

**NATIONAL COLLEGE (AUTONOMOUS)**

**Nationally Accredited at “A+” Level by NAAC**

**Tiruchirapalli – 620 001**

**Under Graduate Programme Structure under CBCS**

**(For candidates admitted from the year 2019 – 2022 onwards)**

**Bachelor of Computer Applications**

**PROGRAMME OUTCOMES**

Upon graduation, students will be able to

- Exhibit understanding of broad business concepts and principles.
- To identify and define problems and opportunities.
- Demonstrate the ability to identify a business problem, isolate its key components, analyze and assess the salient issues, set appropriate criteria for decision making, and draw appropriate conclusions and implications for proposed solutions.
- Demonstrate the capabilities required to apply cross-functional business knowledge and technologies in solving real-world business problems.
- Demonstrate use of appropriate techniques to effectively manage business challenges.
- Capable of recognizing and resolving ethical issues.
- Effectively communicate business issues, management concepts, plans and decisions both in oral and written form using appropriate supportive technologies.
- Develop various real time applications using latest technologies and programming languages.
- Possess strong foundation for their higher studies.
- Blend analytical, logical and managerial skills with the technical aspects to resolve real world issues.
- Become employable in various IT companies and government jobs.

**PROGRAMME SPECIFIC OUTCOMES**

BCA programme has been designed to prepare graduates for attaining the following specific outcomes

- An ability to apply knowledge of mathematics, computer science and management in practice.
- An ability to enhance not only comprehensive understanding of the theory but its application too in diverse field.
- The program prepares the young professional for a range of computer applications, computer organization, techniques of computer networking, software engineering-Commerce, Web Designing, Big Data, IOT, Python and Advance JAVA.
- An ability to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams with positive attitude.
- An ability to communicate effectively.
- In order to enhance programming skills of the young IT professionals, the program has introduced the concept of project development in each language/technology learnt during semester.

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SEM	PART	Course Title	Instr u. Hours / Week	Credit	Marks		Total
					Int 25	Ext 75	
I year I sem	I	Tamil – I / Hindi – I / Sanskrit – I U19T1, U19H1, U19S1	6	3	25	75	100
	II	English - I U19E1	6	3	25	75	100
	III	<b>U19CA1 – Programming in C</b>	5	4	25	75	100
		<b>U19CA2P -Programming in C Lab</b>	3	4	25	75	100
		U19 AMS1C – Allied Mathematics – I	5	3	25	75	100
	IV	U19 AMS2C – Allied Mathematics – II	3	--	--	--	-
U19ES – Environmental Studies		2	2	25	75	100	
I year II sem	I	<b>Paper : 7</b>	<b>30</b>	<b>19</b>			<b>600</b>
		Tamil – II / Hindi – II / Sanskrit – II U19T2, U19H2, U19S2	6	3	25	75	100
	II	English - II U19E2	4	2	25	75	100
		Communicative English - I U19CE1	2	1	25	75	100
	III	<b>U19CA3 – Programming in C++</b>	5	3	25	75	100
		<b>U19CA4P – Programming in C++ Lab</b>	3	5	25	75	100
		U19AMS2C – Allied Mathematics – II	3	3	25	75	100
	IV	U19 AMS3C – Allied Mathematics – III	5	3	25	75	100
		<b>U19SBE1C – Skill Based Elective I – Web page designing using HTML</b>	2	2	25	75	100
	II year III sem	I	<b>Paper : 8</b>	<b>30</b>	<b>22</b>		
Tamil – III / Hindi – III / Sanskrit – III U19T3, U19H3, U19S3			6	3	25	75	100
II		English - III U19E3	6	3	25	75	100
		<b>U19CA5 – Data Structure and Algorithm</b>	6	4	25	75	100
III		<b>U19CA6P- Data Structure and Algorithm using C++ Lab</b>	3	3	25	75	100
		U19ACO1C – Financial Accounting	5	3	25	75	100
IV	<b>U19SBE2C - Skill Based Elective II – Java Script &amp; PHP</b>	2	2	25	75	100	

		<b>U19SBE3CP – HTML, Java Script and PHP Lab</b>	2	2	25	75	100
<b>II year</b>  <b>IV sem</b>	I	<b>Paper : 7</b>	<b>30</b>	<b>20</b>			<b>700</b>
		Tamil – IV / Hindi – IV / Sanskrit – IV U19T4, U19H4, U19S4	6	3	25	75	100
	II	English - IV U19E4	4	2	25	75	100
		Communicative English - II U19CE2	2	1	25	75	100
	III	<b>U19CA7 – Database System</b>	4	4	25	75	100
		<b>U19CA8P – ORACLE Lab</b>	2	3	25	75	100
		U19ACO2CTP – Accounting Package (Theory (45)& Lab(30))	4	3	25 (15+10 )	75 (45+30 )	100
		<b>U19ACO3C–Organization Behavior/Marketing/Advertisement Management</b>	4	3	25	75	100
		<b>U19NMEN1 – Basic Concepts of Computer Science</b>	2	2	25	75	100
	IV	U19VE – Value Education	2	2	25	75	100
		<i>Extra Credit Course I :Animation Lab,Flash and Photoshop</i>	-	4*	25	75	100*
	<i>Extra Credit Course II : Multimedia Technology.</i>	-	4*	25	75	100*	
<b>III year</b>  <b>V Sem</b>	III	<b>Paper : 9</b>	<b>30</b>	<b>23</b>			<b>900</b>
		<b>U19CA9 – Java Programming</b>	5	3	25	75	100
		<b>U19CA10P – Java Programming Lab</b>	5	3	25	75	100
		<b>U19CA11E - Software Engineering/ Software Analysis and Design/ Software Testing</b>	5	5	25	75	100
		<b>U19CA12E – Computer Graphics/ Principles of Animation/ Visual Effects</b>	5	5	25	75	100
		<b>U19CA13 – Data Mining Concepts</b>	6	6	25	75	100
	IV	<b>U19NMEN2-Internet and its Applications</b>	2	2	25	75	100
		U19SS– Soft Skill	2	2	25	75	100
		<i>Extra Credit Course III: BPO (Business Processing Outsource).</i>	-	4*	25	75	100*
		<b>Paper : 7</b>	<b>30</b>	<b>26</b>			<b>700</b>
<b>III year</b>  <b>VI</b>	III	<b>U19CA14 – Operating System</b>	6	6	25	75	100
		<b>U19CA15 – Python Programming</b>	6	6	25	75	100
		<b>U19CA16P – Python Programming Lab</b>	6	4	25	75	100
		<b>U19CA17E - E-Commerce/ Internet of Things/ Big Data Analytics</b>	6	6	25	75	100
		<b>U19CA18 – Computer Networks/ Mobile Computing/ Network</b>	5	6	25	75	100

<b>Sem</b>	V	<b>Security</b>					
		U19GS – Gender Studies	1	1	25	75	100
		Extension Activity		1	25	75	100
		<i>Extra Credit Course IV: Cloud Computing.</i>	-	4*	25	75	100*
		<b>Paper : 6</b>	<b>30</b>	<b>30</b>			<b>600</b>
		<b>GRAND TOTAL</b>	<b>180</b>	<b>140</b>	-	-	<b>4300</b>

**\*Extra Credits are not included in Grand Total.**

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.  
சுந்தரர் - 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  
காசீம் 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 மஞ்சை அறையின் முட்டை - கபிலர் - குறிஞ்சி
4. வினையே ஆடவர்க்குயிரே வானுதல் - பாலை பாடிய பெருங்கடுங்கோ - பாலை
5. ஆர்கலி ஏற்றொடு கார்தலை மணந்த - ஒக்கூர் 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 செவ்வ 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 - கோவூர்க்கிழார்
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.

## ENGLISH FOR COMMUNICATION – U19E1

**Semester: I**

**English Language Course I**

**Instruction Hours/Week: 6**

**Credit: 3**

### **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

**ENGLISH THROUGH EXTENSIVE READING – U19E2**

**SEMESTER : II**

**ENGLISH LANGUAGE COURSE : II**

**INSTRUCTION HOURS/WEEK : 4**

**CREDIT : 2**

**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.

**READING POETRY AND DRAMA – U19E4**

**SEMESTER : IV**

**ENGLISH LANGUAGE COURSE : IV**

**INSTRUCTION HOURS/WEEK : 6**

**CREDIT : 2**

**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**

**U19H1 : 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 – 1 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 geners 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 kovoon - 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 ( Bhisma 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, व्यञ्जननि, संयुक्ताक्षराणि, लेखनप्रकारः च
- ४। अकारन्त-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, बहवचनं च
- ३। क्रियापदानि - गम् (गच्छ), 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 (भव्) अस्, धाव् , कृ (कर्) अस्, धाव्,

पत्, आ-गम् (गच्छ्)।

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 (0 त। १०  
पर्यन्तम्।

१। तद् शब्दः - पुल्लिङ्ग-स्त्रीलिङ्ग-  
नपुंसकलिङ्गाः

२। अस्मद् - युष्मद् शब्दौ।

३। एतद् शब्दः - त्रिषु लिङ्गेषु

१। गम् (गच्छ्), पठ्, वद, पत्, लिख्, क्रीड्,  
आ-गम्(गच्छ्), भू (भव्), धाव्, पा(पिब्),  
दृश्(पश्य्), 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 ।
2. क्रियापदानि (लट् लकारे)
3. कृषि-संबन्धीनि पदानि
4. आकारान्त-स्त्रीलिङ्गः
  - 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
5. सन्धिः (स्वरः)

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

(Omitted portions: Lesson 1: 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

गतषाणंमासे 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



## 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 - पुंनपुंस्त्रीषु।
- 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. Anqala-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 स्त्रीलिङ्गेषु
- 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, चित्तूर, आन्ध्रप्रदेशः ५१७५०१।

***COURSE OBJECTIVES***

- The course is designed to provide an extensive study of the C programming language.
- This course is emphasized the strengths of C which provides students to write a program efficiently.
- This course is offered to design the wide variety of examples and applications in C language.
- This course is underlined to learn some other programming languages and how to choose the particular programming language for solving the problem.

***COURSE OUTCOME***

Upon successful completion of this course, students will be able to

CO1: Understand the fundamentals in C programming.

CO2: Develop knowledge to write, compile and debug C program.

CO3: Explain identifiers, operators, type conversion and other features of C language.

CO4: Understand different data types in C language.

CO5: Demonstrate the control statements like decision making and looping.

CO6: Illustrate the concepts of functions, arrays and strings.

CO7: Understand the concept of pointers and Structures.

CO8: Use different data file structures and unions.

CO9: Study the complexity of problems, modularize the problems into small modules and then convert them into programs.

**UNIT – I**

History of C – Importance of C – Basic structure of C Program – Data types – Declaration of variables – Declaration of storage class - Operators and Expressions – Built –in Functions.

**UNIT – II**

Managing Input and Output operations – Decision making and branching (IF, IF-ELSE, ELSE – IF Ladder, SWITCH, GOTO) - Decision making and looping (WHILE, DO – WHILE, FOR, BREAK and CONTINUE).

**UNIT – III**

User-defined Functions: Introduction, Elements of User-defined Functions – Definition of functions – Return values and their types – Function call – Function declaration – Category of functions – No arguments and no return values – Arguments but no return values - Arguments with return values – No arguments but return a value – Functions that return multiple values – Recursion – The scope, visibility and lifetime of variables – Arrays – Passing arrays to functions – Table of strings – String handling functions.

**UNIT – IV**

Pointers: Introduction – Declaring pointer variables – Initialization – Accessing a variable through its pointer – Pointers and arrays – Pointer and character strings — Arrays of Pointers – Pointers to Functions – Structures and Unions: Introduction – Defining a structure – Declaring a structure variable – Accessing structure members – Structure initialization– Pointers and structures - Unions.

**UNIT – V**

File management in C: Introduction – Defining and opening a file – Closing a file – Input/Output operations on files – Random access to files – Bitwise Operations – The preprocessor: Introduction – Macro substitutions.

**Text Book:**

1. E. Balagurusamy, “*Programming in C*“, 4<sup>th</sup> Edition, Tata McGraw Hill Publications.  
UNIT I: Chapter 1 Sections 1.1, 1.2, 1.8 Chapter 2 Sections 2.7 – 2.9 Chapter 3 Sections 3.1 – 3.12, 3.14, Appendix III  
UNIT II: Chapter 4 Sections 4.1 – 4.5 Chapter 5: Sections 5.1 – 5.9 Chapter 6 Sections 6.1 – 6.5  
UNIT III: Chapter 9 Sections 9.1, 9.4 – 9.14, 9.16, 9.19 Chapter 7 Sections 7.1 – 7.7 Chapter 9 Section 9.17 Chapter 8 Section 8.9, Chapter 8 Section 8.8  
UNIT IV: Chapter 11 Sections 11.1, 11.4 – 11.6, 11.10 - 11.12, 11.15,  
Chapter 10 Sections 10.1 – 10.5, 10.12 Chapter 11 Section 11.16.  
UNIT V: Chapter 12 Section 12.1 – 12.4, 12.6, Appendix I, Chapter 14 Sections 14.1, 14.2

**Reference Books:**

1. Byron S. Gottfried, “*Programming with C*“, 2<sup>nd</sup> Edition, Schaum’s outline series, Tata McGraw Hill Publications.
2. Mullish Cooper, “*The Spirit of C*“, 4<sup>th</sup> Edition, Schaum’s Outline Series, Tata McGraw Hill Publications.
3. T. Jeyapoovan, “*A first course in Programming with C*“, Vikes Publishing House Pvt. Ltd, New Delhi.



***COURSE OBJECTIVES***

- The course is given hands-on experience on C programming and improves the practical skill set.
- This course is established the beginners to build up the logic for the given problem recognize and understand the syntax and construction of C program.

***COURSE OUTCOME***

Upon successful completion of this lab Course, student will be able to

CO1: Understand the fundamentals of C Programming and its different modules.

CO2: Develop knowledge to write, compile and debug C program.

CO3: Use the role of identifiers, operators and type conversion.

CO4: Demonstrate the control statements like decision making and looping to solve problems associated with conditions and repetitions.

CO5: Use the role of Functions involving the idea of modularity.

CO6: Understand the concept of Array and pointers dealing with memory management.

CO7: Explain the structures and unions through which derived data types can be formed.

**List of Programs**

1. Control statements
2. Looping structures
3. Functions
4. Arrays
5. String manipulations
6. Structures
7. Application
8. Debugging

**COURSE OBJECTIVES**

- To get a clear understanding of object-oriented concepts.
- To understand object oriented programming through C++.

**COURSE OUTCOME**

Upon successful completion of this course, Student will be able to

- CO1: Gain the basic knowledge on Object Oriented concepts.
- CO2: Develop applications using Object Oriented Programming Concepts
- CO3: Demonstrate the differences between traditional imperative designs and object oriented design
- CO4: Explain class structures as fundamental, modular building blocks
- CO5: Understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code
- CO6: Understand the file handling in C++
- CO7: Get knowledge to use strings and Streams in C++

**UNIT I:**Principles of Object Oriented Programming – Software Evolution – Basic Concepts of Object Oriented Programming – Benefits of OOP – Applications of OOP – Structure of C++ Program – Tokens – Keywords – Identifiers and Constants – Basic Data Types – User Defined Data Types – Derived Data Types – Declaration of Variables – Operators – Manipulators – Expressions and their types – Control Structures.

**UNIT II:**Functions – The Main Function – Function Prototyping – Call by Reference – Return by Reference – Inline Functions – Default Arguments – Function Overloading. Classes and Objects – Specifying a Class – Defining Member Functions – A C++ program with Class – # Static Data Members – Static Member Functions – Arrays of Objects – Objects as Function Arguments – Friendly Functions – Returning Objects.

**UNIT III:**Constructors and Destructors – Constructors - Parameterized Constructors – Multiple Constructors in a Class – Copy Constructors – Destructors – Operator Overloading – Defining Operator Overloading – Overloading Unary Operators – Overloading Binary Operators – Overloading Binary Operators using Friends – Rules for Overloading Operators.

**UNIT IV:**Inheritance: Extending Classes – Defining Derived Classes – Single Inheritance – Multilevel Inheritance – Multiple Inheritance – Virtual Base Classes – Pointer, Virtual Functions and Polymorphism – Pointers - Pointers to Objects – this Pointer – Pointers to Derived Classes – Virtual Functions – Pure Virtual Functions.

**UNIT V:**Managing Console I/O Operations – C++ Streams – C++ Stream Classes – Unformatted I/O Operations – Formatted Console I/O Operations – Working with Files – Classes for File Stream Operations – Opening and Closing a File – Detecting End-of-file – More about Open( ): File Modes .

**Text Books:**

E.Balagurusamy, “*Object–Oriented Programming with C++*”, 4<sup>nd</sup> Edition, 2008.

UNIT 1: Chapter 1, Chapter 2 Section 2.6, Chapter 3

UNIT 2: Chapter 4 (Sec 4.1 – 4.7, 4.9), Chapter 5(Sec 5.3 – 5.6, 5.11 – 5.16)

UNIT 3: Chapter 6 (Sec 6.1 – 6.4, 6.7, 6.11) Chapter 7(Sec 7.1 – 7.5, 7.7)

UNIT 4: Chapter 8 (Sec 8.1 – 8.3, 8.5, 8.6, 8.9) Chapter 9(Sec 9.1 – 9.7)

UNIT 5: Chapter 10 (Sec 10.1 – 10.5) Chapter 11 (Sec 11.1 – 11.5)

**Reference Books:**

Robert Lafore, “*Object–Oriented Programming in Microsoft C++*”, 2<sup>nd</sup> Edition, Galgotia Publications, New Delhi, 2000.

***COURSE OBJECTIVES***

- The course is given hands-on experience on C++ programming and improves the practical skill set.
- This course is established the beginners to build up the logic for the given problem recognize and understand the Object oriented Concepts.

***COURSE OUTCOME***

Upon successful completion of this lab Course, student will be able to

- CO1: Describe about the object oriented concepts.
- CO2: Discuss the execution of the C++ program using classes and objects.
- CO3: Develop the knowledge on Member functions.
- CO4: Demonstrate Constructor, Operator Overloading and Inheritance.
- CO5: Demonstrate the control statements like decision making and looping to solve problems associated with conditions and repetitions.
- CO6: Describe the File handling.
- CO7: Understand the Inheritance concepts.

**Program to implement the following concepts**

1. Class and object
2. Functions using
  - (i) Call by value
  - (ii) Call by reference
  - (iii) Recursive call
3. Constructor and its types
4. Function Overloading
5. Operator Overloading
6. Inheritance
7. File Handling concept

**Semester II**  
**U19SBE1C**

**Skill Based Elective I**  
**Web page designing using HTML**

**Hours/Week: 2**  
**Credit: 2**

### **COURSE OBJECTIVES**

- ✓ To get a clear understanding principles of creating an effective web page through HTML.

### **COURSE OUTCOME**

Upon successful completion of this course, Student will be able to

CO1: To apply markup languages for processing, identifying, and presenting of information in web pages.

CO2: To learn scripting languages and web services to transfer data and add interactive components to web pages.

CO3: Insert a graphic within a webpage

CO4: Create a link within a webpage

CO5: Insert heading levels within a webpage

CO6: Insert ordered and unordered list within a webpage

CO7: Create and view a webpage.

### **UNIT I**

Introduction to HTML- Designing a Home page- History of HTML- HTML Generations- HTML Documents- Anchor Tag-Hyper Links.

### **UNIT II**

Header Section- Title- Prologue- Links- Colorful Web Page- Comment Lines- Designing the Body Sections- Heading printing- Aligning the headings- Horizontal rule- Paragraph.

### **UNIT III**

Tab Settings- Images and Pictures- Embedding PNG Format Images- Lists- Unordered Lists- Ordered Lists- Nested Lists.

### **UNIT IV**

Tables- Table Creation in HTML- Width of the Table and Cells- Cells Spanning Coloring Cells- Column Specification- Style Sheets- Defining Styles- Elements of Styles Linking a Style Sheet to an HTML document- In-line Styles- External Style Sheets- Internal Style Sheets- Multiple Styles.

### **UNIT V**

Frames-Frameset Definition- Frame Definition- Nested Frameset- Forms- Action Attribute- Method Attribute- Enctype Attribute- Drop Down List.

### **Text Book:**

C.Xavier, "World Wide Web Design with HTML", Tata McGraw Hill, New Delhi,2010.

Unit 1: chapter 4(sec 4.1-4.6)

Unit 2: chapter 5(sec 5.1-5.6) chapter 6(sec 6.1,6.3)

Unit 3: chapter 6(sec 6.4-6.7) chapter 7(sec 7.1, 7.2, 7.4, 7.5)

Unit 4: chapter 8(sec 8.1-8.6)

Unit 5: chapter 9(sec 9.1-9.7)

### **Reference Book:**

Joel Sklar, "Web Design Principles" Vikas Publications 2000.

## **COURSE OBJECTIVES**

- ✓ To get a clear understanding of object-oriented concepts through C++.
- ✓ To design and implementation of various basic and advanced data structures.

## **COURSE OUTCOME**

Upon successful completion of this course, Student will be able to

CO1: Gain the basic knowledge on Object Oriented concepts.

CO2: Develop applications using Object Oriented Programming Concepts

CO3: Explain class structures as fundamental, modular building blocks

CO4: Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.

CO5: To learn how to implement constructors and class member functions.

CO6: Understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code.

CO7: Be familiar with basic techniques of algorithm analysis

CO8: Master the implementation of linked data structures such as linked lists and binary trees

CO9: Ability to describe stack, queue and linked list operation.

CO10: Be familiar with several sub-quadratic sorting algorithms including Selection sort, Merge sort and Heap sort

## **UNIT – I**

Introduction to Data Structure: Definition. ARRAYS: Axiomatization- Ordered Lists- Representation of Arrays. STACKS AND QUEUES: Fundamentals-Evaluation of Expressions- Multiple stacks and Queues.

## **UNIT – II**

LINKED LIST: Singly Linked Lists- Linked Stacks and Queues- The Storage Pool- Polynomial Addition-More on Linked Lists-Doubly Linked Lists.

## **UNIT – III**

TREES: Basic Terminology-Binary Trees-Binary Tree Representations-Threaded Binary Trees-Applications of Trees:Set Representation.

## **UNIT – IV**

GRAPHS: Definitions and Terminology-Graph Representations- Adjacency Matrix and Adjacency Lists. Traversal: Depth First Search –Breadth First Search. Connected Components - Spanning Trees and Minimum Cost Spanning Tree.

## **UNIT – V**

Searching: Linear Search and Binary Search. Sorting: Bubble Sort- Selection Sort- Insertion Sort- Shell Sort - Merge Sort-Quick Sort.

**Text Book:**

1. **“Fundamentals of Data Structures”** – Ellis Horowitz and Sartaj Sahni

UNIT I: Chapter I:1.1, Chapter II :2. 1, 2.2, 2.4, Chapter III : 3.1, 3.3, 3.4

UNIT II: Chapter IV: 4.1 to 4.5, 4.8

UNIT III: Chapter V 5.1 to 5.4, 5.6, 5.7, 5.8.1

UNIT IV: Chapter VI 6.1: 6.1.1, 6.1.2, 6.2

2. **“Data Structures and Algorithms using C++”** – L. Mathu Krithigha Venkatesh

UNIT V: Chapter IX 9.1 to 9.20, 9.24 to 9.30

**Reference Book:**

1. Ashok N. Kamthane, Introduction to Data Structures in C, Pearson Edition, 2007

**Semester III**  
**Core Course (U19CA6P)**

**Hours/Week: 3**  
**Credit: 3**

**Data Structure and Algorithm using C++ Lab**

**COURSE OBJECTIVES**

- ✓ To provides hands-on for C++ & DS programs using C++ language

**COURSE OUTCOME**

Upon successful completion of this course, Student will be able to

CO1: Tell about the object oriented concepts

CO2: Discuss the execution of the C++ program using control structures, classes and objects

CO3: Develop the know

CO4: Demonstrate constructor, Operator Overloading and Inheritance

CO5: Introduce the concept of data structures including List, Stack, Queues.

CO6: To develop knowledge of applications of data structures including the ability to implement algorithms for the creation, insertion and deletion

CO7: Demonstrate a thorough understanding of arrays by designing and implementing programs that search and sort arrays.

**List of Programs**

1. To merge two Arrays into a Single Array.
2. To perform Stack operation using Array
3. To perform Queue operation using Array
4. To Create, Insert & Delete a Node using Singly Linked List
5. To find an element using Sequential or Linear Search.
6. To find an element using Binary search.
7. To construct Binary Tree and perform the Traversal
8. To perform the following Sorting:
  - (i) Bubble sort
  - (ii) Quick sort.

***COURSE OBJECTIVES***

- The course is designed to provide an general study of the Javascript programming.
- This course is accentuated the strengths of Javascript which provides students to write a program efficiently.
- This course is offered to design the wide variety of examples and applications in ASP.
- This course is emphasized to learn some other scripting programming languages.

***COURSE OUTCOME***

Upon successful completion of this course, students will be able to

- CO1: Understand the Introduction to Javascript.
- CO2: Develop knowledge to write Javascript program.
- CO3: Explain variables, functions, objects and other features of Javascript
- CO4: Understand different concepts of Windows and frames.
- CO5: Demonstrate the control in a form and validate the inputs.
- CO6: Illustrate the concepts PHP.
- CO7: Understand the Variables, Constants and Control structures.

**UNIT – I**

Introduction to Java Script: JavaScript’s Role on the Web – A First JavaScript Program – Working with Variables, Functions: Variables – Defining Functions – Calling Functions – Understanding JavaScript Objects – Object Methods – Variable Scope

**UNIT – II**

Windows: The Window Object Model – Opening and closing Windows – Frames and Other Objects: Creating Frames – Using the TARGET Attribute – Nesting Frames – The NOFRAMES Tag

**UNIT – III**

Forms: Overview of Forms – The <FORM> Tag – Form Elements: Input Fields – Selection Lists – Multiline Text Fields – Validating a User’s Input to a Form

**UNIT – IV**

PHP: Server side scripting Language: Basic syntax – Types – Variables – Constants – Expressions – Operators – Control Structures

**UNIT – V**

Classes and Objects – Sessions, Cookies.

**Text Book:**

1. Don Gosselin, “*JavaScript Comprehensive*” – Vikas Publishing house.  
UNIT I: CHAPTER 1& 2  
UNIT II: CHAPTER 5  
UNIT III: CHAPTER 6
2. Steven Holzner “*The PHP Complete Reference 5.2*” – Tata McGraw – Hill Edition.  
UNIT IV: Chapter 1(Sec 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7), Chapter 2  
UNIT V: Chapter 4(Sec 4.1, 4.2, 4.3, 4.4)

**Reference Books:**

1. Steve Suehring, “*JavaScript Step by Step*”, 2nd Edition, Microsoft Corporation
2. Ivan Bayross, HTML, DHTML, Java Script, Perl, CGI,BPB, Third Revis.
3. Steven Holzer “*Spring into PHP5*”, Tata McCraw Hill Edition.



**Semester III**  
**U19SBE3CP**

**Skill Based Elective III**  
**HTML, Java Script and PHP Lab**

**Hours/Week: 2**  
**Credit: 2**

### **COURSE OBJECTIVES**

- The course is given hands-on experience on HTML, Javascript and ASP and improves the practical skill set.
- This course is established the beginners to build understand the Structure of Scripting Languages.

### **COURSE OUTCOMES**

Upon successful completion of this lab Course, student will be able to

CO1: Understand the fundamentals of HTML program.

CO2: Develop knowledge to write and view the output of the HTML program.

CO3: Use the role of function, frames and validation in Javascript.

CO4: Understand the concept of PHP and write and view the simple examples.

### **HTML Lab**

1. (a) Creation of Vertical Frameset.  
(b) Creation of Horizontal Frameset.
2. Sending Mail.
3. Insertion of Image.
4. Application form Creation.
5. Creating an Advertisement for a Company.

### **Java Script Lab**

1. Functions.
2. Frames.
3. Validation.

### **PHP**

1. Develop a PHP program using controls and functions.
2. Develop a PHP program using session.
3. Develop a PHP program using cookies.

***COURSE OBJECTIVES***

- The course is designed to provide a wide knowledge on Database System and SQL
- This course is offered to study the physical and logical database designs, database modeling, relational, hierarchical, and network models
- This course is emphasized the strengths of SQL and PL/SQL which provides students to write a program efficiently.
- This course is offered to design the wide variety of examples SQL.
- This course is provided the knowledge to design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS.

***COURSE OUTCOME***

Upon successful completion of this course, students will be able to

CO1: Understand the features of Database Management Systems and Relational database.

CO2: Recognize the Data models.

CO3: Study about the File Organization and Addressing Schemes.

CO4: Learn about Relational Datastructure.

CO5: Understand the functional dependencies and design of the database

CO6: Apply normalization techniques to normalize the database

CO7: Understand the features Structured Query Language (SQL) and learn SQL syntax

CO8: Understand the concept of PL/SQL

CO9: Study about Exception Handlers in PL/SQL

**UNIT I:** Introduction: Database System Applications – Purpose of Database Systems – View of Data – Database Language – Relational Databases – Database Design – Object – Based and semi structured Databases – Data Storage and Querying Transaction Management – Data Mining and Analysis – Database Architecture: Database Users and Administrators.

**UNIT II:** Relational Model: Structure of Relational Databases – Fundamentals Relational – Algebra Operations Additional Relational – Algebra Operations – Extended Relational – Algebra Operations – Null Values – Modification of the Database.

**UNIT III:** SQL: Data Definition – Basic Structure of SQL Queries – Set Operations – Aggregate Functions – NULL Values – Nested Sub queries – Complex Queries – Views – Modification of the Database – Joined Relations – SQL Data Types and Schemes – Integrity Constraints – Authorization – Embedded SQL.

**UNIT IV:** Relational Languages: The Tuple Relational Calculus – The Domain Relational Calculus – Query – by – Example. Database Design and the E- R Model: Overview of the Design Process – The Entity – Relational Ship Model – 3 Constraints – Entity – Relational ship Diagrams – Entity – Relationship Design Issues

**UNIT V:** Relational Database Design: Features of Good Relational Designs – Atomic Domains and First Normal Form – Decomposition Using Functional Dependencies – Functional – Dependency Theory – Decomposition Using Multivalued Dependencies — Database – Design Process.

**TEXT BOOK:**

Silberschatz, Henry F. Korth and S. Sudarshan “*Database System Concepts*”, 5<sup>th</sup> Edition - McGraw – Hill – 2005.

Unit 1: chapter 1(sec 1.1,1.2,1.3,1.4,1.5,1.6,1.7,1.8,1.9,1.10,1.11,1.12,1.13)

Unit 2: chapter 2(sec 2.1, 2.2, 2.3, 2.4, 2.5, 2.6)

Unit 3: chapter 3(sec 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11)  
chapter 4(sec 4.1, 4.2, 4.3, 4.4)

Unit 4: chapter 5(sec 5.1, 5.2, 5.3)

chapter 6(sec 6.1, 6.2, 6.3, 6.4, 6.5)

Unit 5: chapter 7(sec 7.1, 7.2, 7.3, 7.4, 7.6, 7.8)

**Reference Books:**

1. Ramez Elmasri –Shamkant B. Navathe “*Fundamentals of Database Systems*” – Third Edition – Addison Wesley Longman Pvt., Ltd – Delhi 2001.

2. Alexis Leon and Matheews Leon “*Database Management Systems*” – Vikas Publishing House Pvt., Ltd., - New Delhi – 2002.

### **COURSE OBJECTIVE**

- The course introduces students to PL/SQL, Oracles procedural extension language for SQL and improves the practical skill set.
- This course is established the beginners to build understand the difference between SQL and PL/SQL Languages.

### **COURSE OUTCOMES**

Upon successful completion of this lab Course, student will be able to

CO1: Understand the fundamentals of SQL commands.

CO2: Develop knowledge to examine the characteristics of PL/SQL.

CO3: Understand the concept of SQL, implement and demonstrate a database solution.

### **List of Programs**

1. Develop a SQL query to create, update and to insert data in databases
2. Use select statement to perform
  - i. AND, OR, NOT Operators, WHERE clause.
  - ii. UNION, INTERSECTION, MINUS.
  - iii. Sorting and grouping.
  - iv. Sub queries
  - v. Join
3. Write a PL/SQL Program To Add Two Numbers
4. Construct a PL/SQL Program for Prime Number
5. Formulate PL/SQL Program to Find Factorial of a Number
6. Write down a PL/SQL Program to Print Table of a Number
7. Create PL/SQL Program for Swap two Numbers
8. Generate PL/SQL Program for Fibonacci Series
9. PL/SQL Program for Armstrong Number
10. PL/SQL Program to Print Patterns

### **COURSE OBJECTIVE**

- This course introduces to teach basic concepts of Financial Accounting
- This course offered the use a good Financial Accounting Software.

### **COURSE OUTCOMES**

Upon successful completion of this lab Course, student will be able to

- CO1: Appreciate the need for negotiable instruments and procedure of accounting for bills honoured and dishonoured
- CO2: Differentiate Trade bills from Accommodation Bills
- CO3: Understand the concept of Consignment and learn the accounting treatment of the various aspects of consignment
- CO4: Distinguish Joint Venture and Partnership and to learn the methods of maintaining records under Joint Venture
- CO5: Distinguish between Single Entry and Double Entry
- CO6: Know the ascertainment of profit under Single Entry system.
- CO7: Understand the meaning and features of Non-Profit Organisations
- CO8: Learn to prepare Receipts & Payment Account, Income & Expenditure Account and Balance Sheet for Non-Profit Organizations.

### **UNIT I**

Computer and Accounting – Role of Computer and Computing-Fundamentals of Computerized Accounting- Computerized Accounting Vs Manual Accounting Features of Tally.

### **UNIT II**

Procedure for creating a new company-Directory Name/Mailing Name/Address/Groups creation-Editing and Deleting Groups.

### **UNIT III**

Display of predefined vouchers-vouchers creations and alteration of vouchers while or after entering transaction – types of vouchers- Payment voucher-Receipt Voucher-Sales Voucher-Purchase Vouchers.

### **UNIT IV**

Ledger-Groups in Tally-Primary groups, subgroups, creation of ledger-process of creation of ledger-Balance Sheet at the Gateway of Tally-Method of showing Trading – Profit and Loss Account and Balance Sheet.

### **UNIT V**

Creation of Inventory Reports-creation of stock categories - stock items - stock groups.

### **Text Books:**

1. Tally-Accounting software –S.Palanive - Margham publications
2. Computer Application in Business - Dr.Rajkumar

**Semester IV**  
**Core Course (U19ACO3C)**

**Allied Paper III**  
**Organizational Behaviour**

**Hours/Week: 4**  
**Credit: 3**

### **COURSE OBJECTIVE**

- The course is designed to help the students to develop cognizance of the importance of human behaviour.
- This course is enabled students to describe how people behave under different conditions and understand why people behave as they do.
- This course is offered to provide the students to analyse specific strategic human resources demands for future action.
- This course is underlined to enable students to synthesize related information and evaluate options for the most logical and optimal solution such that they would be able to predict and control human behaviour and improve results.

### **COURSE OUTCOME**

Upon successful completion of this course, students will be able to

CO1: Understand the concept and nature of organizational behavior to understand the behaviour of people in the organisation.

CO2: Demonstrate the applicability of analyzing the complexities associated with management of individual behaviour in the organisation.

CO3: Explain about Attitudes and Values concepts.

CO4: Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behaviour of people in the organisation.

CO5: Analyze the complexities associated with management of the group behaviour in the organisation.

CO6: Understand the concept of Leadership and its styles and also explained the Power and Authority

### **UNIT – I**

Organisational Behaviour: Concept and Nature of Organisational Behaviour – Role of Organisational Behaviour – Need for studying Organisational Behaviour – Organisational Behaviour Models.

### **UNIT – II**

Human Behaviour: Individual Differences – Models of Man – Personality: Personality Theories – Learning and Behaviour Modification: Learning Theories

### **UNIT – III**

Attitudes and Values: Concept of Attitudes – Values – Types of Values – Perception: Perceptual Process – Motivation: Theories of Motivation – Job Satisfaction.

### **UNIT – IV**

Group Dynamics and Behaviour: Concept of group – Reason for group formation by people – Group behaviour – Group cohesiveness – Dynamics of Stress: Concept of Stress – Causes of Stress.

## UNIT – V

Leadership: Concept of Leadership – Qualities of Effective Leadership – Leadership Styles – Power and Authority: Power – Types of Power – Authority – Sources of Authority.

### Text Book:

1. L.M.Prasad, “*Organisational Behaviour*”, Sultan Chand & Sons Educational Publishers, New Delhi, Edition 2000.
2. J. Jayasankar, “*Organisational Behaviour*” Margham Publications, Chennai.

Unit - I :Book 1: Part I – Chapter 3(Pages: 57 – 59, 64 – 67, 71 – 74)

Book 2: Chapter 5(Pages: 5.5 – 5.6)

Unit - II :Book 1: Part II – Chapter 4(Pages: 82 – 89), Chapter 5(Pages: 92 – 97)

Chapter 7(Pages: 129 – 135)

Unit - III :Book 1: Part II – Chapter 9(Pages: 192 – 196, 205 – 207, 208 – 209)

Chapter 6(Pages: 112 – 114), Chapter 8(Pages: 151 – 162, 185 – 189)

Unit - IV : Book 1: Part III – Chapter 12(Pages: 240 – 242, 267 – 271)

Chapter 10(Pages: 211 – 215)

Book 2: Chapter 12(Pages: 12.2 – 12.3)

Unit - V :Book 1: Part III – Chapter 14(Pages: 310 – 313, 320 – 321)

Chapter 13(Pages: 286 – 291, 299 – 304)

Book 2: Chapter 18(Pages: 18.4 – 18.5)

### Reference Book:

1. S.S Khanka, “*Organisational Behaviour*”, S Chand and Co.
2. V.S.P. Rao & D.S. Narayana, “*Organizational theory and behavior*”

## **COURSE OBJECTIVES**

- This course is designed to enable the students to gain knowledge about marketing and its promotional aspects.

## **COURSE OUT COMES**

Upon successful completion of this course, students will be able to

- CO1: Understand the dynamics of marketing in business
- CO2: Apply the theoretical marketing concepts to the practical situation
- CO3: Demonstrate the ability to carry out a market research project.
- CO4: To communicate unique marketing mixes and selling propositions for specific products
- CO5: Construct written sales plans and professional interactive presentations

### **Unit I**

Marketing - Evolution – Definition- classification- objectives- selling vs. marketing – Marketing a science or art? - Modern Concept of marketing – role of marketing in economic development - Functions – buying- selling - transportation – warehousing – standardization – Grading – Packaging- ISO Series and AGMARK – ISI.

### **Unit II**

Buyer's behaviour – Buying motive – Market segmentation - Product - Features - Classification - New Product Planning and Development - Product Mix - Product Life Cycle - Branding - Brand Loyalty and Equity.

### **Unit III**

Pricing - Objectives - Factors - Methods and strategies. Channels of Distribution – Wholesaler and Retailer – Services rendered by them.

### **Unit IV**

Sales Promotion –types- Need –Sales Promotion mix– Advertising – Publicity- Personal selling - Advantages - Limitations.

### **Unit V**

Marketing Information System - Marketing Research - Features –Direct marketing - E Business – Telemarketing - Mail order business .

## **Text and Reference Books** (Latest revised edition only)

1. R.S.N.Pillai&Bagavathi “Modern Marketing,” S.Chand& Co., New Delhi.
2. RajanNair.N.,SanjithR.Nair,” Marketing,” Sultan Chand & Sons, New Delhi.
3. Kotler Philip, “Marketing Management,” Prentice Hall of India (Pvt) Ltd., New Delhi.
4. Monga&ShaliniAnand, “ Marketing Management,” Deep & Deep Publications, New Delhi.
5. Dr. L. Natarajan , “Marketing,” Margham Publications, Chennai.
6. Grewal , “Marketing,” Tata McGraw Hill management, New Delhi.
7. B.S.Raman, “Marketing,” United Publishers, Mangalore.
8. Dr. J. Jayasankar, “Marketing,” Margham Publications, Chennai.
9. K.Sundar, “Essentials of Marketing,” Vijay Niclole Imprints Pvt. Ltd, Chennai.



**COURSE OBJECTIVE**

- The course is designed to help the students to develop cognizance of the importance of Advertisement Management.
- This course is enabled students to describe the planning and budgeting concepts.
- This course is offered to provide the students to get a wide knowledge on Advertising Agencies.

**COURSE OUTCOME**

Upon successful completion of this course, students will be able to

- CO1: Understand the concepts of Advertisement Management
- CO2: Explain the basis of Advertising Strategy, Planning and Budgeting
- CO3: Illustrate about Organising Advertising Campaigne
- CO4: Learn the importance Advertising Agencies.
- CO5: Understand the effectiveness and control of Advertising.

**UNIT-I INTRODUCTION**

Nature, scope and types of advertising, Role of advertising for business units. Economics, Social and ethical aspects of advertising.

**UNIT-II- ADVERTISING STRATEGY, PLANNING AND BUDGETING**

Devising advertising strategy, Objectives and process of advertising budgeting models. Advertising budget allocation, decision making related to advertising.

**UNIT-III- ORGANISING ADVERTISING CAMPAIGNE**

Planning and organizing advertisement campaign creativity in advertising campaign: Copy writing and layout: various advertising media and their selection. Displays and role point of purchase advertising.

**UNIT-IV- ADVERTISING AGENCIES:**

Advertising agencies- their organization, functions need-utility and co-ordination with client. Selection of advertising agency- agency compensation.

**UNIT-V- EFFECTIVENESS AND CONTROL:**

Methods of measuring advertising effectiveness: Cost benefit-analysis, social and legal control of advertising, role of consumer's organization.

**Text Book Recommended:**

Rathor, B.S. Advertising Management-Himalaya Publishing House

**Reference:**

1. Myers-Advertising Management-PHI
2. Norms-Advertising-PHI

**COURSE OBJECTIVE**

- This course introduces the basic concepts of computer to the students who is not belonging to Computer Science stream.
- This course will give the knowledge about Secondary Storage Devices.
- This course will stress on fundamental parts Internet and the intranet, so that the students will have a basic concept for understanding and using other programming language.

**COURSE OUTCOME**

Upon successful completion of this course, students will be able to

CO1: Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming.

CO2: Explain the Secondary storage Devices and its types

CO3: Demonstrate about the Software

CO4: Understanding the basis of Data communication and computer Networks.

CO5: Explain about Internet and WWW.

**UNIT I**

Introduction: Characteristics of Computers – The Evolution of Computers – The Computer Generations. Basic Computer Organization: Input Unit – Output Unit - Storage Unit – Arithmetic Logic Unit – Control Unit – The Central Processing Unit. Processor and Memory: The Main Memory.

**UNIT II**

Secondary Storage Devices: Sequential and Direct Access Devices – Magnetic Disk - Optical Disk – CD-ROM. Input-Output Devices: Input Devices: Keyboard – Point-and-Draw Devices – Data Scanning Devices – Electronic-card Reader. Output Devices: Monitors – Printers – Plotters. Computer Software: Types of Software.

**UNIT III**

Operating Systems: Main Functions of an Operating System. Business Data Processing: Data Processing – Data Storage Hierarchy – Standard Methods of Organizing Data – File Management System: File Types – File Organizations – Database Management System: Database Models.

**UNIT IV**

Data Communication and Computer Networks: Basic Elements of a Communication System – Data Transmission Modes – Data Transmission Speed – Data Transmission Media – Digital and Analog Data Transmission.

**UNIT V**

The Internet: Definition- Basic Services: Electronic Mail – File Transfer Protocol – Telnet - The World Wide Web. WWW Browsers – Uses of the Internet. Multimedia: Multimedia Computer System – Multimedia Components – Multimedia Applications.

**Text Book:**

Pradeep K. Sinha and Priti Sinha, "*Computer Fundamentals*", BPB Publications, 3<sup>rd</sup> Edition.

Unit 1: chapter (1, 2)

Unit 2: chapter (8, 9, 10)

Unit 3: chapter (14, 16)

Unit 4: chapter (17)

Unit 5: chapter (18, 19)

**Reference Book:**

V.Rajaraman and Neeharika Adabala, "*Fundamentals of Computers*", 6<sup>th</sup> Edition, PHI Learning Private Limited, 2014

## **COURSE OBJECTIVE**

- This course aims at facilitating the student to understand the Object-Oriented programming concepts of JAVA towards developing Java based applications and hands on practices by applying the concepts of Database Connectivity.

## **COURSE OUTCOMES**

On the successful completion of the course, students will be able to

- CO1: Explain the OOPs concept, Java tokens and operators and expression
- CO2: Explain and implement classes and object ,method overloading and overriding concept.
- CO3: Describe Implements interfaces, use exceptions , threads, collections, Apply logs of Java for the given problem.
- CO4: Understand Concept of Thread, its life cycle and Thread Exception
- CO5: Define various types of Errors and Apply Exception handling using multiple catch statement
- CO6: understand and describe concept of streams , reading and writing
- CO7: understand Applet , Life cycle of Applet and develop simple applet.

### **UNIT – I**

Benefits of OOPS – Java History – Java Features – Java Environment – Java Tokens – Constants – Variables – Data Types – Operators and Expressions – Decision Making and Branching – Decision Making and Looping.

### **UNIT – II**

Classes and Objects – Constructors – Method Overloading – Static Members – Inheritance – Overriding Methods – Final Variables, Final Methods and Final Classes – Finalizer Method – Abstract Methods and Abstract Classes – Visibility Control – Arrays – Strings.

### **UNIT – III**

Defining Interface– Extending Interfaces – Implementing Interfaces – Packages – Multithreaded Programming: Thread Life Cycle – Thread Exceptions – Thread Priority –Synchronization.

### **UNIT – IV**

Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statements – Managing Input / Output Files in Java: Concept of Streams – Stream Classes – Character Stream Classes – Reading / Writing Characters – Reading / Writing Bytes – Handling Primitive Data Types – Random Access files.

### **UNIT – V**

Event Handling Methods – Labels – Button Control – CheckBox Control – Radio Button Control – Choice Control – List Control – Flow Layout – Border Layout – Grid Layout– Menus – Mouse Events – Applets: Life cycle of an Applet – Development and Execution of a Simple Applet.

**Text Books:**

1. E.Balagurusamy, “Programming with JAVA”, Tata McGraw Hill, New Delhi, 4 th Edition. (UNIT I,II,III&IV)
2. C. Muthu, “Programming with JAVA”, Vijay Nicole Imprints Private Limited, Chennai, 2 rd Edition, 2011. (UNIT V)  
UNIT I : Chapter 1 Sec.1.3,1.4 , Chapter 2 Sec. 2. 1, 2 .2 , 2 .9, Chapter 3 Sec 3.6, Chapter 4  
Sec. 4.2 – 4.4,Chapter 5 Sec. 5.1 – 5.15,Chapter 6 Sec. 6.1 – 6.8,Chapter 7 Sec. 7.1 – 7.6.  
UNIT II: Chapter 8 Sec. 8.5,8.7 to 8.9 ,8.11 – 8.16,8.18 Chapter 9 Sec. 9.1 – 9.9.  
UNIT III:Chapter 10 Sec.10.2 – 10.5, Chapter 11,Sec. 11.1 – 11.10.Chapter 12 Sec.  
12.5,12.7 – 12.9.  
UNIT IV: Chapter 13 Sec. 13.1 – 13.6, Chapter 16 Sec. 16.2,16.3,16.5,16.11 – 16.13,16.15.  
UNIT V: Chapter 9 Sections 9.4,9.6 – 9.11,9.13 – 9.15, Chapter 10 Sections  
10.3,10.5,Chapter 8 Sections 8.2,8.4

**Reference Book:**

1. Herbert Schildt, “Complete Reference JAVA 2”, Tata McGraw – Hill Publishing Company Ltd., 5 th Edition, 2009

**Semester V**  
**Core Course (U19CA10P)**

**Java Programming Lab**

**Hours/Week: 5**  
**Credit: 3**

### **COURSE OBJECTIVE**

- This course aims at facilitating the student to practice and Implement the Object-Oriented programming concepts of JAVA towards developing Java based applications and hands on practices by applying the concepts of Database Connectivity.

### **COURSE OUTCOMES**

On the successful completion of the course, students will be able to

CO1: Understand and implement the concept of class and objects.

CO2: Write Java programs for string manipulation.

CO3: Implement packages, access specifiers and interfaces in a program

CO4: Implement Program for Events handling.

CO5: Generate program for implementing Multithreading

CO6: Write programs using Applet and AWT

Write a java program using the concept

1. Classes and Objects.
2. Inheritance
3. (a) Built-in package.  
(b) User defined package
4. Vector Manipulation.
5. Exception handling.
6. Applet.
7. Multi Threading.
8. AWT components.

**Semester V**  
**Elective Course (U19CA11E)**

**Software Engineering**

**Hours/Week: 5**  
**Credit: 5**

### **COURSE OBJECTIVE**

- This course aims at introducing to the students about the product that is to be engineered and the process that provides a framework for the engineering technology. The course facilitates the students to analyze risk in software design and quality and to plan, design, develop and validate the software project.

### **COURSE OUTCOMES**

On the successful completion of the course, students will be able to

- CO1: Explain a process model for a software project development
- CO2: Prepare the SRS, Design document, Project plan of a given software system
- CO3: Apply Project Management and Requirement analysis, Principles to S/W project development.
- CO4: Analyze the cost estimate and problem complexity using various estimation techniques
- CO5: Generate test cases using the techniques involved in selecting:
  - (a) White Box testing
  - (b) Block Box testing

**UNIT I:** Introduction to Software Engineering: Definitions - Size factors – Quality and Productivity Factors – Managerial Issues. The Product: The evolving role of software – Software – characteristics - applications. The process: Software engineering: A Layered Technology – The software process –Evolutionary software process models: Spiral model.

**UNIT II:** Planning a Software Project: Defining the problem – Developing a solution Strategy – Planning the development Process – Planning an organizational structure – Other Planning Activities.

**UNIT III:** Software Cost Estimation: Software Cost Factors – Software Cost Estimation Techniques – Staffing Level Estimation. Software Requirements Definition: The Software Requirements Specification – Formal Specification Techniques.

**UNIT IV:** Software Design: Fundamental Design Concepts – Modules and Modularization Criteria – Design Notation – Design techniques – Design Guidelines. Implementation Issues: Structured coding techniques – coding style – Documentation guidelines.

**UNIT V:** Verification and Validation Techniques: Quality Assurance – Walkthroughs and inspections – Static analysis –Unit testing and debugging – System testing – Formal verification.

### **Text Books:**

1.Richard E. Fairly – “*Software Engineering Concepts*”, Tata McGraw Hill Publication, 1997 edition.

Unit 1: chapter 1(sec 1.1-1.4)

Unit 2: chapter 2(sec 2.1-2.5)

Unit 3: chapter 3(sec 3.1-3.4) chapter 4(sec 4.1-4.2)

Unit 4: chapter 5(sec 5.1-5.2, 5.9) chapter 6(sec 6.1, 6.2, 6.4)

Unit 5: chapter 8(sec 8.1-8.3, 8.5-8.7)

2.Roger S.Pressman – “*Software Engineering A Practitioner’s Approach*”, 5<sup>th</sup> edition, McGraw Hill, 2001.

UNIT 1: CHAPTER 1(Sec 1.1, 1.2)

**Reference book:**

1.Watts S. Humphery – “*A Discipline for Software Engineering*”, Addition Wesley Company, 1995.



## **COURSE OBJECTIVE**

- This course is designed to enable the student to identify the information and need of the system. It also enables the student to get a detailed knowledge on various System design factors and tools. It gives a clear knowledge of Design Phases and System Applications.

## **COURSE OUTCOMES**

On the successful completion of the course, the students will be able to

- CO1: Explain the need of the system to the Business organization
- CO2: Understand the Applications of System in Business
- CO3: Explain the process of Designing techniques
- CO4: Describe the various Design Tools
- CO5: Describe the file structure and its organization
- CO6: Explain the security measures
- CO7: Understand and Describe the Installation and Maintenance of the System

### **Unit I**

Business Problem & Computers : Overview of Business Organization – Information needs & systems – Some typical problems – System life cycle – System study – Feasibility Study

### **Unit II**

System Analysis – Initiation of Analysis – The Process of Analysis – System Design – Design factors – Design Constraints – Processing Techniques – The Process of design – Output Design – input Design – Process Design – File Data Base Design

### **Unit III**

Analysis & Design Tools – Data Flow Diagram – Data Dictionary – Entity Relationship Diagram – Decision Tree – Decision Table – Structured English – Structure Charts – Grid Charts – Layout Charts – Configuration Selection & Acquisition – Detailing the configuration – Storage requirements – Internal Memory – Processors – Terminals – printers

### **Unit IV**

File Organization & Design : Functional Classification of Files – File Structure – File Organization – Inverted File – Security & Controls – Risk management – Physical Security – Access Control – Data Control – Other Security & control measures

### **Unit V**

Post – Design phases – Develop Software – Installation & Changes-over-System Operation & maintenance – Systems Applications – Financial Accounting – Inventory Accounting System – Equipment Maintenance – Bank Operations – Production Planning & control – Process Control – Robotics

### **Text Book:**

1. System Analysis & Business Applications – Rajesh Nalk & Swapna Kishore, Wheeler Publishing – 1st edition 1994.

### **Reference Book:**

1. Introducing Systems Analysis & Design – Ellas M. Awad – Galgotia Publications (P) Ltd., (Second Edition)

## **COURSE OBJECTIVE**

- This course is designed to provide an overview of Software Testing. It also enables the student to get a detailed knowledge on fundamentals of Software Testing and apply the different types of testing to their projects.

## **COURSE OUTCOMES**

On the successful completion of the course, students will be able to

- CO1: Describe the importance of testing.
- CO2: Explain the Various types of Testing.
- CO3: Understand the various Phases of Software Project
- CO4: Differentiate the various types of testing
- CO5: Implement the different Types of testing in his project work
- CO6: Prepare the Testing report
- CO7: Measure the Test Metrics

### **Unit I**

Software Development Life Cycle models: Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation – Process Model to represent Different Phases - Life Cycle models. White-Box Testing: Static Testing – Structural Testing – Challenges in White-Box Testing.

### **Unit II**

Black-Box Testing: What is Black-Box Testing? - Why Black-Box Testing? – When to do Black-Box Testing? – How to do Black-Box Testing? – Challenges in White Box Testing -Integration Testing: Integration Testing as Type of Testing – Integration Testing as a Phase Testing – Scenario Testing – Defect Bash.

### **Unit III**

System and Acceptance Testing: system Testing Overview – Why System testing is done? – Functional versus Non-functional Testing – Functional testing - Nonfunctional Testing – Acceptance Testing – Summary of Testing Phases.

### **Unit IV**

Performance Testing: Factors governing Performance Testing – Methodology of Performance Testing – tools for Performance Testing – Process for Performance Testing – Challenges. Regression Testing: What is Regression Testing? – Types of Regression Testing – When to do Regression Testing – How to do Regression Testing – Best Practices in Regression Testing.

### **Unit V**

Test Planning, Management, Execution and Reporting: Test Planning – Test Management – Test Process – Test Reporting –Best Practices. Test Metrics and Measurements: Project Metrics – Progress Metrics – Productivity Metrics – Release Metrics.

### **Text Book**

1. Software Testing Principles and Practices – Srinivasan Desikan & Gopalswamy Ramesh, Pearson Education, 2014

### **Reference Book**

1. Foundations of Software Testing, Aditya P. Mathur, Pearson Education, 2013

## COURSE OBJECTIVE

- The course aims to provide the basic knowledge of Computer Graphics and its application, it also impart knowledge on two dimensional transformation and various clipping concepts.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

- CO1: Describe the basics of Computer Graphics, input and hard copy device and graphics software
- CO2: Explain about RasterScan and Random Scan system
- CO3: Explain and illustrate the various algorithms like line drawing , DDA, Bresenham's etc
- CO4: discuss about various attributes of output primitives like line attribute, AreaFill, Character fill etc
- CO5: Illustrate 2D Geometric Transformations and Explain Matrix representation
- CO6: Describe and illustrate Clipping Operations like Line clipping, polygon clipping.
- CO7: Discuss about window to viewport coordinate and 2D viewing functions.

### UNIT I:

A survey of computer graphics: Computer aided design – Presentation graphics–computer art – Entertainment – Education and training – Visualization – ImageProcessing – Graphical user interfaces. Overview of graphics systems: Video display devices – Raster- scan systems – Random scansystems – Graphics monitors and workstation – Input devices – Hard-copy devices –Graphics software.

### UNIT II:

Output primitives: Points and lines – Line-drawing algorithms – DDA algorithm –Bresenham's line algorithm – Circle-generating algorithms – Filled-area primitives –Boundary-fill algorithm.

### UNIT III:

Attributes of output primitives: Line attributes – Area-fill attributes – Character attributes- Bundled attributes – Inquiry functions – Antialiasing

### UNIT IV:

Two-dimensional Geometric transformations: Basic transformations – Matrix representations – Composite transformations – Other transformations.

### UNIT V:

Window-to-viewport coordinate – Two-dimensional viewing functions – Clipping operations – Point clipping – Line clipping – Polygon clipping.

### Text book:

Donald Hearn and M.Pauline Baker “Computer Graphics” C Version 2 nd Edition, -Pearson Education, 2006.

Unit 1: chapter 1(sec 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8)

chapter 2(sec 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7)

Unit 2: chapter 3(sec 3.1, 3.2, 3.5, 3.11)

Unit 3: chapter 4(sec 4.1, 4.4, 4.5, 4.6, 4.7, 4.8)

Unit 4: chapter 5(sec 5.1, 5.2, 5.3, 5.4)

Unit 5: chapter 6(sec 6.4, 6.5, 6.6, 6.7, 6.8)

**Reference Book:**

1. Jeffrey J. McConnell, "Computer Graphics: Theory Into Practice", Jones and barlett publishers, 2006.

2. Peter Shirley, Michael Ashikhmin, Steve Marschner "Fundamentals of Computer Graphics", CRC Press, 2009.

## **COURSE OBJECTIVE**

- This course is designed to provide an overview of History of animation. It also enables the student to get a detailed knowledge on fundamentals of animation from traditional animation to CGI animation.

## **COURSE OUTCOMES**

On the successful completion of the course, students will be able to

- CO1: Explain the basic of animation and its history
- CO2: Explain the Basic rules and principles of animation
- CO3: Describe about various timing for animation and also the use of camera angles
- CO4: Describe about Animation production process in detail
- CO5: Understand and apply basic traditional animation
- CO6: Implementation of sample animations like Bouncing ball etc.,

### **Unit-1**

Introduction to Animation & History of Animation: What is Animation, History of Animation – Starting from Early approaches to motion in art, Animation before film, Traditional Animation – The silent era, Walt Disney & Warner Bros., Snow White & the seven dwarfs, The Television era, Stop-motion, CGI Animation - till date. Different Types of Animation: Traditional Animation - Cel Animation or hand drawn Animation - Stop Motion Animation – Puppet Animation, Clay Animation, Cut-out Animation, Silhouette Animation, Model Animation, Object Animation etc. - Computer Animation – 2D Animation, 3D Animation

### **Unit-2**

The 12 basic Principles of Animation: The basic rules of animation including Squash and stretch, Anticipation, Staging, Straight Ahead Action and Pose to Pose, Follow Through and Overlapping Action, Slow In and Slow Out, Arc, Secondary Action, Timing, Exaggeration, Solid drawing, Appeal

### **Unit-3**

Timing for Animation: Ease in & Ease out, X-Sheet handling, Field Chart usage, Camera Panning, Zoom-in & Zoom-out, Cut-shot, Dissolve transform, trick shot, hook-up shot etc. How to create hook-up poses for animation. How to use camera angles to emphasize performance

### **Unit-4**

Animation Production Process: Understand Animation Requirements, Basic steps in Pre-Production, Production and Post-Production.

### **Unit-5**

Basic Traditional Animation Samples: To apply the principles of animation, Posing and Character emotion. How to observe and study human behavior and expressions to help visualize concepts. How to enact and emote. Sample animations - Bouncing Ball Animation, Walk Cycle, Run Cycle, 4 Leg Walk cycle, Fly Cycle

**Text Books and Reference Books:**

1. The Illusion of Life: Disney Animation - Frank Thomas and Ollie Johnston
2. Cartoon Animation - Preston Blair
3. The Animators Survival Kit - Richard Williams

**Online References**

History of Animation - [https://en.wikipedia.org/wiki/History\\_of\\_animation](https://en.wikipedia.org/wiki/History_of_animation)

Principles of Animation - [https://en.wikipedia.org/wiki/12\\_basic\\_principles\\_of\\_animation](https://en.wikipedia.org/wiki/12_basic_principles_of_animation)

YouTube Video: <https://www.youtube.com/watch?v=haa7n3UGyDc&feature=youtu>

### **COURSE OBJECTIVE**

- This course is designed to provide an overview of Visual effects. It also enables the student to get a detailed knowledge on various visual effects tools and gives a clear knowledge on 2d and 3d effects.

### **COURSE OUTCOMES**

On the successful completion of the course, students will be able to

- CO1: Explain the overview of visual effects, 3D modeling
- CO2: Describe various tracking and cloning effects
- CO3: Understand and implement the various effects
- CO4 Describe about 3D stereo effects in detail
- CO5: Differentiate anaglyph and polarised
- CO6: Implementation of image conversion from 2D to 3D
- CO7: Differentiate 2D and 3D

#### **Unit – I**

Visual effect overview, image animation, 3d tools converting, Controlling timeline panels, Visual effect making, 3d model compositing, Designing Glow Effects

#### **Unit – II**

Tracking, one point track, two point track, Four point track, Double tracking, Paint Clone effect, Wire remove effect, Sky replace effect, background changing effect, Masking, Rotoscoping , 3D character masking.

#### **Unit - III**

Bug effect, Healer effect, Time warp effect, Time Stretching effect, Image to video effect, Day to night effect, Demon face warp, 3D depth effect

#### **Unit - IV**

3D stereo effect, 3d stereo convert effect, 3D glass making, Different between anaglyph; polarised, Change 3d stereo in premier software

#### **Unit – V**

Visual Effects Tool and advanced functions– Converting images from 2D to 3D Pictures. Creating 3D Effects- Differentiation 2D effects and 3D effects.

#### **Text Books and Reference Books:**

- 1) Match moving: The Invisible Art of Camera Tracking by Tim Dobbert. Tim Dobbert (Author)
- 2) The After Effects Illusionist: All the Effects in One Complete Guide by Chad Perkins .Chad Perkins (Author)
- 3) The Visual Effects Arsenal: VFX Solutions for the Independent Filmmaker by Bill Byrne . Bill Byrne (Author)
- 4) After Effects Expressions by Marcus Geduld Marcus. Geduld (Author)
- 5) Filming the Fantastic: A Guide to Visual Effects Cinematography by Mark Sawicki . Mark Sawicki (Author)

### **COURSE OBJECTIVE**

- This course is designed to provide an overview of Data Mining and Data Warehousing concepts. It also enables the student to get a detailed knowledge on how to discover patterns in Data Mining. It enables the students to apply the different types of Data Mining techniques to their projects. It gives a clear knowledge of using huge volume of data efficiently in the research work.

### **COURSE OUTCOMES**

On the successful completion of the course, students will be able to

- CO1: Describe the importance of Data Mining.
- CO2: Explain the Various types of Data Mining techniques
- CO3: Understand the various Phases of Data Mining
- CO4: Differentiate the various types of Data Clustering
- CO5: Implement the different Types of Data classification in his project work
- CO6: Measure the Test data in various Data Mining Techniques

#### **Unit -I**

Introduction : Data Mining – Motivation, Importance of DM Functionalities, Basic Data Mining Tasks, DM Applications, and Social Implications

#### **Unit –II**

Data Preprocessing, Data Mining Primitives, Languages : Data Cleaning, Data Integration and Transformation, Data Reduction, Discretization and concept of Hierarchy Generation, Task relevant Data, Background Knowledge, Presentation and Visualization of Discovered Patterns.

#### **Unit –III**

Clustering: Cluster Analysis – Partitioning Methods – Hierarchical Methods – Density Based Methods – Grid Based Methods

#### **Unit -IV**

Data Mining Algorithms : Association Rule Mining, Classification and Prediction – Decision Tree, Bayesian Classification Back Propagation, Cluster Analysis, Outlier Analysis.

#### **Unit-V**

Web, Temporal and Spatial Data Mining : Web Content Mining, Web Structure Mining, Web Usages Mining, Spatial Mining, Generalization and specialization, Spatial Rules, Spatial Classification and Clustering Algorithms, Temporal Mining, Modeling Temporal Events, Times Series, Pattern Detection, Sequences.

#### **Text and Reference Books :**

1. Jiawei I-lan & Micheline Kambler, “Data Mining: Concepts and Techniques”, Harcourt India Pvt. Ltd., First Indian Reprint, 2001
2. Margaret H. Dunham, “Data Mining : Introduction and Advance Topics”, Pearson Education, First Indian Reprint, 2003
3. Arun K. Pujari, “Data Mining Techniques”, University Press (India) Limited, First edition, 2001
4. Efreem O, Mallach, “Decision Support and Data Warehousing Systems”, Mcgraw-Hill International Edition, 2000



## COURSE OBJECTIVE

- Internet Technologies presents the student with an introduction to the Internet and its services, applications and tools. World Wide Web and its facilities, applications and tools. Topics include Internet history, a survey of Internet-based facilities and applications (e.g., e-mail, web browsers, file transfer utilities, list servers, etc), and Web-based research and information resources. The World Wide Web service is emphasized and basic Web page creation with HTML is introduced.

## COURSE OUTCOMES

Upon successful completion of the course, the student should be able to

CO1: Defines terms related to the Internet and how computers are connected to the Internet.

CO2: Explains the web browsers and internet addressing.

CO3: Demonstrate an understanding of and the ability to use electronic mail.

CO4: Describes File Transfer Protocol and Hyper Text Transfer Protocol.

CO5: Explains Search Engines for the Internet.

CO6: Describes the Security and Privacy policies used in Search Engines.

## UNIT I

Internet – Introduction- Getting Connected: Dial-up connection – DSL - Cellular Broadband - Wireless Broadband – WWW - Web Technologies: HTML

## UNIT II

Web Browsers and Web browsing: Web Browsers - Types of Browsers – Web Browsing - Internet Addressing: IP address – Domain Name – Uniform Resource Locator (URL)

## UNIT III

E-mail: Names and Addresses – Mailing Basics - Spamming – E-mail Safety Tips – Instant Messaging: Instant Messaging from the Web – Internet Telephony - Videoconferencing

## UNIT IV

Internet Protocol: TCP/IP - File Transfer Protocol – Hyper Text Transfer Protocol –Telnet – Gopher – WAIS.

## UNIT V

Searching the Web: Web Index – Web Directory - Search Engine – Meta-search Engines - Anonymity, Safety and Privacy: Privacy – Cookies – Understanding Security and privacy

## Text Book

Alexis Leon and Mathews Leon, " *Internet for Everyone*", Leon Press, 15<sup>th</sup> Anniversary Edition, 2012.

## Reference Books

1. Deitel and Deitel, " *Internet and World Wide Web - How to Program*", PHI, 4<sup>th</sup> Edition, 2008.
2. Christian Cramlish, " *The Internet*", BPB, 2<sup>nd</sup> Edition, 2004

**COURSE OBJECTIVE**

- To learn the fundamentals of Operating Systems
- To gain knowledge on Distributed operating system concepts that includes architecture, Mutual exclusion algorithms, Deadlock detection algorithms and agreement protocols
- To gain insight on to the distributed resource management components

**COURSE OUTCOMES**

CO1: Master functions, structures and history of operating systems

CO2: Master understanding of design issues associated with operating systems

CO3: Master various process management concepts including scheduling, synchronization, deadlocks

CO4: Be familiar with multithreading

CO5: Master concepts of memory management including virtual memory

CO6: Master system resources sharing among the users

CO7: Master issues related to file system interface and implementation, disk management

CO8: Be familiar with protection and security mechanisms

CO9: Be familiar with various types of operating systems including Unix

**UNIT – I**

Evolution of operating systems– Functions – Different views of OS – Batch processing, Multiprocessing, Time sharing OS – I / O programming concepts – Interrupt Structure & processing

**UNIT – II**

Memory Management – Single Contiguous Allocation – Partitioned Allocation –Relocatable Partitions allocations – Paged and Demand paged Memory Management –Segmented Memory Management – Segmented and Demand paged Memory Management – overlay Techniques – Swapping

**UNIT – III**

Processor Management – Job Scheduling – Process Scheduling – Functions and Policies – Evolution of Round Robin Multiprogramming Performance – Process Synchronisation– Wait and Signal mechanisms – Semaphores P & V Operations – Deadlock – Banker’sAlgorithm.

**UNIT – IV**

I/O Traffic Controller, I/O Scheduler, I/O Device Handlers – Spooling.

**UNIT – V**

File Management : Simple File System, General Model of a File System, Physical and Logical File System.

**Text Book:**

1.E. Madnick& John J.Donavan, “*Operating Systems*” Tata McGraw Hill Publishing Co.,Limited.

2.PradeepK.Sinha, ”*Distributed Operating Systems*”, Prentice – Hall of India Private Limited

UNIT I : Chapter 1, 2

UNIT II : Chapter 3

UNIT III : Chapter 4

UNIT IV : Chapter 5

UNIT V : Chapter 6

**Reference Books:**

D.M. Dhamdhere, “*System Programming and Operating Systems*”Tata McGraw HillPublishing Co., Limited.

## COURSE OBJECTIVE

- The course is designed to provide Basic knowledge of Python. Python programming is intended for software engineers, system analysts, program managers and user support personnel who wish to learn the Python programming language.

## COURSE OUTCOMES

Problem solving and programming capability

- CO1. Describe the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python
- CO2. Express different Decision Making statements and Functions
- CO3. Understand and summarize different File handling operations
- CO4 Design and develop Client Server network applications using Python
- CO5 Understand the GUI Programming with TKinter

## UNIT I

Welcome to Python - What is Python – History of Python – Features of Python – Installing Python – Running Python - Comments - Operators - Variables and Assignment - Python Objects – Standard Types - Other Built-in Types - Internal Types - Standard Type Operators - Standard Type Built-in Functions - Categorizing the Standard Types - Unsupported Types

## UNIT II

Introduction to Numbers – Integers - Floating Point Real Numbers - Complex Numbers – Operators -Built-in Functions -Sequences – Strings - Strings and Operators - String-only Operators - Built-in Functions - String Built-in Methods - Special Features of Strings

## UNIT III

Lists – Operators - Built-in Functions - List Type Built-in Methods - Special Features of Lists - Tuples - Tuple Operators and Built-in Functions - Special Features of Tuples - Conditionals and Loops – if statement - else statement - else if statement - while statement - for statement - break statement - continue statement - pass statement - else statement

## UNIT IV

Regular Expressions – Introduction – Special symbols and characters for Regular Expressions – Regular Expressions and Python – Network Programming – Introduction – Network programming in Python – Sockets : Communication end points

## UNIT V

GUI Programming with TKinter – Introduction TKinter and Python Programming – Tkinter examples – Related modules and other GUIs – Web programming – Web surfing with Python – Advanced web clients.

## Text Books

1. Chun, J Wesley, CORE Python Programming, 2 nd Edition, Pearson, 2007 Reprint 2010.  
UNIT I : Chapter 1, 2, 4    UNIT II : Chapter 5, 6  
UNIT III : Chapter 6, 8    UNIT IV : Chapter 15, 16  
UNIT V : Chapter 18, 19

## Reference Book

- 1.Jeffrey Elkner, Chris Meyers Allen Downey, Learning with Python, Dreamtech Press, 2015

**COURSE OBJECTIVE**

- The course is designed to provide Basic knowledge of Python. Python programming is intended for software engineers, system analysts, program managers and user support personnel who wish to learn the Python programming language.

**COURSE OUTCOMES**

Problem solving and programming capability

1. Write a python program to perform operation on :
  - a) List
  - b) Tuple
  - c) Dictionary
2. Write a python program using
  - a) Decision making statement
  - b) Looping statements
3. Write a Python program to implement using the concept of Regular Expression.
4. Write a Python program using 'calendar'.
5. Write a Python program to create applications using controls in 'Tkinter'

## **COURSE OBJECTIVE**

- This subject deals with E-commerce concepts like E-Security and E-payment.
- To understand the process of Electronic commerce and Business strategy involved in it.

## **COURSE OUTCOMES**

Upon successful completion of this course, the student will be able to:

CO1: Discuss the e-Commerce process.

CO2: Describe an example of system architecture for an e-Business.

CO3: List the seven major elements of web design.

CO4: Identify and explain fundamental web site tools including design tools, programming tools, and data processing tools.

CO5: Identify the major electronic payment issues and options.

CO6: Discuss security issues and explain procedures used to protect against security threats.

CO7: Identify and discuss management issues underlying e-Commerce issues including organizational structure, strategic planning, goal setting, corporate social responsibility, international arena, changing market intermediaries, resource allocation and customer service.

### **UNIT – I**

E-Commerce-Electronic Commerce – E-Commerce types – E-Commerce and world at the large – E Commerce Case studies: Intel, Amazon

### **UNIT – II**

Electronic Mail – The X, 400 Messages handling system – Internet addresses – Multipurpose Internet mail Extension – X.500 Directory Services – E-Mail User agent.

### **UNIT – III**

EDI- Costs and benefits – Components of EDI Systems – EDI implementation issues – EDIFACT – EDIFACT Message Structure.

### **UNIT – IV**

Cyber Security – Cyber Attacks – Hacking – SSL – Authentication and assurance of DATA integrity – Cryptographic based solution – Digital Signatures – VPN.

### **UNIT – V**

Electronic Payment Systems – Payment gateway – internet banking – the SET protocol – E-Cash – E-Cheque – Elements of electronics payments

### **Textbook:**

1. Kamallesh.Kbalaji, Debjani Nag “*E-Commerce – The Cutting Edge of Business*”, 2<sup>nd</sup> Edition, Tata McGraw Hill.

### **Reference Books:**

1. Ravi Kalakota and Andrew B.Whinston “*Frontiers of E-Commerce* “ – Pearson Edu.  
2. S.Jaiswal “*E-Commerce : Doing Business through internet* “ , Galgotia Publication, 2001

**COURSE OBJECTIVE**

- Students will be explored to the interconnection and integration of the physical world and the cyber space. They are also able to design & develop IOT Devices.

**COURSE OUTCOMES:**

CO1: Able to understand the application areas of IOT

CO2: Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks

CO3: Able to understand building blocks of Internet of Things and characteristics.

**Unit I**

Introduction & Concepts: Introduction to Internet of Things, Physical Design of IOT, Logical Design of IOT, IOT Enabling Technologies, IOT Levels.

**Unit II**

Domain Specific IOTs: Home Automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Life Style.

**Unit III**

M2M & System Management with NETCONF-YANG: M2M, Difference between IOT and M2M, SDN and NFV for IOT, Software defined Networking, Network Function Virtualization, Need for IOT Systems Management, Simple Network Management Protocol, Limitations of SNMP, Network Operator Requirements, NETCONF, YANG, IOT Systems management with NETCONF-YANG.

**Unit IV**

Developing Internet of Things & Logical Design using Python: Introduction, IOT Design Methodology, Installing Python, Python Data Types & Data Structures, Control Flow, Functions, Modules, Packages, File Handling, Date/ Time Operations, Classes, Python Packages

**Unit V**

IOT Physical Devices & Endpoints: What is an IOT Device, Exemplary Device, Board, Linux on Raspberry Pi, Interfaces, and Programming & IOT Devices.

**TEXT BOOKS:**

Vijay Madiseti, Arshdeep Bahga, "Internet of Things A Hands-On- Approach", 2014, ISBN:978 0996025515

**REFERENCE BOOKS:**

1. Adrian McEwen, "Designing the Internet of Things", Wiley Publishers, 2013, ISBN: 978-1-118-43062-0
2. Daniel Kellmerit, "The Silent Intelligence: The Internet of Things". 2013, ISBN 0989973700

**COURSE OBJECTIVES**

- To know the fundamental concepts of big data and analytics.
- To explore tools and practices for working with big data
- To learn about stream computing.
- To know about the research that requires the integration of large amounts of data.

**COURSE OUTCOMES**

Upon completion of the course, the students will be able to:

CO1: Work with big data tools and its analysis techniques

CO2: Analyze data by utilizing clustering and classification algorithms

CO3: Learn and apply different mining algorithms and recommendation systems for large volumes of data

CO4: Perform analytics on data streams

CO5: Learn NoSQL databases and management.

**Unit-I**

Evolution of Big data – Best Practices for Big data Analytics – Big data characteristics – Validating – The Promotion of the Value of Big Data – Big Data Use Cases- Characteristics of Big Data Applications – Perception and Quantification of Value -Understanding Big Data Storage – A General Overview of High-Performance Architecture – HDFS – MapReduce and YARN – Map Reduce Programming Model.

**Unit-II**

Advanced Analytical Theory and Methods: Overview of Clustering – K-means – Use Cases – Overview of the Method – Determining the Number of Clusters – Diagnostics – Reasons to Choose and Cautions .- Classification: Decision Trees – Overview of a Decision Tree – The General Algorithm – Decision Tree Algorithms – Evaluating a Decision Tree – Decision Trees in R – Naïve Bayes – Bayes’ Theorem – Naïve Bayes Classifier.

**Unit-III**

Advanced Analytical Theory and Methods: Association Rules – Overview – Apriori Algorithm – Evaluation of Candidate Rules – Applications of Association Rules – Finding Association& finding similarity – Recommendation System: Collaborative Recommendation- Content Based Recommendation – Knowledge Based Recommendation- Hybrid Recommendation Approaches.

**Unit-IV**

Introduction to Streams Concepts – Stream Data Model and Architecture – Stream Computing, Sampling Data in a Stream – Filtering Streams – Counting Distinct Elements in a Stream – Estimating moments – Counting oneness in a Window – Decaying Window – Real time Analytics Platform(RTAP) applications – Case Studies – Real Time Sentiment Analysis, Stock Market Predictions. Using Graph Analytics for Big Data: Graph Analytics.

**Unit-V**

NoSQL Databases : Schema-less Models: Increasing Flexibility for Data Manipulation-Key Value Stores- Document Stores – Tabular Stores – Object Data Stores – Graph Databases Hive – Sharding – Hbase – Analyzing big data with twitter – Big data for E-Commerce Big data for blogs – Review of Basic Data Analytic Methods using R.

**TEXT BOOKS:**

1. Anand Rajaraman and Jeffrey David Ullman, “Mining of Massive Datasets”, Cambridge University Press, 2012.
2. David Loshin, “Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph”, Morgan Kaufmann/El sevier Publishers, 2013.

**REFERENCES:**

1. EMC Education Services, “Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data”, Wiley publishers, 2015.
2. Bart Baesens, “Analytics in a Big Data World: The Essential Guide to Data Science and its Applications”, Wiley Publishers, 2015.
3. Dietmar Jannach and Markus Zanker, “Recommender Systems: An Introduction”, Cambridge University Press, 2010.
4. Kim H. Pries and Robert Dunnigan, “Big Data Analytics: A Practical Guide for Managers ” CRC Press, 2015.
5. Jimmy Lin and Chris Dyer, “Data-Intensive Text Processing with MapReduce”, Synthesis Lectures on Human Language Technologies, Vol. 3, No. 1, Pages 1-177, Morgan Claypool publishers, 2010.



## **COURSE OBJECTIVE**

- The course aims to provide an understanding of computer networks concepts like Wired and Wireless Network, it also imparts knowledge about routing algorithm, DNS, WWW and E-mail technologies.

## **COURSE OUTCOMES**

On successful completion of the course, the students will be able to

- CO1: Describe the uses of Computer Networks, and hardware and software needed for implementing Network
- CO2: Explain and illustrate the layers in OSI reference model
- CO3: Discuss the difference between guided transmission media and wireless transmission.
- CO4: Use Error detection and correction and explain sliding window protocol
- CO5: Use suitable routing algorithm and congestion control algorithm
- CO6: Discuss about transport layer and elements of transport protocols.
- CO7: Explain about DNS , E-mail and WWW

### **UNIT I**

Introduction: uses of computer networks - network hardware - network software -reference models - example networks - network standardization

### **UNIT II**

The physical layer: guided transmission media - wireless transmission – communication satellites - the public switched telephone network

### **UNIT III**

The data link layer: data link layer design issues - error detection and correction -elementary data link protocols - sliding window protocols

### **UNIT IV**

The network layer: network layer design issues - routing algorithms - congestion control algorithms- quality of service – internetworking

### **UNIT V**

The transport layer: the transport service - elements of transport protocols - a simple transport protocol the application layer: dns--domain name system - electronic mail – the world wide web

### **Text Book:**

Andrew S. Tanenbaum “Computer Network”, 4 th Edition,Prentice Hall, 2006.

UNIT 1: CHAPTER 1(Sec 1.1, 1.2, 1.3, 1.4, 1.5, 1.6)

UNIT 2: CHAPTER 2(Sec 2.3, 2.4, 2.5)

UNIT 3: CHAPTER 3(Sec 3.1, 3.2, 3.3, 3.4)

UNIT 4: CHAPTER 5(Sec 5.1, 5.2,5.3,5.4,5.5)

UNIT 5: CHAPTER 6(Sec 6.1,6.2,6.3,7.1,7.2,7.3)

### **Reference Book:**

1.Forouzan “Computer Networks”,Tata McGraw-Hill Education, 2012.

2. William Stallings, “Data and Computer Communications”, 6 th Edition, Prentice Hall of India, 2002.

**COURSE OBJECTIVES:**

- Usage of mobile devices have increased exponentially over the past decade. Most of the people have more than one mobile devices.
- The introduction of Smart Phones have created a new revolution in the telecommunication industry.

**COURSE OUTCOME**

- CO1: Define mobile technologies in terms of hardware, software, and communications.
- CO2: Utilize mobile computing nomenclature to describe and analyze existng mobile computing frameworks and architectures.
- CO3: Evaluate the effectiveness of different mobile computing frameworks.
- CO4: Describe how mobile technology functions to enable other computing technologies

**UNIT I: Mobile Network Architecture**

Wireless Communication Principles, Network Evolution, Radio Communication, Analog and Digital Communication, Computer Network, OSI Model, Mobile Network OSI layer functions, Mobile Network Protocol Layers, Telephony Networks, PSTN, Telecommunication Networks, Fixed Networks, Mobile Networks, Cellular Network Concepts, Cellular Networks, Cells and Base Stations, Frequency and Interface in Cells, Mobile Network Architecture, Wireless Network Generations, GSM, GPRS.

**UNIT II: Mobile Device Architecture**

Mobile Phone Evolution, Mobile Handset Characteristics, Bluetooth , Display, Keypad, Camera, Mobile Handset Categories, Handset Components, Handset Design, Handset hardware architecture, Elements inside a Mobile Handset, Hardware Architecture Evolution, Hardware architectural trends, CPU and Memory, Internal storage, Handset Power Requirements, Power Management, Introduction and Definition to the SIM, Functions and usage of the SIM, Phones without SIMs, Key Handset software components, Device Drivers.

**UNIT III: Mobile Application Development 9**

Mobile Application Development Paradigm, Mobile Programming Tools, Mobile Application Evolution, Thin Client, Fat Client, Future of Mobile App Development, Mobile Client Server App Architecture, Mobile App Programming in different languages, Mobile Programming best practices, Pros and Cons of Mobile Web App, SIM based Mobile App Development, SIM as a Platform, SIM as Service Differentiator, Evolution of Mobile Services, Types of Mobile Services, App Server, Mobile Context of AS, AS Deployment Architecture, App Server Layers.

**UNIT IV: Mobile Web Application**

World Wide Web, Web Application, Web Application Architecture, Web Server, Web Server Features, Web Application Server, Mobile Internet Access, Mobile Web browser Evolution, Mobile Web Development Approaches, Dynamic Content, RSS, Feed, Mobile Advertising Motivation, Dynamic Mobile Advertising, Web Service Architecture, Users on the Go, Best Development Practices.

**UNIT V: Mobile Operating System**

Introduction to Mobile Operating Systems and why they are needed, Open Platforms, Mobile OS Features, Symbian, BlackBerry, Android, iOS, Windows, Tizen, Ubuntu, etc.

**TEXT BOOKS:**

1. Wireless and Mobile Network Architectures by Yi-Bang Lin and Imrich Chlamtac, Wiley-India, 2008
2. Mobile Networks Architecture by Andre Perez, Wiley, March 2012
3. Mobile Computing – Technology, Application & Service Creation by Asoke. K Talukder, Roopa R. Yavagal, Asoke K. Talukder, Tata McGraw-Hill, 2005
4. GSM - Architecture, Protocols and Services by Jörg Eberspächer, HansJoergV ögel, Christian Bettstetter, Christian Hartmann John Wiley & Sons, Dec-2008
5. Mobile Handset Design by Sajal K. Das, John Wiley and Sons, 2010
6. Smart Phone and Next Generation Mobile Computing by Pei Zheng and Lionel M. Ni., Morgan Kaufmann, 2006. MOBILE COMPUTING

**COURSE OBJECTIVE**

- To introduce various Encryption and Authentication techniques for Network Security.

**COURSE OUTCOMES**

After Studying this course, Students should be able to:

- CO1: Identify Models of Network Security.
- CO2: Understand Number Theory, Authentication Requirements.
- CO3: Compare Authentication Applications

**UNIT I**

Model of network security – Security attacks, services and attacks – OSI security architecture – Classical encryption techniques – SDES – Block cipher PrinciplesDES – Strength of DES – Block cipher design principles – Block cipher mode of operation – Evaluation criteria for AES – RC4 - Differential and linear cryptanalysis – Placement of encryption function – traffic confidentiality.

**UNIT II**

Number Theory – Prime number – Modular arithmetic – Euclid’s algorithm - Fermet’s and Euler’s theorem – Primality – Chinese remainder theorem – Discrete logarithm – Public key cryptography and RSA – Key distribution – Key management – Diffie Hellman key exchange – Elliptic curve cryptography.

**UNIT III**

Authentication requirement – Authentication function – MAC – Hash function – Security of hash function and MAC – SHA - HMAC – CMAC - Digital signature and authentication protocols – DSS.

**UNIT IV**

Authentication applications – Kerberos – X.509 Authentication services - E-mail security – IP security - Web security.

**UNIT V**

Intruder – Intrusion detection system – Virus and related threats – Countermeasures – Firewalls design principles – Trusted systems – Practical implementation of cryptography and security.

**TEXT BOOK**

1. William Stallings, “Cryptography & Network Security”, Pearson Education, Fourth Edition 2010.

**REFERENCES**

1. Charlie Kaufman, Radia Perlman, Mike Speciner, “Network Security, Private communication in public world”, PHI Second Edition, 2002.
2. Bruce Schneier, Neils Ferguson, “Practical Cryptography”, Wiley Dreamtech India Pvt Ltd, First Edition, 2003.
3. Douglas R Simson “Cryptography – Theory and practice”, CRC Press, First Edition, 1995.
4. [www.williamstallings.com/Security2e.html](http://www.williamstallings.com/Security2e.html)
5. [www.ocw.mit.edu/OcwWeb/Electrical-Engineering-and-Computer-Science/6857Fall2003/Course Home /index.html](http://www.ocw.mit.edu/OcwWeb/Electrical-Engineering-and-Computer-Science/6857Fall2003/Course%20Home/index.html).



**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](mailto:mapin@icenet.net)(R)
  3. Brunner R.C. 1989, Hazardous Waste Incineration, McGraw Hill Inc 480 p
  4. Clark R.S. Marine Pollution, Clarendon 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>.

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**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), Thriftness (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 Khera
- 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 Dcca4e - 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.,) 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.