book for Study:

- 1.Dawson,Beth & Rebert,G-Basic & Clinical Bio-Statistics.
- 2.Ellise T.Lee-Statistical Methods for survival Data Analysis,.

Book for Reference:

- 1.David G.Kleinbawn-Survival Analysis.



BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI- 620 024
ENVIRONMENTAL STUDIES – U19ES

(Applicable to the candidates admitted from the Academic year 2019-20 onwards)

- Unit: 1** The Multidisciplinary nature of environmental studies
Definition, scope and importance. (2 lectures)
Need for public awareness
- Unit: 2** Natural Resources:
Renewable and non-renewable resources:
Natural resources and associated problems.
- a) Forest resources: use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
 - b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems.
 - c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
 - d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
 - e) Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.
 - f) Land resources: Land as a resources, land degradation, man induced Landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.
 - Equitable use of resources for sustainable lifestyles.
- (8 lectures)

Unit: 3 Ecosystems

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession.
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristic features, structure and function of the following ecosystem:-

- a. Forest ecosystem
- b. Grassland ecosystem
- c. Desert ecosystem
- d. Aquatic ecosystems, (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

Unit: 4 Biodiversity and its conservation

- Introduction – Definition : Genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values
- Biodiversity at global, National and local levels
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.
- Biological Diversity Act 2002/ BD Rules, 2004

(8 lectures)

Unit: 5 Environmental Pollution

Definition

Causes, effects and control measures of :

- a. Air Pollution
 - b. Water Pollution
 - c. Soil Pollution
 - d. Marine Pollution
 - e. Noise pollution
 - f. Thermal Pollution
 - g. Nuclear hazards
- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
 - Role of an individual in prevention of pollution
 - Pollution case studies
 - Disaster management: floods, earthquake, cyclone and landslides.
 - Ill-Effects of Fireworks: Firework and Celebrations, Health Hazards, Types of Fire, Firework and Safety

(8 lectures)

Unit: 6 Social Issues and the Environment

- From Unsustainable to Sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people; its problems and concerns.

Case studies

- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act.
- Forest Conservation Act.
- Issues involved in enforcement of environmental legislation
- Public awareness.

(7 lectures)

Unit: 7 Human Population and the Environment

- Population growth, variation among nations.
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights - Value Education
- HIV/ AIDS - Women and Child Welfare
- Role of Information Technology in Environment and human health
- Case studies.

Unit: 8 Field Work

- Visit to a local area to document environmental assets-river / forest/ grassland/ hill / mountain

References:

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Public Ltd Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt Ltd, Ahamedabad – 380013, India, E-mail: mapin@icenet.net(R)
3. Brunner R.C. 1989, Hazardous Waste Incineration, McGraw Hill Inc 480 p
4. Clark R.S. Marine Pollution, Clanderson Press Oxford (TB)
5. Cunningham, W.P.Cooper, T.H.Gorhani E & Hepworth, M.T. 2001.
6. De A.K. Environmental Chemistry, Wiley Eastern Ltd
7. Down to Earth, Centre for Science and Environment (R)
8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute Oxford University, Press 473p.
9. Hawkins, R.E. Encyclopedia of India Natural History, Bombay Natural History Society, Bombay (R)
10. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press 1140 p.
11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws Himalaya Pub. House, Delhi 284 p.
12. Mckinney, M.L. & Schoch R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition 639 p.
13. Mhaskar A.K. Matter Hazardous, Techno-Science Publications (TB)
14. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
15. Odum, E.P. 1971 Fundamentals of Ecology. W.B. Saunders Co. USA. 574 p
16. Rao MN & Datta, A.K. 1987 Waste Water treatment, Oxford & IBH Publication Co. Pvt Ltd 345 p.
17. Sharma B.K. 2001 Environmental chemistry Goel Publ House, Meerut.
18. Survey of the Environment, The Hindu (M).
19. Townsend C. Harper, J and Michael Begon, Essentials of Ecology, Blackwell science (TB)
20. Trivedi R.K. Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol. I and II, Enviro Media (R).
21. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science Publications (TB).
22. Wagner K.D. 1998 Environmental Management. W.B. Saunders Co. Philadelphia USA 499 p
(M) Magazine (R) Reference (TB) Textbook
23. <http://nbaindia.org/uploaded/Biodiversityindia/Legal/33%20Biological%20Diversity%20Rules,%202004.pdf>.

SEMESTER – II

COURSE CODE: U19SBE1

HOURS: 2

CREDITS: 2

OFFICE AUTOMATION

UNIT I:

MS- Word- Introduction to Computers - Hardware - Software, Operating System: Windows XP -MS-Paint, Notepad, WordPad, Introduction to MS-Word, Creating, Editing and Formatting Document - Working with Drawing objects - Text Manipulation

UNIT II:

Working with Tables – Columns – Labels - Plotting, editing and Filling drawing objects - Bookmark – Header & Footer - Checking and Correcting a document - Creating Labels – Envelops – Mail Merge – Formatted output and Report generation Printing Documents, Working with Internet.

UNIT III:

Ms – Excel - Ms – Excel: Introduction – Data Entry – Cell Formatting - Plotting Graphs – Workbook Features – Library Functions

UNIT IV:

Conditional Functions and Data Sorting – Limit the data on a worksheet - Data Validation –Data consolidation - Chart creation - Checking and Correcting Data - Tracking and Managing Changes- Advanced Features

UNIT V:

MS – PowerPoint- Introduction - Creating, Editing and Formatting Presentation – Applying Transition and Animation Effects - Applying Design Templates - Viewing and Setting up a Slide Show - Navigating among Different Views - Ms Outlook: Introduction to Folder List – Address Book.

TEXTBOOKS

1. Jill Murphy, Microsoft Office Word- Comprehensive Course, Labyrinth Publications, 2003.
2. McGraw-Hill/Irwin-Deborah Hinkle, Microsoft Office 2003 PowerPoint: A Professional Approach, Comprehensive w/ Student CD, New Delhi, 2003.
3. Nellai Kannan, C., MS-Office, Nels Publications, Tamil Nadu, 2002.

SEMESTER – III

COURSE CODE: U19SBE2

HOURS: 2

CREDITS: 2

DESKTOP PUBLISHING

UNIT I:

Photoshop Tools : Move, Type, Marquee, Lasso, Crop, Shapes, Healing, Brush, Patch, Cloning Stamp, Eraser, Gradient, Blur, Smudge, Dodge, Pen, Eye Dropper, Patch selection and Zoom tool.

Layer: New layer, Layer set, Duplicate layer, Rasterize and Merge down

Layer Styles: Drop shadow, inner shadow, outer glow & inner glow, Bevel and Emboss, Gradient overlay, Stroke. Text formatting

UNIT II:

File: Save, File formats, Page set up.

Edit: Check spelling, Copy merged, Fill, Transform, Define pattern.

Image: Motion blur, Twirl, lens flare, Glowing edges, lighting effects, solarize, water paper, Stained glass, Mosaic Tiles.

Window: Character and Paragraph settings.

COREL DRAW:

UNIT III:

Drawing Tools: Pick, Shape, Knife, eraser, Smudge, Roughen brush, free transform, Zoom ,hand, Free hand, Bezier, Artistic, Pen, Poly line, Point, Interactive connective, Spiral tool.

Colour Tool: Paint Bucket Tool, Eye Dropper, Fill Tools. Fill Options, Stroke Options.

UNIT IV:

Special Effects: 3D effects, Add perspective, Blend, Contour, Artistic media, lens, and Power clip.

Shaping Options: Weld, trim, Intersect.

Text Effects: Format text, bullet, and fit text to path, align and straighten, spell check.

File Menu: Save, Save as, Import, Page set Up.

PAGE MAKER:

UNIT V:

Page Maker Tools: Pointer, Rotate, Line, Rectangle, Ellipse, Polygon, Hand, Text, Crop, Rectangle frame tools. Text layout, Style and Objects: Alignments, Styles, fill, frame options, Stroke, Group, Lock, unlock, mask, polygon settings character and paragraph settings.

Text Editing: Edit story: Undo, Redo, Cut, Copy, Paste, paste Special, Spelling check and Find.

File: Page set up, save, Save as.

TEXTBOOKS

1. CorelDraw IN Simple Steps – Shalini Gupta Corel DRAW Bible - DEBORAH MILLER
2. Teach Yourself Adobe Photoshop – Rose Carla Adobe Photoshop Cs Classroom in a Book by Adobe Press.
3. Using Microsoft Word - Asmita Bhatt Pagemaker In Easy Steps - Scott Basham Ctoa Material By Genesis.

SEMESTER – III

COURSE CODE: U19SBE3P

HOURS: 2

CREDITS: 2

OFFICE AUTOMATION & DESKTOP PUBLISHING LAB

UNIT I:

Office Automation

1. MS – Word: Text Formatting, Mail Merge
2. Ms – Excel: Implement the Statistical & Mathematical Function
(Using Min ,Max, Median, Average, Standard Deviation, Correlation, Logical ‘if’ Condition) for the given data.

Prepare a Chart for a given Data using Pie diagram / Histogram

UNIT II:

Photoshop

3. Design a College Brochure / Birthday Card.
4. Cropping, rotating and Overlapping the image.
5. Create a single image from Multiple image.
6. Creating an image with multilayer’s.

UNIT III:

Corel Draw

7. Design a Visiting Card \ Greeting Card using Draw & Text tools.
8. Create a logo for a Company \ College.

UNIT IV:

Page Maker

9. Type and format a letter using text tool.
10. Prepare a Invitation for College Day /Sports Day.

PART – IV: VALUE EDUCATION - U19VE

HOURS: 2

CREDITS: 2

Learning Objectives

This subject deals with the

- Philosophy of life
- Individual qualities
- social values
- Mind culture
- Personal health.

UNIT I:

PHILOSOPHY OF LIFE Human Life on Earth (Kural 629), Purpose of Life (Kural 46) Meaning and Philosophy of Life(Kural 131, 226) The Law of Nature (Kural 374) Glorifying All form of Life in this Universe (Kural 322, 327) – Protecting Nature /Universe (Kural 16, 20, 1038)

UNIT II:

INDIVIDUAL QUALITIES Basic Culture (Kural 72, 431) Thought Analysis (Kural 282, 467, 666) Regulating desire (Kural 367), Guarding against anger (Kural 158, 305, 306, 314), To get rid of Anxiety (Kural 629), The Rewards of Blessing (Kural 3), Benevolence of Friendship (Kural 786), Love and Charity (Kural 76), Self – tranquility/Peace (Kural 318)

UNIT III:

SOCIAL VALUES (INDIVIDUAL AND SOCIAL WELFARE) Family (Kural 45), Peace in Family (Kural 1025), Society (Kural 446), The Law of Life (Kural 952), Brotherhood (Kural 807) , The Pride of Womanhood (Kural 56) Five responsibilities/duties of Man : a) to himself, b) to his family, c) to his environment, d) to his society, e) to the Universe in his lives (Kural 43, 981), Thriftiness (Thrift)/Economics (Kural 754), Health (Kural 298), Education (Kural 400), Governance (Kural 691), People’s responsibility/ duties of the community (Kural 37), World peace (Kural 572)

UNIT IV:

MIND CULTURE Mind Culture (Kural 457) Life and Mind - Bio - magnetism, Universal Magnetism (God – Realization and Self Realization) - Genetic Centre – Thought Action – Short term Memory – Expansiveness – Thought – Waves, Channelising the Mind, Stages - Meditation (Kural 261, 266, 270), Spiritual Value (Kural 423)

UNIT V:

TENDING PERSONAL HEALTH Structure of the body, the three forces of the body, life body relation, natural causes and unnatural causes for diseases (Kural 941), Methods in Curing diseases (Kural 948, 949) The Five units, simple physical exercises.

LEARNING OUTCOMES:

On successful completion of the course, the students should have acquired knowledge over

- Philosophy of life
- Individual qualities
- social values
- Mind culture
- Personal health

TEXTBOOKS

1. Philosophy of Universal Magnetism (Bio-magnetism, Universal Magnetism) The World Community Service Centre Vethatri Publications (for Unit IV)
2. Pope, G.U., Dr. Rev., Thirukkural with English Translation, Uma Publication, 156, Serfoji Nagar, Medical College Road, Thanjavur 613004 (for All Units)
3. Value Education for Health, Happiness and Harmony, The World Community Service Centre Vethatri Publications (for All Units)

PART – IV: SOFT SKILLS - U19SS

HOURS: 2

CREDITS: 2

Learning Objectives

This subject deals with knowledge of understanding

- Interpersonal skills
- Communicative skills
- Corporate skills
- Resume Writing.

LEARNING OUTCOMES:

On successful completion of the course, the students should have acquired knowledge over

- Interpersonal skills
- Communicative skills
- Corporate skills
- Resume Writing.

UNIT I:

Know Thyself / Understanding Self Introduction to soft skills self discovery – Developing positive attitude – Improving perceptions – Forming values.

UNIT II:

Interpersonal Skills/ Understanding Others Developing interpersonal relationship –Team building – group dynamics –Net working- Improved work relationship

UNIT III:

Communication Skills/ Communication with others Art of Listening –Art of reading –Art of speaking – Art of writing –Art of writing emails-e mail etiquette

UNIT IV:

Corporate Skills/ Working with Others Developing body language –Practising etiquette and mannerism – Time management – Stress management.

UNIT V:

Selling Self/ Job Hunting Writing resume /cv-interview skills – Group discussion –Mock interview Mock GD –Goal setting –Career planning

TEXT BOOKS

1. Meena. K and V.Ayothi (2013) A Book on Development of Soft Skills (Soft Skills: A Road Map to Success) P.R. Publishers & Distributors, No, B-20 &21, V.M.M Complex, Chatiram Bus Stand, Tiruchirapalli -620 002. (Phone No: 0431-2702824: Mobile No: 94433 70597, 98430 7442) Alex K. (2012)
2. Soft Skills – Know Yourself & Know the World, S.Chand & Company LTD, Ram Nagar, New Delhi - 110 055. Mobile No: 94425 14814(Dr.K.Alex)

REFERENCE BOOKS

1. Developing the leader within you John C Maxwell
2. Good to Great by Jim Collins
3. The Seven habits of highly effective people Stephen Covey
4. Emotional Intelligence Daniel Goleman
5. You can Win Shive Khara

Principle centred leadership Stephen Covey

PART – V: GENDER STUDIES**HOURS: 1****CREDITS: 1****Learning Objectives**

This subject deals with

- Concept of gender,
- Women's Studies vs Gender Studies,
- Areas of Gender Discrimination,
- Women development and Gender Empowerment

LEARNING OUTCOMES:

On successful completion of the course, the students should have acquired knowledge over

- Concept of gender Women's Studies vs Gender Studies Areas of Gender Discrimination
- Women development and Gender Empowerment

UNIT I:

Concepts of Gender: Sex-Gender-Biological Determinism- Patriarchy- Feminism -Gender Discrimination -Gender Division of Labour -Gender Stereotyping-Gender Sensitivity - Gender Equity — Equality-Gender Mainstreaming Empowerment

UNIT II:

Women's Studies Vs Gender Studies: UGC's Guidelines - VII to XI Plans- Gender Studies: Beijing Conference and CEDAW-Exclusiveness and Inclusiveness.

UNIT III:

Areas of Gender Discrimination: Family Sex Ratio-Literacy -Health -Governance Religion Work Vs Employment- Market - Media - Politics Law Domestic Violence — Sexual Harassment — State Policies and Planning

UNIT IV:

Women Development and Gender Empowerment: Initiatives International Women's Decade - International Women's Year - National Policy for Empowerment of Women - Women Empowerment Year 2001- Mainstreaming Global Policies.

UNIT V:

Women's Movements and Safeguarding Mechanism:— In India National / State Commission for Women (NCW) - All Women Police Station Family Court- Domestic Violence Act - Prevention of Sexual Harassment at Work Place Supreme Court Guidelines - Maternity Benefit Act - PNDT Act - Hindu Succession Act 2003 Eve Teasing Prevention Act - Self Help Groups 73 and 74 Amendment for PRIS.

TEXTBOOKS

1. Bhasin Kamala, Understanding Gender: Gender Basics, New Delhi: Women Unlimited 2004
2. Bhasin Kamala, Exploring Masculinity: Gender Basics, New Delhi: Women Unlimited, 2004
3. Bhasin Kamala, What is Patriarchy? : Gender Basics, New Delhi: Women Unlimited, 1993
4. Pernau Margrit Ahmad Imtiaz, Reifeld Hermut (ed.,) Family and Gender: Changing Values in Germany and India, New Delhi: Sage Publications, 2003
5. Agarwal Bina, Humphries Jane and Robeyns Ingrid (ed.,)

6. Capabilities, Freedom, and Equality: Amartya Sen's Work from a Gender Perspective, New Delhi: Oxford University Press, 2006
7. Rajadurai.S.V, Geetha.V, Themes in Caste Gender and Religion, Tiruchirappalli: Bharathidasan University, 2007 Misra Geetanjali, Chandiramani Radhika (ed.,)
8. Sexuality, Gender and Rights: Exploring Theory and Practice in South and Southeast Asia, New Delhi: Sage Publication, 2005 Rao Anupama (ed.,)
9. Gender &Caste: Issues in Contemporary Indian Feminism, New Delhi: Kali for Women, 2003
10. Saha Chandana, Gender Equity and Gender Equality: Study of Girl Child in Rajasthan, Jaipur: Rawat Publications, 2003
11. Krishna Sumi,(ed.,) Livelihood and Gender Equity in Community Resource Management New Delhi: Sage Publication, 2004
12. Wharton .S Amy, The Sociology of Gender: An Introduction to Theory and Research, USA: Blackwell Publishing, 2005.
13. Mohanty Manoranjan (ed.,) Class, Caste, Gender: Readings in Indian Government and Politics- 5, New Delhi: Sage Publications, 2004.
14. Arya Sadhna, Women, Gender Equality and the State, New Delhi: Deep & Deep Publications, 2000.