



## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF TAMIL**

**SYLLABUS**

இளங்கலைத் தமிழ்  
முன்றாம் ஆண்டு - ஆறாவது பருவம்

Pemiyam

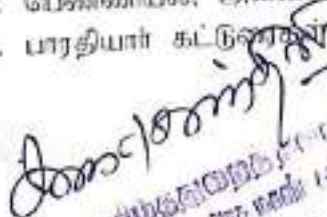
விருப்பப் பாடம் - தாள் -III பெண்ணியம்  
(அல்லது)

Inaiya Tamil Hakkiyam இணையத் தமிழ் இலக்கியம்

- கலகு - 1- பெண்ணியம் - விளக்க வரையறை - பெண்ணியத்  
தோற்றம், வளர்ச்சி, வரலாறு - இன்றைய நிலை - நோக்கும் -  
போக்கும்.
- கலகு - 2- மேலைநாட்டுப் பெண்ணியவாதிகள் - அவர்களது எழுத்தாக்கங்கள் -  
இந்தியப் பெண்ணிய வாதிகள் - இந்தியச் சமூகச் சீரமைப்பு  
இயக்கங்களும் பெண் மேம்பாட்டிற்கான செயலாடுகளும் -  
தமிழகத்துப் பெண்ணியவாதிகளும் அவர்களது இலக்கிய  
ஆக்கங்களும்.
- கலகு - 3- சங்க கால மகளிர் நிலை - பணிப் பகிர்வு - மனைவாழ்க்கை -  
விருந்தோம்பல் - உழத்தி - ஆயமகளிர், பூவிலைப் பெண்டிர், அரச  
மகளிர் - புலமை நலமிக்க பெண்புலவர்கள் - உமட்டியர் - சிறுகுறு  
தொழில் புரியும் மகளிர் - புறவாழ்வில் மகளிர் பங்கு - ஆடை,  
அணிகலன்கள், ஒப்பனைகள், கலைத்துறை நாட்டம் - மகப்பேறு -  
வாழ்வியல் அறங்கள் - பண்பாடு போற்றல்.
- கலகு - 4- பாரதியாரின், பெண் விடுதலை சார் கட்டுரைகள் பத்து யட்டும்.
- கலகு - 5- பெண் நலவாழ்வு சார் சட்டங்களும், பெண் நலம் பேணும் அரசின்  
கொள்கைகளும், செயல் திட்டங்களும் - மகளிரை மேம்படுத்துவதில்  
இக்காலத் தமிழ் இலக்கியங்களின் பங்கு.

சில்கள்:

1. பெண்ணியம், இரா. பிரேமா, சென்னை, தமிழ்ப் புத்தகாலயம்.
2. பெண்ணியல், அன்னை தேரசா மகளிர் பல்கலைக்கழக வெளியீடு.
3. பாரதியார் கட்டுரைகள்.

  
தமிழ்நாடு அரசு  
ம.பி.இந்தியா அரசு  
தமிழ்நாடு அரசு

தலை 18 : UTAEM - நாட்டுப்புறவியல் - (Elective - I)

தேர்வுகள்

1. நாட்டுப்புற இலக்கியங்களை அறிதல்
2. நாட்டுப்புற இலக்கியங்களை அறிதல்
3. நாட்டுப்புறக் கலைகளை அறிதல்
4. நாட்டுப்புற மக்களின் வாழ்நிலைகளை அறிதல்

அலகு - 1 நாட்டுப்புறவியல் வீணக்கம் - பண்புகள் - நாட்டுப்புற இலக்கிய வகைகள்  
 நாட்டுப்புறப் பாடல்கள்  
 நாட்டுப்புறக் கதைகள்  
 நாட்டுப்புறக் கதைப்படல்கள்  
 புறமொழிகள்  
 விடுகதைகள்

அலகு - 2 நாட்டுப்புறக் கவிதைப் பொருட்கள்  
 நாட்டுப்புற மருத்துவம் - புழங்கு பொருட்கள்

அலகு - 3 நாட்டுப்புற இலக்கியமும், எழுத்து இலக்கியமும் - ஒற்றுமை, வேற்றுமைகள்  
 புறமொழிகள் - எழுத்திலக்கியத்தில் நாட்டுப்புற இலக்கியத்தின் செல்வாக்கு

அலகு 4 நாட்டுப்புறக் கலைகள்

அலகு 5 விளையாட்டு, மொழிப்பாடல், சடங்குகள்

பாடநூல்:

க.சத்தியவேல், நாட்டுப்புறவியல் அடிப்பு - சென்னை, மணிவாசகர் புதினம்

மாணவ நூல்கள்:

அரு. இராசமுத்து (1968-69) தமிழக நாட்டுப்புறவியல் தொகுதி 1-10, சென்னை, மணிவாசகர் புதினம்

தமிழக நாட்டுப்புறக் கதைகள் தொகுதி 17, சென்னை, மணிவாசகர் புதினம்

*Handwritten signature and stamp:*  
 தமிழக நாட்டுப்புறவியல்  
 ம.வி. இராசமுத்து  
 திருச்சூர்



**இளங்கலைத் தமிழ்**  
**இரண்டாம் ஆண்டு - முன்றாம் பருவம்**  
**சார்புப் பாடம் III - தமிழக வரலாறும், பண்பாடும்**

- அலகு - 1: தமிழக நிலவியல் கூறுகள் - வரலாற்று மூலங்கள் - தொல் பழங்காலம் - பண்டைத் தமிழகம் - சிந்து வெளி நாட்கத் தொடர்பு - தமிழ் மொழியின் தோன்மை - கீழா அகழ்வாய்வுச் சான்றுகள் - மூச்சங்க வரலாறு - சங்க காலத் தமிழகமும், ஐவேந்தர் மரபும், குடகமும், தமிழகத்திற்கும் நத்த மோரியர்களுக்கும், ரோமானிய யவனருக்கும் உள்ள தொடர்புகள் கூல் வணிகம் - சங்க கால மக்கள் வாழ்க்கை, அரசியல், பொழுதுறை, சமூகச், கல்வி, கலைகள், பொருளாதாரம் - சடங்குகள் - சகுளங்கள் - நம்பிக்கைகள் - திருவிழாக்கள் - வழிபாடுகள்.
- அலகு - 2: சங்கம் மருவிய காலம் - களப்பிரர் வருகை - பல்லவர்கள் - முற்கால, இடைக்கால, பிற்காலப் பல்லவர்கள் ஆட்சி - குடைவரைக் கோவில்கள் - தோற்றம் - பத்தி இலக்கிய எழுச்சி - சைவ வைணவ பத்தி இயக்கம் - சமய அரசியல், பொருளாதார நிலை - கோயில் கட்டிடக் கலை வளர்ச்சி, மக்கள் வாழ்வியல் - கல்வி - பண்பாடு.
- அலகு - 3: சோழர் காலம் - பொற்காலம் - சோழர் சாளுக்கியர் உறவு நிலை - தென் கீழக்கு ஆசிய நாடுகளை வென்றமை - சோழர் ஆட்சி முறை - குடவோலை முறை - சோழர் காலச் சமூகப் பண்பாட்டு, அரசியல் சமயம், பொருளாதார நிலை - கலைகள் - கோயில்கள் தஞ்சைப் பெரிய கோயில் சார் கலைகள் பாண்டியர்களது எழுச்சி - சோழ - பாண்டியர் உறவு - அயல்தாட்டுப் பயணிகள் கண்ட தமிழகம் - நாயக்கர் காலம் - தமிழகத்தில் மாலிக் காபூர் படையெடுப்பு - விசய நகர ஆட்சியின் விளைவு - தஞ்சை மராட்டியர்கள் - கர்நாடக நவாபுகள் ஆட்சியில் தமிழகச் சூழல்.
- அலகு - 4: ஐரோப்பியர் வருகை - ஆற்காடு, தஞ்சை அரசர்களுடன் ஆங்கிலேயர் கொள்கை - பாளையக்காரர் எழுச்சி - கிழக்கிந்திய கம்பெனி அதிகாரம் - விடுதலைப் புரட்சி - கல்வி முறை - நீதி, நிர்வாக நடைமுறை.
- அலகு - 5: விடுதலைக்கு முந்தைய தமிழகம் இலக்கிய வளர்ச்சி - பத்திரிக்கை வளர்ச்சி - ஐரோப்பியரது தமிழ்த் தொண்டு - இந்திய விடுதலை இயக்கத்துக்குத் தமிழகத்தின் பங்கு - சமய, சமூகச் சீர்திருத்த இயக்கங்கள் - இந்திய விடுதலைக்குப் பின் தமிழகம் - மொழி வழி மாநில உருவாக்கம் - தமிழ் இயக்கங்கள் - சமூகப் பொருளாதார மாற்றங்கள் - தமிழ் இலக்கியப் போக்குகள் - தமிழ் இதழ்கள் நாடகக்கலை - திரைப்படங்கள், தமிழ் ஊடகங்கள், தமிழ் இசை எழுச்சி.

பாட நூல்:

கே. கே. பிள்ளை, தமிழக வரலாறும் பண்பாடும்

வே.தி. செல்லம், தமிழக வரலாறும், பண்பாடும்.

*(Handwritten Signature)*

பெரியகுடி கலைக் கல்லூரி  
 உயர்தரப் படிப்பிற்கான  
 தேர்வுக் குழு  
 பெரியகுடி



தூள்-41- UTAS64 - (Skill based Studies - IV) - இணையத் தமிழ் இலக்கியம்

நோக்கங்கள்:

1. இணையத் தமிழ் இலக்கியத்தை அறிமுகம் செய்தல்
2. இணைய மின் இதழ்களை அறிதல்
3. இணையத் தமிழ்த் தளங்களைக் கண்டறிதல்
4. பதிவேற்றம், பதிவிறக்கம் செய்ய அறிதல்

அலகு-1. இணையம் தேடுபொறி தமிழ் எழுத்துரு பதிவிறக்க முறைகள்

தமிழ்வுழி இணையத்துள் புகுதல்

அலகு-2. தமிழ் விக்சிபீடியா- விக்சனரி தமிழ் உள்ளடக்கப்

பதிவிறக்கம்- பதிவேற்ற தெரிகள்.

அலகு-3 தமிழில் மின்னஞ்சல் அனுப்புதல்-பெறுதல் -இணையத் தமிழ்த் தளங்கள்

பத்தினைக் கண்டறிதல்

அலகு-4 இணைய மின் இதழ்கள் ஐந்தினைப் பார்வையிடல்-அவ்விதழ்களின்

உள்ளடக்கம் பற்றி ஐந்து பக்கங்களுக்கு எழுதிச் சமர்ப்பித்தல்

அலகு-5 இணைய மின் நூலகங்கள் ஐந்தினை அறிதல்-இணைய நூலகங்களில்

ஒரு தமிழ் நூலைத் தேடிக் கண்டறிந்து பதிவிறக்கம் செய்ய அறிந்திருத்தல்

பாடநூல்-

டாக்டர் இராதா செல்லப்பன்-தமிழும் கணினியும்-கவிதை அமுதம் வெளிஸ்டு  
திருச்சி.

பார்வை நூல்

துறை, மணிகண்டன் - தமிழ்ச் கணினி இணையப் கச்ச ஈங்கலை மணலினி பதிவகம்

  
ம. சந்திரன்  
ம. சந்திரன்  
ம. சந்திரன்

தான் 25 : UTAE-42 - இதழியல் - (Elective - II)

நோக்கங்கள்:

1. இதழியல் பற்றி அறிமுகம் செய்தல்.
2. இதழ்கள் நடத்தும் முறைகளை அறிதல்.
3. இதழியல் சட்டங்கள் மற்றும் கநந்திரம் பற்றி அறிதல்.
4. இதழியலாளர்கள், உருவாக்கும் தகுதிகளைப் பெறுதல்.

- அலகு - 1 இதழியல் - நோர்மம் - வகைகள் - வளர்ச்சி தீர்மானம் நிலை - இ இதழ்கள் - தமிழ் இதழ்கள் - வளர்ச்சி ஏராளம் - தமிழ் இதழாளர் விருவிக அறிமுக அண்ணா - பெரியார் - சி.பா. ஆதித்தனார் - ஏ.என். பிரபாகர் - சி.என். ஐந்திரமணி - கல்வி ஏ.என். அண்ணா வாயன் - தமிழ்நாளை தமிழ் தலைக்கிய இதழாளர்கள்.
- அலகு - 2 செய்தி மூலங்கள் - செய்தி சேகரித்தல் - செய்தி நிறுவனங்கள் - நி தகுதிகள் - கடமைகள்.
- அலகு - 3 செய்தி கட்டமைப்பு - தலைப்பு - முதல் பத்தி - உடல் பகுதி - தா - செய்தி வகைகள் - பக்க அமைப்பு
- அலகு - 4 பதிப்பாளியர் - ஆசிரியர் குழு - இதழ் நிர்வாகம் - விளம்பரங்கள் - வாசகர் கடிதம்
- அலகு - 5 இதழியல் சட்டங்கள் - இதழியல் கநந்திரம் - இந்திய விருதலைக்கு 2 பங்கு - இன்றைய தமிழ் இதழ்களின் நோக்கம் போன்றும்.

பாடநூல்:

1. மா.பா.குருசாமி - இதழியல் கலை.திண்டுக்கல், குரு பதிப்பகம்
2. மா.க.சாம்பத்தன் - தமிழ் இதழியல் ஏராளம், சென்னை, ஐந்திரமணி பதிப்பகம்

பார்வை நூல்கள்:

- அ.ஆலிஸ் - இதழியல் - தகவலியல் அகராதி, திருச்சி

*சா.சா.சா.சா.சா.*  
 கயிலாசுலாட்சுமி  
 மா.பா.குருசாமி  
 திருச்சி

நாள் 34 : UTAS53 - கல்வெட்டியல்

(Skill based studies - III)

தொக்கங்கள்:

1. கல்வெட்டியல் குறித்த அறிஞரின் பெறுதல்
2. கல்வெட்டுக்களின் வகைகளை அறிதல்
3. கல்வெட்டு, செப்பேடு, சாசனம், மெய்கீர்த்தி வற்றும் பதிவு வகைகளை உணர்தல்
4. சேர, சோழ, பாண்டியர் காலத்து அரசியல், சமூக நிகழ்வுகளை அறிதல்

அலகு - 1 கல்வெட்டுக்கள் - நடுகல் - கல்வெட்டுக்களின் வகைகள் - தொக்கம் - தமிழ் கல்வெட்டுக்களின் தோற்றம், வளர்ச்சி, வரலாறு

அலகு - 2 கல்வெட்டுத் தமிழ் - பிராமிக கல்வெட்டு - குடைக் கல்வெட்டு - கல்வெட்டுகள் - செப்பேடுகள் - சாசனங்கள் - மெய்கீர்த்திகள் - பதிவு செய்ய செய்திகள்

அலகு - 3 பழங்காலக் கல்வெட்டுச் செய்திகள்

அலகு - 4 சோழர் காலக் கல்வெட்டுச் செய்திகள்

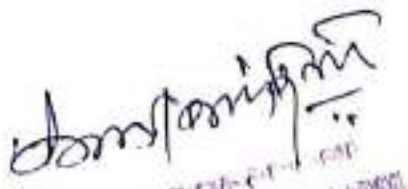
அலகு - 5 பிற்காலக் கல்வெட்டு ஆவணங்கள் - தமிழகக் கல்வெட்டியல் துறை வெளியீடுகள்

பாடநூல்:

தமிழகக் கல்வெட்டியல் துறை ஆவண வெளியீடுகள்

பார்வை நூல்:

இரா.நாகபாபி, தமிழகக் கல்வெட்டுகள், சென்னை, கல்வெட்டியல் துறை வெளியீடு

  
தமிழ்நாடு  
உய. அறிவுறுத்தல்  
உய. அறிவுறுத்தல்  
உய. அறிவுறுத்தல்  
உய. அறிவுறுத்தல்



நாள் 27 : UTAS42 - கலைச் சொல்லாக்கமும் தொழில்நுட்பத்தமிழும்

(Skill Based Studies - II)

நோக்கங்கள்:

1. கலைச் சொல்லாக்கம் குறித்து அறிமுகம் செய்தல்
2. கலைச் சொல்லாக்க முறைகளை அறிதல்
3. ஊடகங்கள் குறித்து அறிதல்
4. தொழில் நுட்பத் தமிழ் குறித்து உணர்தல்

அலகு - 1 கலைச் சொல் விளக்க வரையறை தொழில்நுட்பத்தில் புத்த சொற்களை உருவாக்கும் அலகியல் - ஐதாசின் தொழில்நுட்ப விதிகள்

அலகு 2 தமிழக கலைச் சொல்லாக்க முறைகள்

அலகு 3 அறிவியல் கலைச் சொல்லாக்க விதிமுறைகள்

கலைத்துறை கலைச் சொல்லாக்க விதிமுறைகள்

அலகு - 4 ஊடகங்களும் தொழில் நுட்பத் தமிழும் - அச்ச ஊடகம் - பின் ஊடகம் - வானொலி - தொலைக்காட்சி - திரைப்படம் - தொலைபேசி - தொலைநகல் செயற்கைக் கோள் - கணினி - இணையம் - வலைதளம் - முகநூல் - மின்னஞ்சல் - டைமேன் - பிற சாதனங்கள்.

அலகு 5 அவரன் பாடத் துறை சார்ந்த பத்து தொழில் நுட்பச் சொற்களுக்கு நக்க தமிழ்க் கலைச்சொற்களை உருவாக்குதல்

பாடநூல்

முனைவர் இராஜா செல்லப்பன், கலைச்சொல்லாக்கம் - திருச்சி, கனி அமுதம் வெளியீடு

பார்வை நூல்:

செள.மதுன் ஹாஜி, பண்பாட்டியல் தமிழ், சென்னை, நியூ செஞ்சரி பப். ஹவுஸ்

  
பாடநூலாசிரியர்  
கலைச்சொல்லாக்கம்  
சென்னை

இளங்கலைத் தமிழ்  
இரண்டாம் ஆண்டு - நான்காம் பருவம்

Job Oriented Course  
Paper - II- Language Skills -  
பணி சார் பாடம் - மொழித் திறன் -II  
தான் - மொழி பெயர்ப்பியல்

அலகு - 1 மொழிபெயர்ப்பு - மூலமொழி - இலக்கு மொழி - மொழிபெயர்ப்பின் தேவையம்,  
பயனும் - மொழிபெயர்ப்பானது தகுதிகள் - தமிழ் மொழி பெயர்ப்பின் வரலாறு.

அலகு - 2 மொழிபெயர்ப்பு வகைகள் -

முழுநிலை மொழிபெயர்ப்பு -  
பகுதி நிலை மொழிபெயர்ப்பு -  
கொல் தேர் மொழிபெயர்ப்பு -  
கட்டிடம் மொழிபெயர்ப்பு -  
நடுவல்

அலகு - 3 படைப்பில்லக்கிய மொழிபெயர்ப்பு -  
கவிதை, கதை, கட்டுரை

அறிவியல் மொழிபெயர்ப்பு -  
மருத்துவ நூல்கள் மொழிபெயர்ப்பு

அலகு - 4 மொழிபெயர்ப்பு முறைகள் - மொழிபெயர்ப்புக் கருவிகள் - மொழிபெயர்ப்புச் சிக்கல்கள்

அலகு - 5 மொழிபெயர்ப்புப் பயிற்சி - உரைநடை, கதை

இந்து ஊக்கியங்கள் தந்து தமிழிலிருந்து ஆங்கிலத்துக்கு மொழி பெயர்க்கச் செய்தல்  
இந்து ஊக்கியங்கள் தந்து ஆங்கிலத்திலிருந்து தமிழுக்கு மொழி பெயர்க்கச் செய்தல்

பாடநூல்கள்:

1. ஊர்மதி, மொழிபெயர்ப்பியல்
2. க. சண்முக வேணயதம், மொழிபெயர்ப்பியல்
3. சா. மட்டப்பிரமன் - மொழிபெயர்ப்புக் கலை
4. சேதுமணி மணியன் - மொழிபெயர்ப்பியல் கோட்பாடு
5. தா. முகமது சேரிப் - மொழிபெயர்ப்பு வழிகளும் வாய்ப்புகளும்

  
தமிழ்நாடு மொழிபெயர்ப்பு  
ம.பி. 1977-78 ஆம் ஆண்டு  
தேசியம்.

தாள்: 7 சுற்றுலாவியல்  
(SBE)

சுற்றுலாவியல் - விளக்க வரையறை - சுற்றுலா வளர்ச்சி வரலாறு

சுற்றுலா வகைகள் - ஓய்வுச் சுற்றுலா - கல்விச் சுற்றுலா - ஆன்மீகச் சுற்றுலா - விடுமுறைச் சுற்றுலா, சுற்றுலாவும் பொருளாதார வளர்ச்சியும் - தேசிய வருவாய் பெருக்கம் - வேலைவாய்ப்பு - சுற்றுலா சார்ந்த துறை வளர்ச்சி

இந்தியாவில் சுற்றுலா - சுற்றுலாத் தலைங்கள் - சுற்றுலாத்துறை - சுற்றுலா மேம்பாட்டுத் திட்டங்கள் - சுற்றுலாவும் சூழல் பாதுகாப்பும்

பயிற்சி - புகழ்பெற்ற சுற்றுலாத் தலைங்கள் பற்றி அறிதல் - பக்தி இலக்கியங்கள் - நாயன்மார்கள் - ஆழ்வார்கள் ஆன்மீகத் தலைங்களை நாடிச் சென்று வழிபட்ட பாங்கினை எழுதுதல்.

ஆர். சாந்தகுமாரி, சாந்தா பப்ளிகேஷன்ஸ், சென்னை

தாள்: 8 விரிவாக்கச் செயல்பாடுகள்  
(NSS, NCS, SPORTS,...)

விருப்பப்பாடங்கள் பட்டியல்

மட்டுப்பற்றவியல்

வகைகள்

பியம் அறிமுகம்

லக்கிய வரலாறு

லக்கிய வரலாறு

டயியல்

  
தமிழ்நாடு பல்கலைக்கழகம்  
ம.வி.முத்தையா அரசு மேல்நிலைப்பள்ளி  
தருமங்குடி



தான் 19 : UTAN31 - பன்னிளாய்ப்புத் தமிழ் - (Non major Elective - Course - I)

தேர்வுக்கள்:

1. தமிழ் மொழியின் அடிப்படை இலக்கணம் அறிதல்
2. சொற்களின் இயல்பு மற்றும் வகைகளை அறிதல்.
3. பயன்பாட்டுத் தமிழ் அறிந்து தேர்தல்
4. பெயர்மொழி, எழுத்துமொழி, இலக்கிய மொழி அறிவு பெறுதல்

அலகு - 1 தமிழ் மொழியின் அடிப்படை இலக்கணம் - எழுத்து சொல், சொற்கள், மொழி, அடை இலக்கணம்.

அலகு 2 தமிழ்ச் சொற்கள் - பெயல், வினை, இடை, உயிர்சொல் - இயற்றொழி - திணைப்பொழி - நிமிசொழி - வடமொழி - பகுபதம் - பன்மபதம் - அடிச்சொல் - வேர்ச்சொல் - பழனி விஞ்ஞாபி - சத்தி - சாஸித்ய - உருபுகள்.

அலகு 3 9 பள்ளிதலை - அறிவை - மால் - மணி - இடம் - இடையடி - தமிழ்ச் சொல் வகைகள் - எழுலாய - பன்மை - செய்ப்புமொழிகள் - ஒழுகுத்தா ஒரு மொழி ஒரு சொற்கள் பன்மொழி.

அலகு 4 உலக வழக்கு - பெயர் வழக்கு - பெயர் மொழி - எழுத்துமொழி - மொழி சொற்கள் - வினைத் தொழில் - தேர்வுற்று - அடிநிலைற்று

அலகு 5 புறப் பெற்ற இலக்கியம் சார்ந்த தரவுகள் - தொல்காப்பியம் - சங்க இலக்கியம் - அறு இலக்கியம் - தமிழ்ச் காப்பியம் - பத்தி இலக்கியம் - சிறந்த இலக்கியம் - இக்கால இலக்கியம் - (இலக்கிய நூல் - பாடிமொழி - மொழிமொழி - ச சைவக்கம் - சிறந்த மொழிமொழி உண்டிதழ் அனைத்துத் தருக்கவாகத் தெரிந்திருத்தல் வேண்டும்.

பாடநூல்:

சென. மதன் எழுதின - பன்மொழித்தமிழ் - 1995 - திபு செஞ்சி புக் ஹவுஸ் வெளியீடு

பார்வை நூல்:

மு. வரதராஜன், தமிழ் இலக்கிய வரலாறு, புத்தலிணி, சாமித்திய அகாடெமி வெளியீடு

தமிழன்மை - புதிய மொழியில் தமிழ் இலக்கிய வரலாறு

*(Handwritten signature)*  
ம.சி.சுந்தரன்  
தமிழ்நாடு

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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF ENGLISH**

**SYLLABUS**

M. V. MUTHIAH GOVERNMENT ARTS  
COLLEGE FOR WOMEN, DINDIGUL

PG & RESEARCH DEPARTMENT OF ENGLISH

CROSSCUTTING ISSUES



Course Code	P21ENT15	WOMEN'S WRITING			
CORE- V		L	T	P	C
		5	-	-	4
<b>Cognitive Level</b>	K1: Knowledge K2: Understand K3: Apply K4: Analyze K5: Evaluate K6: Create				
<b>Learning Objectives</b>	<b>The Course aims to</b> <ul style="list-style-type: none"> <li>• make students understand Gender and Women's Studies as an academic field of study</li> <li>• be familiar with its major concepts, history, assumptions, and theories/theorists, and recognize its epistemological and methodological diversity and character.</li> <li>• analyze the ways in which societal institutions and power structures impact the material realities of women's lives.</li> <li>• evaluate information derived from various women's writing.</li> <li>• interpret information from a variety of sources including Print and electronic media, film, video, and other information technologies and Cater to the needs of women in Society proactively.</li> </ul>				

**Unit – I: Poetry:**

Judith Wright – Woman to Child, Legend

Maya Angelou – Phenomenal Woman

Elizabeth Barrett Browning –How do I love thee?

Anne Finch – How shall I woo thegentlest

P.K. Page – Adolescence

**Unit – II: Prose:**

Virginia Woolf – A Haunted House

Meena Alexander – Fault Lines

Bessie Emery Head – Heaven is not closed

**Unit – III: Drama:**

Charlotte Keatley – My Mother said I never should

**Unit – IV: Fiction:**

Miles Franklin – My Brilliant Career

**Unit – V: Criticism:**

Simon de Beauvoir –The Second Sex – “History” from Volume – I

John Stuart Mill – On the Subjection of Women

**Books for Reference:**

1. Kuumba, M. Bahati. (2003). “Gender and Social Movements”. Rawat Publications, New Delhi.
2. Peterson, H. Linda. The Cambridge Companion to Victorian Women’s Writing. Cambridge University Press. 2015.

**E- Reference:**

<https://books.google.co.in/books?id=7ZTCgAAQBAJ&pg=PP1&pg=PP1/v=onepage&q&f=false>

**COURSE OUTCOME**

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

K1,K2	CO1	gain knowledge of the literary texts across genres, historical periods and cultural contexts
K1,K2	CO2	understand the range of feminist perspectives, towards the gender issues
K3,K4	CO3	analyze the common and particular challenges that women face
K4,K5	CO4	evaluate the standards of the society and the result of them on the womenfolk
K3,K6	CO5	become creative writers and voicing out their views

  
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Course Code	P21ENT24	SUBALTERN LITERATURE			
CORE IX		L	T	P	C
		5	-	-	4
<b>Cognitive Level</b>	K1: Recall K2: Understand K3: Apply K4: Evaluate K5: Analyze K6: Create				
<b>Learning Objectives</b>	Course aims to <ul style="list-style-type: none"> <li>• have a wider knowledge of the trials and tribulations endured by downtrodden people</li> <li>• enhance their ability to read text analytically to understand the social discrimination</li> <li>• cultivate ability to analyze the elements and strategies of various genres</li> <li>• comprehend literary writing as a platform for recording the voice of the voiceless</li> <li>• evaluate the power of creative writing as a means to recover and to redeem one to get better job.</li> </ul>				

**Unit - I: 20<sup>th</sup> Century**

John Betjeman-A Subaltern's Love Song  
 Gabriel Okara -Once upon a Time  
 MervynGooneratne -There was a Country  
 Langston Hughes-The Negro Speaks of Rivers

**Unit - II: Middle Age**

Chinua Achebe- "The Trouble with Nigeria" (pp. 22 – 64) from An Image of Africa  
 Homi.K. Bhabha -The Location of Culture  
 DipeshChakraborty-A Small History of Subaltern Studies: 2000 from Habitation of modernity: Essays in the Wake of Subaltern Studies. (pp3-19)  
 Nadine Gordimer - Once Upon a Time  
 BaburaoBagul- Mother

**Unit - III: Drama**

George Ryga -The Ecstasy of Rita Joe

**Unit – IV: Fiction**

BapsiSidhwa -The Crow Eaters



Course Code	P21ENT24	SUBALTERN LITERATURE	L	T	P	C
CORE IX				5	-	-
Cognitive Level		K1: Recall K2: Understand K3: Apply K4: Evaluate K5: Analyze K6: Create				
Learning Objectives		Course aims to <ul style="list-style-type: none"> <li>• have a wider knowledge of the trials and tribulations endured by downtrodden people</li> <li>• enhance their ability to read text analytically to understand the social discrimination</li> <li>• cultivate ability to analyze the elements and strategies of various genres</li> <li>• comprehend literary writing as a platform for recording the voice of the voiceless</li> <li>• evaluate the power of creative writing as a means to recover and to redeem one to get better job.</li> </ul>				

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 Nadine Gordimer - Once Upon a Time  
 BaburaoBagul- Mother

**Unit - III: Drama**

George Ryga -The Ecstasy of Rita Joe

**Unit - IV: Fiction**

BapsiSidhwa -The Crow Eaters



**Unit - V: Postcolonial Age**

GayathriSpivak - Can the Subaltern Speak?

Richard Wright - Blue Print for Negro Writing

**Reference:**

1. Deivasigamani. T. Subaltern Discourses. MJP Publisher. 2019.
2. Morris, Rosalind. Can the Subaltern Speak?: Reflections on the History of an Idea. Columbia University Press. 2010.

**E-Reference:**

1. <https://books.google.co.in/books?id=TzmbDwAAQBAJ&lpg=PP1&pg=PP1#v=onepage&q&f=false>
2. <https://books.google.co.in/books?id=cXInuU4BUDYC&lpg=PP1&pg=PP1#v=onepage&q&f=false>

**Course Outcomes**

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

K1,K2,K4	CO1	gain knowledge of the marginalized, oppressed and exploited on the cultural, political, social and religious grounds
K3,K4,K5	CO2	comprehend the themes such as oppression, marginalization, gender discrimination, subjugation of lower and working classes
K2,K4,K3	CO3	analyzethe condition of the third world countries and the marginalized groups in the society
K1,K2,K3,K4	CO4	evaluate the political and cultural autonomy of the people who were subdued in colonial domains, as reflected in literature
K4,K5, K6	CO5	imbibe social consciousness of the plight of the underprivileged people and working for their welfare

**Outcome Mapping**

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	S	S	S	S	S	S	S	S	M
CO2	S	S	S	S	M	S	S	S	S	M	S	M
CO3	S	S	S	S	M	S	S	S	S	S	M	M
CO4	S	S	S	S	M	S	S	S	S	M	M	S
CO5	S	S	S	S	S	S	S	S	S	S	M	S

Strongly Correlating (S)

Moderately Correlating (M)

Weakly Correlating (W)

No Correlation (N)

3 Marks

2 marks

1 Mark

0 mark

**MOTHER TERESA WOMEN'S UNIVERSITY**  
**KODAIKANAL**  
**PG – COMMON PAPER – WOMEN EMPOWERMENT**

COURSE CODE	P21WSS33	WOMEN EMPOWERMENT				L	T	P	C
<b>SUPPORTIVE SKILL - III</b>						2	-	-	2
<b>Cognitive Level</b>	K2 – Understand    K3 – Apply    K4 – Analyze    K5 – Evaluate    K6 – Create								
<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>➤ To know the Course Objectives types, determinants of women Empowerment.</li> <li>➤ To learn the various national and international agencies for women empowerment.</li> <li>➤ To uplift women in socially, economically and politically as empowered.</li> <li>➤ To make aware of women rights and enhance their life</li> <li>➤ To know the women entrepreneurship development in India</li> </ul>								

**Unit 1: Fundamentals of Women's Studies**

Meaning and Definition of the concept of Women's studies - Need and Scope - Women's studies as an academic discipline - Women's Studies – theories and Achievements- International Women's Year 1975 - International Women's Decade 1975 -1985; Towards Equal Status 1976 – Current trends-Importance of women's education – Efforts of various Committees –Life Skill Education to build capacity - Education as a tool of Women Empowerment - Obstacles to Women Education – Social, Economic, Cultural and other factors, limitations of Formal system of education-Role of educational institutions, Parents and Community.

**Unit 2: Issues of Women**

Girl Children and Women in Society: Social Networking- Influencing factors of Social Networking-Types of Social Networking- impact and consequences of networking- Remedial measures and strategies for solution- NCW: Initiatives to overcome Women's issues - Ministry of Home Affairs and Networking with State Women Commissions: Cyber Crime Prevention against Women and Children (CCPWC)-challenges - efforts & effective measures to prevent crime against women and children - create awareness for social issues. Motherhood - Single Parent - Widows – Multiple Roles of Women - Role conflict, Role change - Social Responsibility and Gender Empowerment.

**Unit 3: Achievement and Rights of Women**

Gender Equality: Achievement of Women - Educational, Political, Economic, Social - Panchayat Raj - Political role and participation - National and International Levels; Women's Rights - Property Rights - Redressal mechanism at different levels - Rights of Women with Disability: Case Studies on Women Achievers in the field of politics, education, arts science, law etc.



#### Unit 4: Empowerment of Women

Empowerment of Women: Alternative approaches - Women in Development (WID) - Women and Development (WAD) - Women's Development- Definition, Meaning and Scope, Gender and Development (GAD), Human Development Index (HDI) vs Gender Development Index (GDI).  
Types of Empowerment: Social, Educational, Political, Economical, Legal to Holistic levels-Role of Govt. and NGOs - Help line numbers in promoting women's empowerment - National and International Funding Agencies in promoting research on women.

#### Unit 5: Women Entrepreneurship

Women Entrepreneurship:- Types of Entrepreneurs Opportunities and Risk - Push and Pull Factors -financial Assistance and credit facilities- Micro finance- Entrepreneurship Skill and Competencies - Women Entrepreneurship Development in India: TRYSEM - NABARD - MMEW - Support to STEP - TREAD - Rural Entrepreneurship Development Programme - Gramina Bank -Mahila bank and supportive measures- Industrial Development Bank of India (IDBI) - Small Industries Development Bank of India-SHG and Entrepreneurship opportunities -

#### References

1. Rani Sandhya, "Development of Women - Issues and Challenges", Discover Publishing House Pvt Ltd, New Delhi, 2012.
2. Anil Kumar Jha, "Gender Inequality and Women Empowerment", Axis Books, New Delhi, 2012.
3. NandalSantosh, "Women and Development", A Mittal Publications, New Delhi, 2012
4. RaoPulla, "Political Empowerment of Women in India - Challenges and Strategies", ABD Publishers, New Delhi, 2012.
5. Jenny Edwards, Andrea Cornwall, et al., "Feminisms, Empowerment and Development: Changing Women's Lives", Kindle Edition, 2014.
6. Elson Diane, et al. "Gender Equality and Inclusive Growth: Economic Policies to Achieve Sustainable Development", UN Women, 2019
7. Priyanka Sharma Gurnani, "Women Entrepreneurship - Emerging Dimension of Entrepreneurship in India" Educreation Publishing House, New Delhi, 2016.

#### Course Outcome

On successful completion of the course teacher educators will be able to

- CO1: gain knowledge about the concept, need and scope of women's studies.
- CO2: acquaint and analyze issues of women in various contexts.
- CO3: understand changing role of women in society and issues related to it.
- CO4: understand the importance of women's education.
- CO5: comprehend empowerment of women and their achievement.

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Course Code	P21ENE412	PRESENTATION SKILLS			
ELECTIVE I-Option-2		L	T	P	C
Cognitive Level	K1: Recall K2: Understand K3: Apply K4: Evaluate K5: Analyze K6: Create	4	-	-	4
Learning Objectives	The course aims to <ul style="list-style-type: none"> <li>consider ways of grabbing the listener's attention, holding their interest, and concluding strongly.</li> <li>use body language and tone of voice to enhance their presentations.</li> <li>market the skill of presentation to fix themselves in better jobs</li> <li>use slides and visual aids effectively.</li> </ul>				

**Unit – I: Speech Format**

- Welcome Address
- Vote of Thanks
- Keynote Address
- Convocation Address

**Unit – II: Types of speech**

- Great Speeches (any 3)
- Soliloquies/ Monologues (any 3)
- Great Poems (any 3)

**Unit – III: Effective writing**

- Motivational Writing
- Argumentative Writing

**Unit – IV: Kinds of Writing**

- Narrative Writing
- Descriptive Writing

**Unit – V: Literary Adaptation**

- Conversion of a Story into Drama
- Conversion of a Drama into a Story



**Book Recommended:**

Brown Michael: Making Presentations Happen. Allen &amp; Unwin, Australia, 2004.

**Course Outcomes**

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

K1,K2,K4	CO1	gain knowledge of the various modes of official correspondence and presentation
K3,K4,K5	CO2	comprehend the right use of English at official works
K2,K4,K3	CO3	apply the acquired styles of occupational skills and practising them
K1,K2,K3,K4	CO4	pick up the official behaviour and becoming better doers
K4,K5, K6	CO5	market the skill business correspondence and fixing themselves in better jobs

**Outcome Mapping**

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	S	S	S	S	S	S	S	S	M
CO2	S	S	S	S	M	S	S	S	S	M	S	M
CO3	S	S	S	S	M	S	S	S	S	S	M	M
CO4	S	S	S	S	M	S	S	S	S	M	M	S
CO5	S	S	S	S	S	S	S	S	S	S	M	S

Strongly Correlating (S)

Moderately Correlating (M)

Weakly Correlating (W)

No Correlation (N)

- 3 Marks
- 2 marks
- 1 Mark
- 0 mark

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Course Code	P21ENE422	ENGLISH LANGUAGE TEACHING			
Cognitive Level		L	T	P	C
Elective II (OPTION - II)		4	-	-	4
Learning Objectives	<p>K1: Recall K2: Understand K3: Apply K4: Evaluate K5: Analyze K6: Create</p> <p>Course aims to</p> <ul style="list-style-type: none"> <li>gain knowledge of the various aspects of the language</li> <li>comprehend the different roles played by the English language in all spheres of life</li> <li>analyze the impact of English at different socio-political levels genres</li> <li>evaluate the quality of teaching English in India and other countries as well</li> <li>analyze and find out innovative methods of teaching English in India</li> </ul>				

**Unit - I: Concept of English**

English as an International, Colonial and National Language  
English in Post- Independence India

**Unit - II: Aims of teaching English**

Objectives of Teaching English  
Practical Use of English

**Unit - III: Methods of teaching**

The Direct Method  
The Reading Method  
The Army Method

**Unit - IV: Methodology**

The Oral Approach  
Situational Language Teaching  
Structural Approach  
Total Physical Response  
The Silent way

**Unit - V: Scope of Teaching**

Language Pedagogy and the Teaching of English  
Community Language Teaching  
Use of ICT in ELT  
Modern Applied Linguistics



**Books for Reference:**

1. N.Krishnaswamy & Lalitha Krishnaswamy, Teaching English: Approaches, Methods and Techniques, Macmillan. 2003.
2. Kripa K. Gautam, English Language Teaching: A Critical Study of Methods and Approaches. New Delhi: Harman Publishing House, 1988.
3. Harold B Allen. Teaching English as a Second Language. Bombay: Tata McGraw Hill Publishing Company, 1965.

**Course Outcome**

At the end of the course, the students will be able to:

K1, K2	CO1	gain confidence and will be able to be assertive with the skilful acquisition of language and communication skills.
K1, K2	CO2	overcome the fear of learning a second language or a foreign language and equip themselves
K5, K4	CO3	demonstrate how technology can be used for learning the language.
K5, K1	CO4	identify and classify strategies to teach language
K6, K3	CO5	analyze and find out innovative methods of teaching English in India

**Mapping of COs with POs & PSOs:**

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	M	S	M	M	S	S	S	S	S	S	M
CO2	S	S	S	S	S	S	S	S	S	S	S	M
CO3	S	M	S	M	S	S	S	S	S	S	S	S
sCO4	S	S	S	S	M	S	S	S	S	S	M	M
CO5	S	M	S	M	S	S	S	S	S	S	M	M

Strongly Correlating (S)

Moderately Correlating (M)

Weakly Correlating (W)

No Correlation (N)

3 Marks

2 marks

1 Mark

0 mark

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2	2	Chapter 1: The Role of the Teacher
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4	4	Chapter 3: The Role of the Parent
5	5	Chapter 4: The Role of the Community
6	6	Chapter 5: The Role of the Government
7	7	Chapter 6: The Role of the Media
8	8	Chapter 7: The Role of the Church
9	9	Chapter 8: The Role of the Family
10	10	Chapter 9: The Role of the School
11	11	Chapter 10: The Role of the Society
12	12	Chapter 11: The Role of the Culture
13	13	Chapter 12: The Role of the Religion
14	14	Chapter 13: The Role of the Environment
15	15	Chapter 14: The Role of the Technology
16	16	Chapter 15: The Role of the Education
17	17	Chapter 16: The Role of the Health
18	18	Chapter 17: The Role of the Economy
19	19	Chapter 18: The Role of the Politics
20	20	Chapter 19: The Role of the Law
21	21	Chapter 20: The Role of the Arts
22	22	Chapter 21: The Role of the Sports
23	23	Chapter 22: The Role of the Media
24	24	Chapter 23: The Role of the Culture
25	25	Chapter 24: The Role of the Religion
26	26	Chapter 25: The Role of the Environment
27	27	Chapter 26: The Role of the Technology
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39	39	Chapter 38: The Role of the Technology
40	40	Chapter 39: The Role of the Education
41	41	Chapter 40: The Role of the Health
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43	43	Chapter 42: The Role of the Politics
44	44	Chapter 43: The Role of the Law
45	45	Chapter 44: The Role of the Arts
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47	47	Chapter 46: The Role of the Media
48	48	Chapter 47: The Role of the Culture
49	49	Chapter 48: The Role of the Religion
50	50	Chapter 49: The Role of the Environment
51	51	Chapter 50: The Role of the Technology

**THE ROLE OF THE TEACHER**

The teacher is a professional who is responsible for the education and development of their students. They are expected to have a deep understanding of their subject matter and to be able to communicate this knowledge effectively to their students. The teacher's role is to create a supportive learning environment where students can thrive and reach their full potential.

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## SEMESTER III

### NON MAJOR ELECTIVE

Code :UENN31 GENERAL APPLICATION SKILLS IN ENGLISH USAGE 2Hrs/2Credits

#### OBJECTIVES

1. To learn the general application skills in English usage.
2. To familiarize the basic structures of English and develop application skills.
3. To prepare the students for Competitive Exams.
4. To enable the students speak and write in English fluently on various topics

#### UNIT I

Language for Everyday Use

Getting information from maps, graphs and tables

#### UNIT II

Using Dictionary – Thesaurus

#### UNIT III

Situational use of language – At the Bank, At the Railway Booking Counter, At the Post Office

#### UNIT IV

Introducing self and others

#### UNIT V

Note – making

The importance of Note- making When, why and How to make notes Diagrams and Charts in Note – Making

  
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**Reference Books-** G. Radhakrishnan pillai: Emerald English grammar & usage

S.R. Inthira and V. Saraswathi: Enrich your English- Academic Skills workbook, Book: CIFL, Hyderabad

## SEMESTER III

Code: UENS31

### SBS – BUSINESS ENGLISH COMMUNICATION 2Hrs/2Credits

#### OBJECTIVES

1. To introduce students the Business English Communication.
2. To orient the students to develop the communication skills.
3. To prepare the students for Competitive Exams.
4. To enable the students speak and write in English fluently on various topics

#### UNIT I

Communication: Meaning, Relevance and Practice  
Information Flow: Communication and Organization Structure  
Directions of Information Flow- Downward, Upward, Diagonal, Lateral, Horizontal, Multi-dimensional

#### UNIT II

Oral and Aural Communication  
Conversation, Change of date for an Appointment, Advantage and Limitations of Oral Communication

#### UNIT III

Reading and Writing skills for Business communication  
Importance of Writing skills, Sub- Skills for Reading Comprehension  
Principles of Effective Writing, Choice of Form and Style

#### UNIT IV

Process of Writing and Effective Use of Language for Clear Writing  
Persuasive Business messages, Parts and Layout of Business Letter

#### UNIT V

Business Correspondence  
Internal Communication- Memos and Memo Letters  
External Communication- E-Mail

#### Reference Text

I. Francis Soundararaj- Speaking and writing for effective Business Communication Chennai; Macmillan, 2007.

  
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## SEMESTER IV

Code:UENN42 NON- MAJOR ELECTIVE- PRESENTATION SKILLS 2Hrs/2Credits

### OBJECTIVES

- 1.To strengthen the speaking and writing skills.
- 2.To develop Self-confidence.
3. To prepare the students for Competitive Exams.
4. To enable the students speak and write in English fluently on various topics

### UNIT I

#### Organizing Speech

Planning and Preparation, Developing Main Points, Supporting Ideas

Beginning and Ending Speech

### UNIT II

#### Modes of Delivery

Reading the Manuscript Speaking

Extemporaneously Impromptu

Speaking from memory

Speaker's Voice- Non- Verbal Communication

### UNIT III

Speech Etiquette- Avoiding Bad Habits, Developing Good Ones

### UNIT IV

#### Speech for Special Occasions

Welcome Speech, Introduction Speech- Felicitation Speech-Vote of Thanks

  
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## UNIT V

### Speeches that Changed the World

Sample- Speeches of Jawaharlal Nehru and Mother Teresa

### COURSE TEXT:

1. Krishna Mohan & N.P singh.- Speaking English Effectively New Delhi Macmillan, 1995

### REFERENCE BOOKS:

1. Stephen E. Lucas- The Art of Public speaking Chennai: McGraw Hill.
2. Richard Denny- Speak for yourself, New Delhi: UBS, 1995

  
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SEMESTER IV

SBS – WRITING SKILLS 2Hrs/2Credits

Code:UENS42

OBJECTIVE

1. To introduce the students the structure, mechanics, vocabulary and different modes of writing.
2. To master the structure of Language
3. To prepare the students for Competitive Exams.
4. To enable the students write error free English error free on various topics

UNIT I Sentence Structure

- Kinds of Sentence structure
- Prepositional Phrase
- Verbs and Verbal Phases

UNIT II Signal Words

- Conjunction and Preposition
- Giving Reasons: as, because of, etc.,

UNIT III Mechanics of Writing

- Punctuation

UNIT IV Vocabulary

- Commonly misspelt words

UNIT V Writing

- Prewriting
- Identifying the purpose of writing
- Organizing information
- Writing the first draft
- Editing

REFERENCE BOOKS:

1. Warneir, John E. English Composition and Grammar (I Course) Chicago: Harcourt Brace Jovanovich Publishers, 1998.
2. Hewings, Martin. A Remedial Grammar for Advanced Students, New Delhi: CVP, 2004.

  
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## SEMESTER V

Code: UENES3 ENGLISH FOR COMPETITIVE EXAMINATIONS 2Hrs/2Credits

### Objectives:

1. To enhance the students' capability to appear for various Competitive Examinations
2. To enrich the English language skills to face the interviews.
3. To prepare the students for Competitive Exams.
4. To enable the students speak and write in English fluently on various topics

### Unit I

Number, Subject – Verb Agreement, Articles, Common Errors, Sequence of Tenses

### Unit II

Idioms and Phrases, One word substitutes, Foreign Words and Phrases

### Unit III

Reading and Reasoning

### Unit IV

Paragraph Writing, Expansion of an Idea, Report Writing, Essay, Letters

### Unit V

Group Discussion

Interview

### REFERENCE BOOKS:

Saraswathi, V. Maya KM Udbhatkal. English for Competitive Examinations. Emerald Publishers.

R.P Bhatnagar – English for Competitive Examinations.

  
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Dindigul-624 001



## SKILL BASED ELECTIVE

Code:UENS64

## THE ART OF PUBLIC SPEAKING 2Hrs/2Credits

### Objective:

1. To enrich the knowledge of English Oral Communication Skill.
2. To speak error free English confidently.
3. To prepare the students for Competitive Exams.
4. To enable the students speak and write in English fluently on various topics

### Unit I

Characteristics of Voice \_ Quality, Pitch, Volume, Body Language \_ Personal Appearance, Posture, Gestures and Eye Contact

### Unit II

1. Organization of Speech - Planning and Developing
2. Beginning and Ending of Speech – Delivery

### Unit III

Speeches for Special Occasions –Excerpts

- a. "Chicago" – Swami Vivekananda
- b. " I Have a Dream" – Martin Luther King.
- c. "Blood Toil and Tears" – Churchill

### Unit IV

Extemporaneous Speeches, Agreeing and Disagreeing.

  
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Unit V

Drafting a Speech ( Practicals for Internal Assessment)

**REFERENCE BOOKS:**

1. Krishan Mohan and N.P Singh "Speaking English Effectively" 2<sup>nd</sup> Edition. Macmillan India.

  
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M.V. Jyoti's Government Arts College (W)  
Dindur

Course Code	P21ENS11	TECHNOLOGY IN TEACHING ENGLISH			
SUPPORTIVE SKILLS - I		L	T	P	C
Cognitive Level		2	-	-	2
Learning Objectives:		<p>The main objective of this course is to</p> <ul style="list-style-type: none"> <li>acquaint participants with technology tools, learn to implement network-related programs with concepts of Web Developing.</li> <li>integrate these tools into their English language teaching.</li> <li>enhance English language teaching professionals around the world acquire and maintain basic knowledge and skills in technology for professional purposes.</li> <li>help participants utilize technology in lesson planning, materials development, feedback, and assessment. Practice different phases of software/system development.</li> <li>facilitate professional communication, collaboration, and efficiency improvement by participating in online discussions. Students will be able to demonstrate adequate skills in oral and written communication for technical English language, actively participate in group discussions and interviews and exhibit evidence of vocabulary building</li> </ul>			

**Unit I: Definition -Virtual- Learning Environment:**

Meaning- Web-Based Learning Environment, Virtual- Learning Environment  
Web Tools, Effective Web Tools in Teaching, and Classroom Tools

**Unit II: Webpage Development:**

How to develop a webpage, Hosting the Web page, Meta Data Development.  
Content Writing, Creating Ads  
Wikipedia Development: How to develop and edit Wikipedia.

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**Unit III: Computational Linguistics:**

Introduction to speech recognition (SR) systems, text-to-speech (TTS) synthesizers, interactive voice response (IVR) systems, search engines, text editors and language instruction materials.

**Unit IV—Lexicography**

Introduction to Lexicography, Dictionary Development (e- Dictionary), WorldNet, Thesaurus. Language Teaching: First Language and Second Language Teaching, Various methods of Language Teaching.

**Unit V: E-Learning**

Asynchronous E-Learning Vs Synchronous E-Learning of Language  
E-Learning Challenges and Solutions.  
Application: Machine Translation.

**Reference Books:**

1. Anderson, T. (ed.) The Theory and Practice of Online Learning Athabasca AB: Athabasca University Press, 2008.
2. Bates, A. and Sangrà, A. Managing Technology in Higher Education San Francisco: Jossey-Bass/John Wiley and Co, 2011.
3. Butcher, N. and Wilson-Strydom, M.) A Guide to Quality in Online Learning Dallas TX: Academic Partnerships, 2013
4. Batson, T., & Bass, R. Teaching and learning in the computer age. Change, Mar-Apr, 1996.

**Course Outcomes:**

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

K1, K2	CO1	understand the digital system, its organization and architecture
K1, K2	CO 2	identify needs and aspirations on a broader spectrum, Able to recognize the evolving role of Digital Technologies.
K2, K4	CO 3	discuss how technology affects language learning and teaching today.
K2, K6, K3	CO 4	use strategies to teach vocabulary growth through social media. convert source code for a novel language into machine code for a novel computer.
K4, K6	CO5	identify appropriate grammar activities that include opportunities for learners to discover, analyze, and produce English grammar during language interactions.

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MOTHER TERESA WOMEN'S UNIVERSITY  
 KODAIKANAL  
 PG – COMMON PAPER – SYLLABUS  
 100% internal

PUCSS11/ PUCSS22 SUPPORTIVE COURSE	<b>COMPUTER SKILLS FOR WEB DESIGNING                  AND VIDEO EDITING</b>	L	T	P	C
Cognitive Level	K1: Recall K2: Understand K3: Apply K4: Analyze			4	2
Objectives	<ul style="list-style-type: none"> <li>• Prepare students develop an effective web page using HTML tags - K3.</li> <li>• Create a table within a web - K2.</li> <li>• Insert heading levels within a web page - K2.</li> <li>• Insert ordered and unordered lists within a web page -K2</li> <li>• Publish a web page - K3.</li> <li>• learn how to combine basic design principles in video editing - K2.</li> <li>• generate a video by applying her knowledge - K3.</li> <li>• Present the edited video - K3.</li> <li>• Record short clips by using camera - K2.</li> </ul>				

**UNIT 1: INTERNET**

Basics of Hardware and Software – Basics of Windows Operating System – Windows Utilities. Concept of Internet, Applications of Internet, Connecting to the Internet, Troubleshooting – World Wide Web – Web Browsers – Search Engines: Accessing Web Browser, Downloading Web Pages, Printing Web Pages – Understanding URL – Surfing the Web: Using e-Governance Websites.

**UNIT 2: HYPER TEXT MARKUP LANGUAGE (HTML)**

Structure of HTML Script – Components: Text, Table, Image, Hyperlinks, Types of Lists – Headers and Footers. Forms in HTML: Label – Text Field – Radio Group – Text Area – Buttons.

**UNIT 3: OPEN ELEMENT**

Introduction – Creating and Saving a Project - Basic User Interface Elements – Media Elements – Images – Carousels - Image Gallery – Videos – Project Preview in Browser.  
 Containers and Groups: Accordion Group – Collapsible Panel – Group of Elements – Back-End and Full Stack Development.

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#### **UNIT 4: VIDEO EDITOR**

New Video Project – Sort Video Projects – Store Board – Project Library – Video Editing Tools: Filters, Trim, Split, Text, Motion, 3D Effects, Speed - Screen Direction - Sound Design – Continuity – Titling - Picture Management - Color Correction - Special Effects

#### **UNIT 5: OPEN SHOT VIDEO EDITOR**

Drag-and-drop functionality - Video effects like brightness, gamma, greyscale, hue, and green screen – Various layers for audio tracks, background videos, and watermarks - Customizable title cards – Key frame animation capabilities.

#### **Text Books:**

1. Anne Boehm & Zac Ruvalcaba, HTML5 and CSS3, 4<sup>th</sup> Edition, 2018.
2. Aaron Good, Video Editing Handbook, 2017, ISBN : 1521721041.

  
P.G. and Research Department of English  
M.V.Kuthich Government Arts College for Women  
Dindigul - 624001.



## OBJECTIVES

- To enable the students to imbibe the creative techniques of the major genres of English literature
- To enable students to acquire the skills of writing for the press & mass media
- To enhance students employability by the application of their creative talents
- This will enable the students to improvise their skills of writing.

## UNIT I:

Writing Short Story (Narrative, descriptive), Writing Poetry (Simile, metaphor, Personification, Rhyme scheme)

## UNIT II:

Script for Announcement Preparing Notice/Agenda

## UNIT III:

Writing Advertisement Writing Reviews (Books /Films) Writing News for TV /Radio

## UNIT IV:

Writing Memos

Report writing (function /accident / incident) Feature Articles

## UNIT V:

Essay- Writing (2 hours) based on Exposition, Description, Narration & Argumentation

## TEXT BOOKS:

1. Pawan Mishra's -On Writing Wonderfully: The Craft of Creative Writing
2. John Gardner's -The Art of Fiction

#### REFERENCE BOOKS:

1. Rog Off, Leonard and Ballenger, Grad y -Office Guide to Business Letters, memo s & Reports New York; Macmillan 1994.
2. Developing communication skills -2nd Edition, Krishna Mohan, Meera Banerji, Macmillan)
3. Martin Maloney and Paul Max Rubenstein: Writing for the Media. Practice - hall in c. engel wood cliffs n.j

  
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## OBJECTIVES:

- To enable the students acquire skills of writing for the media.
- To promote the chances of employability

## UNIT I: Report Writing

Function/Celebration Accident Incident

## UNIT II: 1. Editorial Column

2. Letter to the Editor

3. Types of Interviews

## UNIT III: Writing Feature Stories Writing Documentaries

UNIT IV: News for TV News for the Radio Advertisements Reviews a.  
Books b. Films

## UNIT V: 1. writing for Web sites

2. Writing for e-zines

## TEXT BOOKS:

  
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M.V. Muthiah Government Arts College (W)  
Dindigul-624 001



1. P.K. Menon , 'Practical Journalism', aavishkar Publishers and Distributors, 2005
2. K. M. Shrivastava, 'Radio and T. V. Journalism', stosius Inc/Advent Book Division, 1989

#### BOOKS FOR REFERENCE:

I.S.P. Phadbe - 'Modern Journalism – Tools and Techniques' - ABD Publishers

2007Y. K. D' Souza - 'Encyclopedia of Advanced Journalism – Orient Longman, 2 revised edition.

  
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**SEMESTER VI**

Code: UENT64

**ENGLISH LANGUAGE TEACHING**

**5Hrs/4Credits**

**OBJECTIVES**

1. To introduce teaching methods, approaches and techniques.
2. To strengthen the knowledge of the student as a Learner/a Teacher.
3. To prepare as an Efficient English Teacher.
4. To enable the students speak and write in English fluently on various topics

**Unit I**

Issues Involved in the Teaching of English – CALL (Computer – Assisted Language Learning), CALI (Computer Assisted Language Instruction), CBLT (Content - Based Language Teaching), Methods, Approaches, Techniques, Teaching English as a Second Language.

**Unit II**

Teaching of Listening, Speaking, Reading and Writing

**Unit III**

Teaching of Grammar

Teaching of

Vocabulary Teaching

of Poetry Teaching of

Prose

**Unit IV**

Testing – Classification

Types of Questions

**Unit V**

Uses of Audio – Visual Aids in the Teaching of Language (T.V., Internet)

  
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M.V. Muthiah Government Arts College (W)  
Dindigul-624 003

### REFERENCE BOOKS:

- Hughes, Rebecca, Teaching and Researching Speak, Delhi Pearson, 2011.
- Aslam Mohammed, Teaching of English . New Delhi, Foundation Books, 2003.
- Tickoo ML, Teaching and Learning English. New Delhi, Orient Longman, 2003.
- Krishnaswamy N.and Lalitha Krishnaswamy. Methods of Teaching English. Sahibabad. Pranjali Printline, 2013.

  
Dr. S. ARITHCHELVI PARVATHA  
PG Teacher & Head  
Department of English  
M.V. Muthiah Government Arts College (V)  
Dindigul-624 002



SEMESTER V

SKILL BASED ELECTIVE – ENGLISH FOR CREATIVE WRITING

OBJECTIVES

1. To study English and to employ it in a creative mode and to orient students to writing different styles of addresses and feature and review writing.

UNIT I

How to write a Short Story and a Poem (Narrative, Descriptive & Figures of Speech)

UNIT II

Review Writing : Book Review and Film Review( Models from The Hindu News Paper)

UNIT III

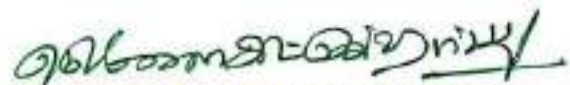
Feature Writing

UNIT IV

Advertisements: Different Kinds ( Models from The Hindu News Paper)

UNIT V

How to write Welcome Address and Valedictory Address



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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF HISTORY**

**SYLLABUS**

## Reference Books

1. Desai - Violations of Democratic Rights India (Bombay 1996)
2. Leah Leven - Human Rights in India (NBT, 1998)
3. Upendrabaxi - The Rights to be Human 1987

## HISTORY FOR COMPETITIVE EXAMINATIONS

UHSN42

C2/H2

### Objectives

- > To create awareness of the Competitive Examination
- > To equip the students to face various Competitive Examinations

### UNIT I

General knowledge and General Studies

### UNIT II

Current affairs and India Today

## GUIDANCE AND COUNSELLING

UHSN47

C2/H2

### Objectives

- > To create awareness of who am I
- > To understand their own problem and getting best possible solutions.

### UNIT I

Guidance - getting appropriate information, emotion, self awareness, self motivation, self control, capacity to communicate.

### UNIT II

Consulting Experts, Resource Book, Media and Sources etc. Handling of interpersonal relationship.

### UNIT III

Counselling - making oneself to understand one's own problem, psychological Methods, Psychological intervention.



UNIT IV

Finding out the appropriate and best possible solutions - Humanistic Approach

UNIT V

Visiting a counsellor - Working with the Counsellor - developmental counselling

Test Book

1. AnandaValli, S. Jeyaprasnam, Gopinathangiam - Guidance and Counselling.

Reference Books

2. Indu Dree - Basic Essentials of Counselling
3. Baid&Muhzopathy - Guidance and Counselling
4. Joe Curran - Barefoot counsellor
5. Brain Tocksi - Ustavam Kalat Arinatal

204  
 09/01/2023  
 துறைத் தலைவர்  
 வரலாற்றுத் துறை  
 மீட்டிங் ரூம் தலைவரின் அலுவலகம்  
 திருச்சூர் - 624 401.

HISTORY OF WORLD CIVILIZATIONS UP TO AD 1000

UHST51

C4/H5

Objectives

- > To get an idea about the different ancient civilizations and political ideas
- > To study the origin and growth of the religions
- > To explore the legacy of various civilizations
- > To develop the feeling of tolerance.

UNIT I

Civilization - Definition Factors influencing the growth of Civilization

Difference between Civilization and Culture

UNIT II

Egyptian Civilization: Geographic, The people, Government, social and economic conditions, The art, Religion, Literature and Invention, Language of the Egyptian civilization

# COMPUTER APPLICATION IN HISTORY- THEORY

## Objectives:

- > To understand the computer operation
- > To know the various operating system
- > To use computer in day today needs
- > To train the students for job

## UNIT I

Introduction to computer and its components

## UNIT II

Personal Computers – Input, Output and Storage Devices

## UNIT III

Various Operating System-MS-DOS, WINDOWS, UNIX

## UNIT IV

Selection of Hardware & Software

## UNIT V

Word Processing – MS-Office

## Reference Books

1. Stuart – A Guide to Computer Applications in the Humanities

## Reference Books:

1. H. Rao

Structuring the post the use of computers in History

2. D. Gopinath

CD from Scholarly Research in Humanities

201

*Dr. Jeyaraj*  
23/01/2023

அறிவுத் தலைவர்  
வரலாற்றுத் துறை  
எம்.வி.குமாரசாமி அரங்கம் மாண்புமிகு அமைச்சர்  
தலைநகரம் - 624 001.

SEMESTER - IV

NME

WOMEN'S EMPOWERMENT THROUGH JUDICIAL PROCESS

Credits - 2

Hours - 2

UNIT I

Women's Empowerment - Women's Equality - Rights and Law of Women - Educational Opportunities - Employment.

UNIT II

Women's Political Leadership - Political structure and Women's Position - gender issues - Education for Women Empowerment.

UNIT III

Violence against Women - Dowry system - Nature of Dowry deaths.

UNIT IV

Constitutional Agenda for Empowering Women - Judicial response to empowerment of women - Rape trial - compensation to Rape victims.

UNIT V

Women and Laws - Laws concerning women in Modern India.

Reference Books :

1. Rajana Harish and - Multidisciplinary perspectives on Women's Empowerment in India
2. V. Bhargavi Harishankar

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வரலாற்றுத் துறை  
பி.வி.குமார் சிவசுப்பிரமணியன்  
தென்மேற்கம் - 624 001.



violence on Women - Femicide, Female Infanticide, disparity at home, live-in relationship - ill treatment by her relatives etc.

#### UNIT IV

Government Policy towards Women: Centre and State Government: Policies on women after 1947- Social Welfare Programmes for women: Central State and District level

#### UNIT V

Women's Organizations and Women's Movement in the 20<sup>th</sup> century: Self Help Movement - Green Belt Movement - Movement for Social Justice - Women's Movement in Tamil Nadu

#### Text Book

1. Alkazi A.S. - The position of Women in Hindu civilization; From pre historic times to the present day (Motilal Banarsidas, New Delhi, 1983)

#### Reference Books:

1. Agnew, Viji - Elite Women in Indian Politics (Shakti, New Delhi, 1986)
2. Bala, Sha and Arushi Sharma - Indian Women Freedom Fighters (1857-1947) (Manohar, New Delhi, 1986)
3. Desai, Neera - Women in Modern India
4. Premalatha, P.N - Nationalism and Women's Movement in South India, 1917-1947, Delhi, 2003

## TOURISM PRINCIPLES AND PRACTICES

UEAN31

C2/H2

#### Objectives:

- > To understand the development of tourism
- > To understand the significance of Tourism
- > To equip the students with needed knowledge and skill for employment in tourism industry
- > To extend the knowledge

## UNIT I

Tourism - definition - types of tourism - tourist - definition Emerging concepts.

## UNIT II

Tourism through the ages - Ancient, Medieval and Modern

## UNIT III

Basic Components of Tourism: Attraction; Natural and Manmade - Accommodation; Hotels - Types - Classification - Accessibility, Transport, Types - Air, Land and water.

## UNIT IV

Travel Agency- Tour Operators- Types and Functions - Itinerary- Tour Packages- TAAI- IATA-WTO

## UNIT V

Tourism Products- Special features- Tourism marketing - Traditional vs Online marketing.

Text Book

Bhama A.K. Tourism Development, principles and Practices (New Delhi - 1994)

### Reference Books

1. Holloway Christopher J. The Business of Tourism
2. Kozal H.L. Dynamics of Tourism: A Trilogy (New Delhi 1985)
3. Premalatha P.N. Tourism Development Tamil (Kodithalam 2000)
4. Seth P.N. Successful Tourism Management (New Delhi 1987)

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Dr. Jagan  
23/01/2023

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வரலாற்றுத் துறை  
என்.டி. சூழல்திட்ட ஆய்விதழ் வளர்ச்சி அலுவலகம்  
நீண்டிச்சேல் - 624 001.

## Reference Books

2. Arthur Marwick - The Nature of History, (Macmillan, Chennai)
3. Subramanian, N - Historiography, (N.S Publications, Madurai)
4. Sheik Ali, B. - History in Theory and Method, (Macmillan Chennai)

## YOGA AND MEDITATION

UHSS64

C2/H2

c

### Objectives

- > To create a healthy society

### UNIT I:

Yoga - Yogi - Guru - Shishya - Diksha - Eight Limbs of Yoga.

### UNIT II

Detailed study of Patanjali's Yoga Sutra

### UNIT III

Contribution of Tirumular - Ramalinga Adigal (Vallalar) - Swami Vivekananda.

### UNIT IV

Meditation - Forms - kinds of meditation - mindful meditation - concentration meditation - walking meditation - Religious concept - Hinduism - Buddhism - Jainism - Islam and Christianity.

### UNIT V

Kinds of Asanas - Ten types of Pranayamas

### Reference Books

1. George Feuerstein - Yoga the Technology of Ecstasy
2. B.K.S. Iyengar - Light of Yoga
3. George Feuerstein - The Yoga Sutra of Patanjali

### EXTENSION ACTIVITIES

75/2001

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மேல்தரம் - வரலாற்று  
தமிழ்நாடு



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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

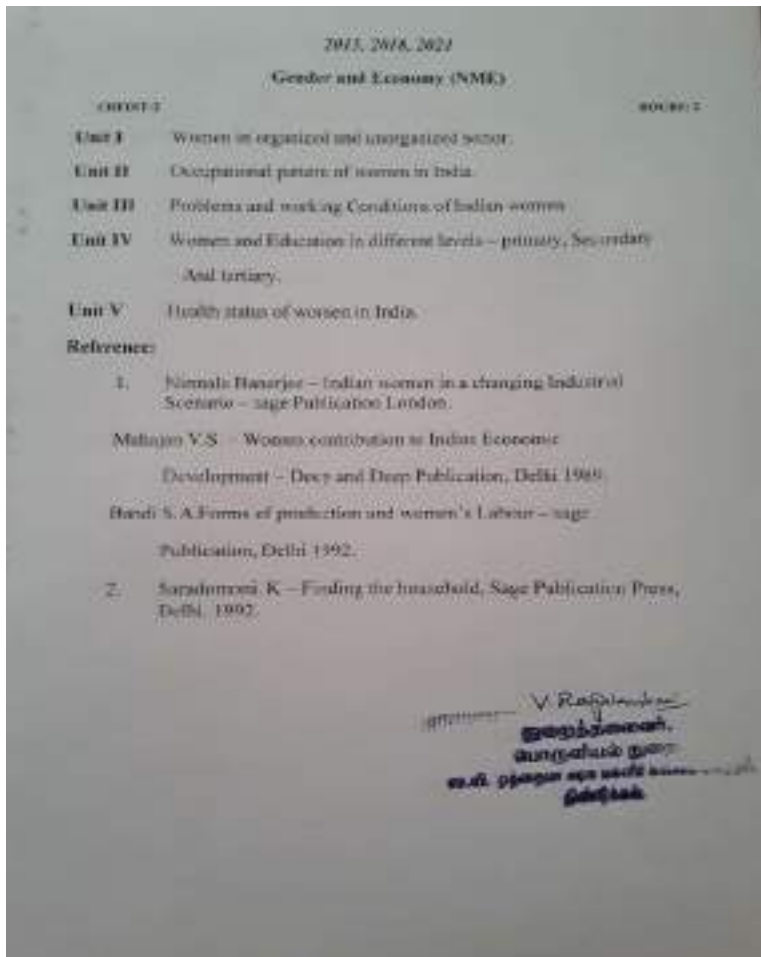
**DEPARTMENT OF ECONOMICS**

**SYLLABUS**

**M.V.Muthiah Government Arts College for Women, Dindigul**

**Department of Economics**

**III SEMESTER (NME)**



### III SEMESTER (SBE)

#### Economics of Salesmanship (SBS)

CREDIT: \_\_\_\_\_ HOURS: 2

- Unit I** Salesmanship – Personal Selling – Selection of Sales Force.
- Unit II** Qualities of a good Salesman
- Unit III** Recruitment and Selection Procedure.
- Unit IV** Training of Salesman – Types of Training.
- Unit V** Motivation of Salesman – Methods.

#### Reference:

1. Salesmanship and Publicity – Rustom, S. Davar and others.  
(Vikas Publishing House)
2. Sales Promotion and Advertising Management – Mishra M.N.  
(Himalaya publishing House)
3. Advertising Management – Rathor B.S.  
(Himalaya publishing House)
4. Advertising Theory and Practice – Chunnawalla and others.  
(Himalaya Publishing House)

V. R. Rajan  
Principal,  
Gandhi College,  
No. 1, Gandhi Road, New Delhi  
Delhi



## IV SEMESTER (SBE)

### Entrepreneurship Development (SBS)

CREDIT: 2

HOURS: 2

- Unit I : Entrepreneurship – Function of Entrepreneurs.  
Unit II : Factors influencing entrepreneurship.  
Unit III : Types of Entrepreneurs.  
Unit IV : Women Entrepreneurs – concept Barriers faced by women  
Entrepreneurs.  
Unit V : Role of women entrepreneurs in India.

#### Reference:

1. Entrepreneurship and small Business Management – Gupta.  
C.B. Srinivasan (Sultan & sons)
2. Entrepreneurship Development – P. Saravana Perumal.
3. Entrepreneurship Development – Jose Paul, Himalaya Publishing  
House.
4. Dynamics of Entrepreneurship Development – nasant Detai –  
Himalaya Publishing House.

V. Rajalakshmi  
குறைந்தவைகள்,  
வெள்ளையன் குறை,  
கா.சி. நல்லாள் அன் காவல் காவல் - 1, 1, 1, 1,  
பெரியவை.

## IV SEMESTER (NME)

### ECONOMICS FOR COMPETITIVE EXAMINATIONS (NME)

CREDIT: 2

BOOKS: 2

- Unit I: Basic features of Indian economy
- Unit II: Demographic Profile of Indian economy.
- Unit III: Agricultural sector in India
- Unit IV: Industrial Sector in India
- Unit V: New Economic Policy in India

V. Rajasekhar  
தலைநகரம்,  
சாளுக்கிப் பள்ளி,  
எ.சி. பத்திரம் ஊர் காவல் சட்டி,  
திருச்சிங்கப்பள்ளம்.

## V SEMESTER (SBE)

BUSINESS COMMUNICATION (SBE)	
COURSE	BOOKS
Unit I	<b>Introduction</b> Business Communication - Importance - Process and principles Modern Communication devices - Word processor - video - Fax - E-mail - Tele conferencing - Telephone answering machine - Internet - websites and their uses.
Unit II	<b>Business Letter</b> Analysis of Business Letter- Layout - Kinds of Business letters- letter of enquiry- Quotations - Offer orders - Cancellations - Replies- Circular- Complaints and Settlements.
Unit III	<b>Business Correspondence</b> Bank Correspondence - Insurance Correspondence- Agency Correspondence- Correspondence relating to Exports and Imports- Letters to the Editor.
Unit IV	<b>Company Correspondence</b> Correspondence with share holders, Government Departments & Statutory Bodies- Application for appointment - Importance, Types, Structure - Oral Presentation Planning for Oral presentation.
Unit V	<b>Report Writing</b> Report - Meaning . Importance, Principles governing the preparation of Report - Qualities of Good Report- Functions of a Report - Types of Reports- Reports by individuals, Committees- Report by Board of Directors - Minister Vs Report
Text Book:	V. Rajaraman Business Communication SBS Publications No. 1, Rajaraman Nagar, Anna Nagar, Chennai - 600 024. SBS Publications



Kathiresan & Dr V. Radha, Business Communication – Prasanna Publishers, Chennai, 2007.

Reference:

1. R.S.N Pillai & Bagavathi, Essentials of Business Communication .
2. V.K.Jain , Business Ethics & Communication – S.Chand & Co Ltd, New Delhi, 2008.
3. Galgotia, Business Communication Skills – Galgotia Publication, New Delhi, 2006.
4. A.N. Kapoor, A Guide to Business Communication.

V. Radha  
உதவிப்பேராசிரியர்,  
மொழியியல் துறை,  
கே.டி. பீரமன் ஐஐடிஎம் கல்வி நிறுவனம்,  
சென்னை.

## VI SEMESTER (SBE)

### Human Resource Management (SBE)

CREDIT:2

HOURS: 2

Unit 1: Human Resource Management - meaning and definition - objectives of HRM

Unit 2: Importance of human resource planning - forecasting human resource requirements.

Unit 3: Orientation and training - orienting the employees - training process.

Unit 4: Establishing pay plans - basics of compensation and trends in compensation.

Unit 5: Industrial relations and collective bargaining - trade union - future of unionism.

#### Reference:

Economic Development & Planning - B.N. Ghosh.

Economics of Growth and Development - K.K. Dewett & Satiahwadhanan.

Indian Economy - Rudder Dutt and K.P.M. Sundaram.

The Economics of Development and Planning - Desai K.V. and Rao. M.

V. Rajalaxmi  
குறைந்த அளவில்.  
வாருவியல் குறை.  
எ.வி. பத்திரிகை ஆகியவற்றில் கருத்து பதிவு செய்து  
கிடைக்க.

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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF COMMERCE**

**SYLLABUS**

SEMESTER III - SBE 3  
UCOS31 - Fundamentals of Investment

Credit: 2

Objective:

Hours: 2

To familiarize the students with

- Different investment alternatives introduce them to the framework of their analysis and valuation and highlight the role of investor protection.

**UNIT - I:**

**The Investment Environment** - The investment decision process, Types of Investments - Commodities, Real Estate and Financial Assets, the Indian securities market, the market participants and trading of securities, security market indices, sources of financial information, Concept of return and risk, Impact of Taxes and Inflation on return.

**UNIT - II:**

**Fixed Income Securities** - Bond features, types of bonds, estimating bond yields, Bond Valuation types of bond risks, default risk and credit rating.

**UNIT - III:**

**Approaches to Equity Analysis** - Introductions to Fundamental Analysis, Technical Analysis and Efficient Market Hypothesis, dividend capitalisation models, and price-earnings multiple approach to equity valuation.

**UNIT - IV:**

**Portfolio Analysis and Financial Derivatives** - Portfolio and Diversification, Portfolio Risk and Return; Mutual Funds; Introduction to Financial Derivatives; Financial Derivatives Markets in India

**UNIT - V:**

**Investor Protection** - Role of SEBI and stock exchanges in investor protection; Investor grievances and their redressal system, insider trading, investors' awareness and activism

**Reference Books:**

1. C.P. Jones, Investments Analysis and Management, Wiley, 8th Edition.
2. Prasanna Chandra, Investment Analysis and Portfolio Management, McGraw Hill Education
3. R.P. Rustogi, Fundamentals of Investment, Sultan Chand & Sons, New Delhi.
4. N.D. Vohra and B.R. Bagri, Futures and Options, McGraw Hill Education
5. Mayo, An Introduction to Investment, Cengage Learning.

**Note:** Question paper shall cover 100% theory

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Department of Finance

M.V. Institute of Management Studies & Research, W. Ghosla

Dispur, Guwahati, Assam



**SEMESTER IV - SBE 2**  
**UCOS42 - Creative Advertising (Practical)**

**Credit: 2**

**Objectives:**

**Hours: 2**

- To highlight the importance of advertising as a business strategy.
- To explain how creativity can be incorporated in an advertisement.
- To understand the communication process that takes place while advertising and to analyse it from the view point of a customer.

**UNIT - I**

Creative Advertising Meaning - definition of marketing and advertising - functions of advertising - communication and persuasion process - human communication process - advertising exposure model - applying communication process to advertising.

**UNIT - II**

Consumer Behaviour Consumer Behaviour - consumer decision making process - consumer perception process

**UNIT - III**

Creative Advertising Creativity in advertising, creative thinking - Creative process - Appeals - Copy Writer - Copy Writing - Print Copy elements, Headlines - body Copy - Slogan elements of design and principles of design.

**UNIT - IV**

Designing Designing Print Ad - choosing format - designing page - choosing type faces - working with visuals - lay-out ready for print. Course

**UNIT - V**

Advertising and Media strategy - Role of Media; types of media, their advantages; and disadvantages; media planning, selection & scheduling strategies

**Text Book:**

1. Chunawalla & K.C. Sethia, Foundation of Advertising Theory & Practice, Himalaya Publishing House, New Delhi, 2000 Course

**Reference Books**

1. William H. Bolew, Advertising,
2. John Wiley & Sons, New York, 1995
3. Courtland Bovee John Thill & George Dovel, Advertising Excellence,
4. Tata Mc Graw Hill Publications, New Delhi, 1995.

**Note:** 100% practical

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**SEMESTER III - NON MAJOR ELECTIVE I**  
**UCON31 - Fundamentals of Insurance**

**Credit: 2**

**Hours: 2**

**Objective:**

- To impart theoretical base on fundamental principles of insurance business

**UNIT - I**

Introduction to Insurance – Meaning, Definition of insurance – General principles of insurance – Types of insurance life, fire and marine – Difference between life and other types of insurance, Growth & Development of Indian insurance industry – Regulations of insurance business and the emerging scenario.

**UNIT-II**

Life Insurance – Introduction to life insurance: Features of life insurance – Essentials of life insurance, Different types of life policies – Annuities, Formation of life insurance contracts- Assignment and nominations – Lapses and revivals of policies- Surrender value, paid up value, Loans – Claims – Procedure for claims- Settlement of claims – Death and Maturity.

**UNIT-III**

Fire Insurance – Fire insurance contracts- Fire insurance coverage – Policies for stocks – Rate fixation in fire insurance – Settlement of claims. Marine Insurance – Functions – Marine perils – Types of marine policies – Clauses in general use – Warranties and conditions- proximate cause – subrogation and conciliation – Re-insurance – Double insurance – Types of marine losses.

**UNIT-IV**

Miscellaneous Insurance – Motor insurance – Employer's liability insurance – Personal accident and sickness insurance – Aviation insurance – Burglary insurance – Fidelity guarantee insurance – Engineering insurance – cattle insurance – Crop insurance.

**UNIT-V**

Procedure for becoming an Agent – Pre-requisite for obtaining a license – Duration of license – Cancellation of license – Termination of agency – Code of Conduct – Functions of the Agent.


**TEXT BOOKS:**

1. Fundamentals of Insurance - Dr. Periyasamy, Himalaya Publishing Pvt Ltd, Mumbai.
2. Insurance principles and practice - Moorthy, A, Margham publications, Chennai.
3. Fundamentals of insurance - Dr. P. K. Gupta, Margham publications, Chennai

**REFERENCE BOOKS:**

1. Insurance principles and practice - Periasamy, P. Margham publications, Chennai
2. Insurance principles and practice - Mishra, M. N. Sultan Chand & Sons, New Delhi
3. Insurance principles and practice - Bahu, V. & Prasad, Margham publications, Chennai

**Note:** Question paper shall cover 100% theory

  
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Department of Insurance  
M.V. Mothilal  
Dr. - 2018

**UNIT-IV**

Advertising Budget-measuring the effectiveness  
advertising - pretests-post-tests.

**Text Book:**

Modern Marketing principles and practice  
R.S.N.Pilla&Begavathi/ S. Chaud & Company Ltd., New  
Delhi/third Edition

**Reference Books:**

Marketing - Rajan Nair &Sanjith R Nair/sultan chand  
sons, New Delhi/Seventh Edition.

**ONMEC- ACCOUNTING FUNDAMENTALS****II Year****IV Semester****Total contact hours: 30****Credit: 2****Unit I**

Introduction - book keeping - Accounting  
Principles - Objectives - Concepts - Classification of  
accounts - advantages and Limitations of Double entry  
system.

**Unit II**

Books of original entry - Journal - Journal Proper.  
Compound entry.

**Unit III**

Subdivision of Journal - Subsidiary books -  
purpose - purchase, sales, purchase return, sales return  
and cash book (single column only)

**Unit IV**

Books of Journal entry - ledgers - purpose - ruling  
and balancing of the Ledger account.

**Unit V**

Trial Balance - meaning- importance - preparation.

**Text Books:**

Advanced Accountancy - R.S.N.Pilla) and  
Bagavathy./Kumar Publisher PVT Ltd /2<sup>nd</sup> Edition.

**Reference Books**

1. Jain &Narang - Advanced  
Accountancy/KalyaniPublishing ,Bangalore/17<sup>th</sup>  
Edition.
2. R.L.C Gupta- Advanced Accounting/Sultan  
chand& son / New Delhi/ 5<sup>th</sup> Edition.
3. Arulanandam& Raman-Advanced  
Accountancy/Himalaya Publishing house / 5<sup>th</sup>  
Edition.

**PART III CORE - PARTNERSHIP ACCOUNTING****III Year****V Semester****Total contact Hours: 75****Credit: 4****UNIT-I**

Partnership- Meaning, Definition-Partnership deed-  
Fixed and Fluctuating capital, accounts - Past  
adjustments and guarantees.

**UNIT-II**

Admission of partners- calculation of new ratio and  
sacrificing ratio Treatment of goodwill- Revaluation of  
assets and liabilities-Adjustment of capital

**UNIT-III**

Retirement and death of a partner- Accounting  
treatment -settlement of amount due to legal  
representative- Joint-life-policy and methods of its  
accounting treatment.

**UNIT-IV**

Dissolution of firm- Insolvency of partners-Garner  
& Murray case -methods of Piecemeal distribution.

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Credit: 2

Objectives:

Hours: 2

- To provide practical knowledge to fill forms like insurance, bank, loan application, membership form, income tax return forms etc.

### LIST OF EXERCISES FOR COMMERCE PRACTICAL

#### UNIT - I

- Preparation of invoice, receipts, vouchers, delivery challan, entry pass, gate pass-debit and credit notes.
- Preparation of Application for shares and allotment - letter of shares Allotment - transfer forms.

#### UNIT - II

- Drawing, endorsing and crossing of cheques- filling up of pay in slips demand draft application and preparation of demand drafts
- Making entries in the passbook and filling up of account opening forms for SB account, current account and FDR's.
- Drawing and endorsing of bills of exchange and promissory notes.

#### UNIT - III

- Filling up of application forms for admission in cooperative societies.
- Filling up of loan application forms and deposit challan
- Filling up of Jewel loan application form, Procedure for releasing of jewellery in jewel loans and repayment.

#### UNIT - IV

- Preparation of agenda and minutes of meetings-both general body and board of directors.(students are asked to write agenda and minutes of their own and should not use printed format)
- Using Bin card and inventories.
- Using Cost Sheets

#### UNIT - V

- Filling up of an application form for LIC policy, filling up of the premium form-filling up the challan for remittance of premium.
- Preparation of an advertisement copy, collection of advertisement in dailies and journals, critically evaluating the advertisement copy.
- Filling up income -tax returns and application for permanent account number.

#### Note:

Students may be asked to collect original or Xerox copies of the documents and affix them on the record note book after having filled up. Drawing of the documents should not be insisted.

Note: 100% Practical

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SEMESTER VI - SDE 4  
UCOS64 - Business Communication

Credit: 2  
Objectives:

Hours: 2

- To develop better written and oral business communication skills among the students and enable them to know the effective media of communication.
- To enhance their writing skills in various forms of business letters and reports.

**UNIT - I**

Organization of a modern office - Meaning of Office, Functions and importance of an office, Office manuals - Types, Preparation of office manuals, Office forms - Form designing and control.

**UNIT - II**

Mail and Correspondence - Handling inward and outward mail. Internal and External communication, Layout of business letters - Kinds of business letters, Characteristics of a good letter.

**UNIT - III**

Trade letters - Enquiries - Quotations - Acceptance and order confirmation - Execution - Refusal or cancellation of orders, complaints and adjustments - Acknowledgements - Collection letters - Follow up letters - Status enquiry

**UNIT - IV**

Circular letters - Banking correspondence - Agency correspondence - Correspondence with government

**UNIT - V**

Modern communication methods - Electronic mail (E-Mail), Voice mail, Cellular phones, Fax (Facsimile), Video conferencing, Multimedia, Telephone answering machine, Whatsapp.

**Text Books**

1. Chopra, R.K. 2015. Office Management. 17<sup>th</sup>Edn. Himalaya Publishing House, Mumbai. (Units I & II)
2. Pillai, R.S.N and Bhagavathi, V. 2014. Business Correspondence and Office Methods. 11<sup>th</sup>Edn. S.Chand & Co (P)Ltd, New Delhi. (III, IV & V)

**Reference Books**

1. Devanarayanan, T.S and Ragnathan, N.S. 2015. Office Management. 1<sup>st</sup>Edn. Margham Publications, Chennai.
2. Gupta, C.B. 2014. Office Organisation and Management. 2<sup>nd</sup>Edn. Sultan Chand & Sons, New Delhi.
3. Sundar, K. and Kumara Raj, A. 2015. Business Communication. 1<sup>st</sup>Edn. Vijay Nicole Imprints Private Limited, Chennai.

**Note:** Question paper shall cover 100% theory

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**UNIT-IV**

Product management -brand management  
retailing Merchandise management -criteria for  
selection of suppliers-category management  
Merchandise Management Planning in various  
segment.

**UNIT-V**

Store management responsibility-Motivating  
employees-controlling costs-Reducing inventory  
objectives of a good Design- store layout of planning.

**Text Book:**

Retail Management by Chetan Bajaj, Rajnish  
Nishi V.srivastara (oxford university Traders)  
impression 2006/published in India.

**Reference Book:**

Retailing management by Michael levy and Barton  
Wetz (TATA McGraw hill publishing Ltd.,/first edition.

**Text Book:**  
Elements of mercantile Law-S.D.Kapoor/ Sultan Choud  
Sons educational publishers/ 31<sup>st</sup> edition 2009  
**Reference Books:**  
1. Business Law R.S.N.Pillai and V.Bagavathi / S.Chand  
Publishes/ edition 2001  
2. Company Law - Dr.Avtar Singh, Eastern Book company,  
Lucknow, 11<sup>th</sup> edition.

**PART III CORE -CORPORATE ACCOUNTING**

**VI Semester**  
**Credit: 4**

**III Year**  
**Total contact Hours: 75**

**UNIT-I**

Accounting Procedure for issues of shares at par, at  
discount and at premium call in advance - calls in arrear  
for feature of shares -Re-issue of shares at discount and  
premium -underwriting of shares, redemption of  
preference -underwriting of shares, redemption of  
preference shares.

**UNIT-II**

Valuation of shares and goodwill in joint stock  
companies

**UNIT-III**

Meaning and definition of company-Kinds of joint  
stock companies-Fremation of a company -  
commencement of business- Prospectors -issue of share  
capital-kinds of shares.

**UNIT-IV**

Acquisition of business- Profit prior to  
incorporation-preparation of financial accounts-  
requirements as per schedule IV part I and II

**PART-IV-SBEC-BUSINESS LAW**

**III Year**  
**Total contact Hours : 30**  
**UNIT-I**  
Indian contract Act-Definition-Essential elements  
of a valid contract

**V Semester**  
**Credit: 2**

**UNIT-II**  
Quasi contract-Performance of contract.

**UNIT-III**  
Discharge of contract-Remedy for breach  
contract.

**UNIT-IV**  
Consumer production Act.

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M.V. Mahalingam  
Principal  
M.V. Mahalingam  
Principal  
M.V. Mahalingam  
Principal

**reference Books:**

- Using information technology-Brief version, practical legal security and privacy issues, Firewall-meaning introduction to computers and communications Stephen Brown and Electronic data securities sawyer brain, K.Williams, SarathK.Hutchinson, Inc/INT-V edition, McGraw hill companies/3<sup>rd</sup> edition.
- A Text of information technology -R.Saravanan/units in E-commerce E-cash e-checks- Smart Cards- credit cards (plain credit card, encrypted credit card and third party verification) Encryption and credit card - On-line Third party processors KITT - Risks in electronic payments designing electronic payments system.

**Books Reference:**  
 II Frontiers of Electronic commerce  
 Kaulant/Winston, Person Education, Delhi  
 Ed 2005/6<sup>th</sup> impression 2006 published by Sterling  
 Kindersley (India) Pvt. Ltd.

**ELECTIVE - E-COMMERCE**

**III-Year**

**Total contact Hours : 45**

**VI Semester**

**Credit: 3**

**UNIT-I**

E-Commerce, meaning-Definition reasons for growth of E-commerce-importance of E-commerce objectives of E-commerce infrastructure-anatomy of commerce application

**UNIT-II**

Types of E-commerce Business of Business (Inter Organizational-Commerce) business to consumer consumer to consumer- Internal business process (in organizational E-commerce), their features applications.

**UNIT-III**

Advertising and marketing information based marketing Advertising on the internet on line advertising types-charting the on line marketing process marketing research-search and resource Discovery

**UNIT-IV**

Electronic Data Interchange (EDI) meaning Definition importance of EDI-EDI and Email-EDI and commerce EDI application in business implementation

**Part IV - SBEC - INTERNATIONAL BUSINESS**

**III Year**

**VI Semester**

**Total contact Hours : 30**

**Credit:3**

**UNIT-I**

Meaning, Name and Scope - Role of Foreign Trade in economic development of India

**UNIT II**

Balance of payment in the context of economic Growth. Process: Trade Balance, Current Account position and Capital Account position - Trade - Principles of BOP - Correction of adverse BOP.

**UNIT III**

Euro Currency market and GATT - WTO - World Bank and IMF - Functions.

*S. S. Yashwanth*  
 M.V. Mohan Reddy, VIT Vellore  
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ing - Objectives - importance - Steps in selling - Kinds of salesman - Duties and responsibilities of salesman.

**Text Books:**  
Modern Marketing principles and practices-R.S.N.Pillai & Bagavathi / S. Chand & Company Ltd., New Delhi / 7th Edition.

**Reference Books:**  
1. Marketing Management-Philip Kotler / Pearson Publisher / 13<sup>th</sup> Edition  
2. Marketing Management Dr.C.B.Gupta & Dr.N. Rajm Nair/ Sultan Chand & Sons/ 1<sup>st</sup> thoroughly revised edition 2009

**SMC - ENTREPRENEURSHIP DEVELOPMENT**  
**THEORY**

**II Year III Semester**  
**Total contact hours: 30 Credit: 2**

**Objective:**  
To enable the students to understand the significance of entrepreneurship in India.

**UNIT-I**  
Introduction: Entrepreneur - Definition emergence of entrepreneurial class - theories of entrepreneurship - characteristics of entrepreneur.

**UNIT-II**  
Search for a business idea: Sources and selection - project classification and identification - constraints - steps for starting a small industry selection of type of organization.

**UNIT-III**  
Entrepreneurial behavior: Innovation and entrepreneur - role of an entrepreneur in economic

growth as an innovator - illustrative cases of innovative entrepreneurship - social responsibility.

**UNIT-IV**  
Project finance - sources of project finance, credit facilities - evaluation by financial institutions lease financing.

**UNIT-V**  
Incentives and subsidies: Central Government schemes and State Government Schemes - incentives to SSIs.

**Text Book:**  
1. S.S. Khanna, Entrepreneurial Development, S. Chand & Co., New Delhi

**Reference Books:**  
1. Siner A. David, Entrepreneurial Megabooks, John Wiley & Sons, New York.  
2. Prasanna Chandra : Project Preparation, Appraisal, Implementation, Tata McGraw Hill, New Delhi.  
3. Hall: Entrepreneurship, New Venture Creation, Prentice Hall of India  
4. Gupta CB and Srinivasan NP: Entrepreneurial Development, Sultan Chand & Sons, New Delhi

**ONME - BANKING THEORY LAW & PRACTICE**

**II Year III Semester**  
**Total contact Hours: 30 Credit: 2**

**UNIT-I**  
Definition of banking-banker-customer-the relationship between a banker and a customer-Statutory obligation to honor cheques-Banker's Lien-Duty to maintain secrecy to customer's account.

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**UNIT-IV**

Advertising Budget-measuring the effectiveness  
advertising - pretests-post-tests.

**Text Book:**

Modern Marketing principles and practice  
R.S.N.Pilla&Begavathi/ S. Chaud & Company Ltd., New  
Delhi/Third Edition

**Reference Books:**

Marketing - Rajan Nair &Sanjith R Nadir/sultan chand  
sons, New Delhi/Seventh Edition.

**ONMEC- ACCOUNTING FUNDAMENTALS****II Year****IV Semester****Total contact hours: 30****Credit: 2****Unit I**

Introduction - book keeping - Accounting  
Principles - Objectives - Concepts - Classification of  
accounts - advantages and Limitations of Double entry  
system.

**Unit II**

Books of original entry - Journal - Journal Proper.  
Compound entry.

**Unit III**

Subdivision of Journal - Subsidiary books -  
purpose - purchase, sales, purchase return, sales return  
and cash book (single column only)

**Unit IV**

Books of Journal entry - ledgers - purpose - ruling  
and balancing of the Ledger account.

**Unit V**

Trial Balance - meaning- importance - preparation.

**Text Books:**

Advanced Accountancy - R.S.N.Pilla) and  
Bagavathy./Kumar Publisher PVT Ltd /2<sup>nd</sup> Edition.

**Reference Books**

1. Jain &Narang - Advanced  
Accountancy/KalyaniPublishing ,Bangalore/17<sup>th</sup>  
Edition.
2. R.L.C Gupta- Advanced Accounting/Sultan  
chand& son / New Delhi/ 5<sup>th</sup> Edition.
3. Arulanandam& Raman-Advanced  
Accountancy/Himalaya Publishing house / 5<sup>th</sup>  
Edition.

**PART III CORE - PARTNERSHIP ACCOUNTING****III Year****V Semester****Total contact Hours: 75****Credit: 4****UNIT-I**

Partnership- Meaning, Definition-Partnership deed-  
Fixed and Fluctuating capital, accounts - Past  
adjustments and guarantees.

**UNIT-II**

Admission of partners- calculation of new ratio and  
sacrificing ratio Treatment of goodwill- Revaluation of  
assets and liabilities-Adjustment of capital

**UNIT-III**

Retirement and death of a partner- Accounting  
treatment -settlement of amount due to legal  
representative- Joint-life-policy and methods of its  
accounting treatment.

**UNIT-IV**

Dissolution of firm- Insolvency of partners-Garner  
& Murray case -methods of Piecemeal distribution.

*S. S. Srinivasan*  
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Department of Commerce

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Dharmapalan College for Women  
Dharmapalan - 626 001, Tamil Nadu.

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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF MATHS**

**SYLLABUS**

Semester III

UMTS31

ASTRONOMY- I

2 Hours / 2 Credits

*Objectives*

- *The learner understand basic knowledge about natural science.*
- *The learner will acquire the knowledge of the celestial objects and origin of those objects and phenomena and their evolution*
- *The learner will acquire basic knowledge about morning , evening stars , circumpolar stars*
- *The learner will acquire basic knowledge about the diurnal motion of sun and stars.*

**Unit I:** Spherical trigonometry: Sphere - Great circles and small circles- Axis and poles of circle – distance between two points on a sphere-angle between two circles-secondaries-angular radius or spherical radius – spherical figures –spherical triangles –polar triangle –theorems - Relation between spherical triangles and its polar triangle- Some properties of Spherical triangles-principal of duality-colunar and anti podal triangles –Relation between sides and angles of a spherical triangle- Cosine formuls- cotangent formula-supplemental cosine formula.

**Unit II:** Functions of half an angel- functions of half a side – Delambre's analogies –Napier's analogies- right angled spherical triangle –Napier's rules- Spherical Coordinates – relation between the Spherical and rectangular coordinates – general proof of the cosine formula – formula in plane trigonometry –Important note.

**Unit III:** Astronomy-celestial sphere – Diurnal motion, celestial axis and equator –celestial Horizon – Zenith and Nadir –celestial Meridan – Cardinal points – Northern and souther hemispheres – Eastern and southern hemispheres – Eastern and western hemispheres – visible and invisible hemispheres – Declination circles –verticals – parallacte angle –Rising and setting – transit or culmination- Due east and due west – due south and due north – annual motion of the sun, ecliptic , obliquity-first point of Aries and first point of libra – equinozes and solstices – coloures - Celestial Coordinates: Horizontal system – equatorial system- meridian system – ecliptic system – to represent the different systems of coordinates in the same figure – conversion of coordinates –relation between right ascension and longitude of the sun- to trace the changes in the coordinates of the sun in the course of a year – the longitude of the sun on any day. ( with worked examples)

**Unit IV:** Sideral time –west hour angle of a body expressed in time units – theorem- latitude of a place – theorem- to determine – tee R.A. and Declination of a body- to find the hour angle of a body at rising or setting – to find the duration of day time –to trace the changes in the azimuth of a star in the course of a day. ( with worked examples)

### Semester III

UMTN31 RESOURCE MANAGEMENT TECHNIQUES

2 Hours / 2 Credits

#### Objectives

- To impart the basic concepts and applications of linear programming.
- The learner will analyze the different aspects of transportation problems, assignment problems and also sequencing problem.
- The learner will develop, organize, evaluate short, long term processes and solve problems
- The learner will acquire the knowledge of basics in game theory

**Unit I:** Definition-Mathematical formation of the Linear Programming Problem— Basic Solution- Degenerate Solution- Basic Feasible Solution of the Linear Programming Problem.

**Unit II:** Transportation Problem: Definition-Mathematical form of L.P.P-Table-Find Initial Basic Feasible Solution – North West Corner Rule -Row Minima-Column Minima- Least Cost Method- Vogel's Approximations Method(VAM) - Un balanced Transportation problem- Only upto Initial Basic Feasible Solution.

**Unit III:** Assignment Problem: Definition-Mathematical formulation of the problem— Hungarian Algorithm – Simple Problem .

**Unit IV:** Sequencing Problem: Definition-Problem of Sequencing- Basic Terms Used in Sequencing- Processing n jobs & Two machine- Processing n jobs Through two Machines.

**Unit V:** Game Theory: Definition- Two-Person Zero-Sum Games- Some basic terms- The Maximin-Minimax Principle- Game without Saddle point- Mixed Strategies - Graphic Solution of  $2 \times n$  and  $m \times 2$  games.

#### Text Book:

Kanti Swarup, P.K. Gupta, Man Mohan "Operations Research", Sultanchand and sons, Edition - 2017.

Unit I – Chapter 2 and 4.

Unit II – Chapter 10.

Unit III – Chapter 11.

Unit IV - Chapter 12.

Unit V – Chapter 17.

#### Reference Book :

P.R.Vittal and V.Malini, " Operations Research " Margham Publishers – 2002.



Semester IV

UMTS42

ASTRONOMY-II

2 Hours / 2 Credits

*Objectives*

- Learn able to knowledge about the Earth's pole, it is counterclockwise rotation.
- Knowledge of equation of Time, seasons from earth rotation
- Calculation to prepare calendar and conservation of Time.
- It applies mathematics, physics, and chemistry.

**Unit I:** The zones of earth –to trace the variations in the durations of day and night during the year at different stations –to find the duration of perpetual day in a place of latitude – to find analytically the conditions for perpetual day and night –Terrestrial latitudes and longitudes – Phenomena depending on the change of latitudes and longitudes-Date line – Shape of Earth – Geographical and geocentric latitudes of a place – to find the reduction of latitude –Ellipicity – to prove that reduction of latitude is  $c \sin^2\phi$ - to find the geocentric distance of a station of geographical latitude  $\phi$  - to find the radius of curvature of the earth at a station of geographical latitude  $\phi$  - Geographical and Nautical mile.

**Unit II:** Radius of earth – Another method to determine the radius of earth -arguments in favour of earth's rotation- experimental proofs for the rotation of earthDip of Horizon –to find a expression for Dip.

**Unit III:** To find the distance between two mountains whose tops are just visible from each other – Effects of Dip- to find the acceleration in the time of rising of a star due to dip-Twilight –tofind the duration of twilight- to find the condition that twilight may last throughout night –to find the number of consecutive nights having twilight throughout night – to find the duration of twilight when it is shortest- civil, nautical and astronomical twilights.

**Unit IV:** Equation of time: Introduction- Dynamical mean sun- equation of time – analytical expression for the equation of time –effect of equation of time on the lengths of morning and evening-to prove that the equation of time vanishes four times a year –seasons –causes of seasons.

**Unit V:** Calendar:Different kinds of year –civil year, Julian calendar – Gregorian calendar – Julian date –Besselian year -Conversion of Time: Relation between sidereal and mean times –to convert mean solar time into sidereal time - to convert sidereal time into mean solar time – to find the sidereal time at a given instant of mean solar time on a given date at Greenwich – to find the mean time corresponding to a given instant of sidereal time at Greenwich – the difference between local times – to find the sidereal time from local mean time for a given place- to find the

Semester IV

UMTN42

MATHEMATICAL APTITUDE

2 Hours / 2 Credits

*Objectives*

- *To impart skills in numerical and quantitative techniques.*
- *able to critically evaluate various real life situations by resorting to Analysis of key issues and factors.*
- *able to demonstrate various principles involved in solving mathematical problems and thereby reducing the time taken for performing job functions.*

Unit I : Numbers – HCF – LCM – Problems on numbers. (Chapters 1, 2 & 7)

Unit II : Decimal Fractions and Simplification. (Chapter 3 & 4)


Unit III : Surds and Indices – Percentage – Profit and Loss. (Chapters 9, 10 & 11)

Unit IV: Ratio and Proportion – Partnership – Allegation or Mixture. (Chapters 12, 13 & 20)

Unit V : Average – Problems on Age. (Chapters 6 & 8)

**Text Book:**

R.S. Aggarwal, Scope and treatment as in "Quantitative Aptitude", S.Chand & Company Ltd., Ram Nagar, New Delhi -2007.

  
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Semester VI

UMTS64


NUMERICAL METHODS LAB USING C++

2 Hours / 2 Credits

1. Write a Program to find the Smallest positive / Largest negative root using simple iteration method
2. Write a Program to find the Smallest positive / Negative root using Regula Falsi method.
3. Write a Program to find the Smallest positive / Negative root using Newton-Raphson's method.
4. Write a Program to find the solution of system of equation using Gauss Jacobi method..
5. Write a Program to find the Matrix inversion using Gauss Jordan method
6. Write a Program to interpolate y for given x from the given sets of values of x and y by Newton's forward method.
7. Write a Program to find interpolate y for given x from the given sets of values of x and y by Newton's backward method.
8. Write a Program to find interpolate y using the Lagrange's method
9. Write a Program to derivative at initial point by Newton's forward method
10. Write a Program to integration using Trapezoidal & simpson's method

**Text Book:**

1. T.VEERARAJAN & T.RAMACHANDRAN, "Theory and Problems in Numerical Methods with Programs in C and C++", Tata McGraw Hill Publishing Company Ltd, 2004.

  
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COURSE CODE	U21MTS64	OPERATIONS RESEARCH LAB	L	T	P	C
SKILL BASED ELECTIVE -IV			2	-	-	2

**Objectives:**

To familiarize students with the basic concepts, models and techniques for effective decision making, model formulation and applications.

**Prerequisites: Operations Research – I**

Use of Operations Research Software such as LINDO, LINGO, TORA etc., to solve

- Linear programming Problems
- Sensitivity analysis in LPP problems
- Integer Programming Problems
- Transportation Problems
- Assignment problems
- Problems on CPM/PERT
- Non Linear Programming problems
- Queuing problems

**Reference Books :**

1. Hamdy A. Taha, " Operations Research – An Introduction", Eight Edition – Pearson Education – Prentice Hall.
2. LINDO User's Manual – LINDO Systems, Inc.
3. Optimization Modeling with LINGO - 5 th edition – LINDO Systems, Inc.

**Course Outcome:**

On the successful course completion, students will be able to		Cognitive Level
CO1	understand the basic concepts and application of operations research in various fields	K1
CO2	know principles of construction of mathematical models of conflicting situations.	K2
CO3	analyze the relationship between a linear program and its dual	K3
CO4	techniques constructively to make effective decisions in business and solve problems in industry	K4
CO5	build and solve all problems by using software.	K4

K1- Remember: K2- Understand : K3-Apply, K4- Analyse, K5- Evaluate; K6- create




BSC MATHEMATICS MTWU SYLLABUS 2021 ONWARDS

Relationship Matrix for Course Outcomes, Programme Outcomes and Programme Specific Outcomes

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	S	S	S	S	S	S	S	M	M
CO2	M	M	S	M	S	M	S	M	M	S
CO3	S	S	S	M	S	S	M	S	M	M
CO4	S	M	M	S	S	M	S	S	M	M
CO5	M	S	S	M	S	M	S	S	M	S

\*S-Strong; M-Medium; L-Low

  
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## VALUE ADDED PROGRAM

COURSE CODE	P21M1V11	PYTHON LANGUAGE			
SEMESTER - I		L	T	P	C
		-	-	-	2

Objectives:

- ❖ To understand the fundamentals of Python Programming.
- ❖ To get knowledge about the Functions in Python.
- ❖ To understand the concepts of List and String methods.
- ❖ To gain idea about exception handling and classes.

**Unit- I: Introduction to Python:**

Introduction to Python: Introduction – Python Overview – Getting Started with Python – Comments – Python Identifiers – Reserved Keywords – Variables – Standard Data types.

**Unit- II: Operators:**

Types of Operators - Statement and Expressions – String Operations – Boolean Expressions – Control Statements – Iteration While Statement – Input from Keyboard.

**Unit- III: Functions:**

Functions introduction – Built-in Functions – Composition of Functions – User defined Functions Parameters and Arguments – Function Calls- The return statement – Python Recursive Functions: The Anonymous function – Writing Python Scripts.

**Unit -IV: Strings and Lists:**

Introduction about Strings and Lists: Strings - Lists, Tuples and Dictionaries: Tuples – Dictionaries.

**Unit -V: Files and Exceptions:**


Files and Exceptions introduction - Text Files – Directories – Exceptions – Exceptions with Arguments- User defined Exceptions- Classes and Objects.

Text Book:

1. E. Balagurusamy, "Problem Solving and Python Programming by ", McGraw-Hill first edition (2017)m

Reference Books:

1. Ashok Namdev Kamthane, . Amit Ashok Kamthane, "Programming and Problem Solving with Python". (2017),
2. John B. Schneider Shira Lynn Broschat Jess Dahmen), "Algorithmic Problem Solving with Python" (2019)

  
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Course Outcomes (CO)

CO1	To implement basic concepts of operators and functions.	K1
CO2	To Review various string, list, tuple and dictionaries.	K2
CO3	To evaluate the functionality of an exception handling.	K3
CO4	To analyze the concept of classes and objects.	K4

K1- Remember, K2- Understand, K3-Apply, K4- Analyse, K5- Evaluate, K6- Create

Mapping with Programme Outcomes:

COs/POs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	M	S
CO3	S	S	S	S	S	S	M	S	S	S
CO4	S	S	M	S	S	S	S	S	M	S
CO5	S	S	S	S	M	S	S	S	M	S

S- Strong = 3, M-Medium = 2, L-Low = 1

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COURSE CODE	P21MTV11	PYTHON LAB	L	T	P	C
Value Added Program- 1			-	-	-	2

**Objectives:**

- ❖ To gain knowledge about the fundamentals of python programming.
- ❖ To understand the concepts of string, list, tuple.
- ❖ To implement the concept of exception handling, classes and objects.

**List of Practical Programmes:**

1. Write a python program to print the prime numbers in given range.
2. Write a python program to calculate the area of a triangle.
3. Write a python program to find HCF of the given numbers.
4. Write a python program to create a simple calculator.
5. Write a python program to display Fibonacci series sequence using recursion.
6. Write a python program to demonstrate the string methods.
7. Write a python program to demonstrate the built-in list methods.
8. Write a python program to define a function that prints a tuple whose values are the cube of numbers between 1 and 10.
9. Write a python program to demonstrate exception handling.
10. Write a python program to demonstrate classes and their attributes.

**Course Outcomes (CO)**

CO1	To implement basic operators and function concepts.	K3
CO2	To Review various string and list methods.	K4
CO3	To execute exception handling.	K5

**Mapping with Programme Outcomes:**

COs/POs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	M	S
CO3	S	S	S	S	S	S	M	S	S	S

S- Strong = 3, M-Medium= 2, L-Low = 1

  
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COURSE CODE	PZIMTN212	OPERATION RESEARCH	L	T	P	C
SEMESTER - II			4	-	-	4

**Objectives**

- ❖ To impart the basic concepts and applications of linear programming.
- ❖ The learner will formulate a linear programming problem and solve them graphically and simplex method
- ❖ The learner will be able to understand the concepts of duality programming
- ❖ The learner will analyze the different aspects of transportation problems and also assignment problems
- ❖ Students will be able to identify the basic analysis of various inventory models.
- ❖ The learner will develop, organize, evaluate short, long term processes and solve problems

**Unit - I: Linear Programming problem:**

Introductions- Linear Programming: Mathematical formulation of linear programming problem- Basic Solution - Solving Linear Programming problem using Graphical solution- Unbounded and Infeasible solution in graphical methods -Simplex method - Use of Artificial Variables: - Big M Method - Two Phase Method - Problems using this methods

**Unit -II: Transportation Problem:**

Transportation Problem introduction- Mathematical formulation of the problem - Finding Initial Basic Feasible Solution using North - West Corner Rule - Row minima methods- Column minima method - Matrix Minima Method - Vogel's Approximation Method - Optimum solution - MODI method .

**Unit- III: Assignment Problem:**

Assignment Problem: Introduction - Definition of Assignment Problem -Mathematical formulation of Assignment Problem - Assignment Algorithm - Problem solving using Assignment Algorithm- Application of Assignment Problem: Minimization case routing problem

**Unit- IV: Replacement Problem:**

Replacement Problem: Introduction about Replace problem -Definition Replace problem -and System Reliability - Replacement of Equipment that Deteriorates Gradually- Exercise Problems - Replacement of Equipment the Fails Suddenly-problems in replacement of Equipment the Fails Suddenly

**Unit - V: Network Scheduling by Pregame Evaluation and Review Techniques PERT/ Critical Path Method -CPM:**

Network Scheduling by PERT/CPM : Introduction network and Basic Components- Rules of Construction -Problems in Network Scheduling using CPM -Critical Path Analysis - Probability Considerations in PERT - Problems in Network Scheduling using PERT Distinction between PERT and CPM.

Text Book:

1. Kantil Swarup, P.K. Gupta, Man Mohan, "Operations Research", Sultan Chand & Sons, Educational Publishers, New Delhi.2013

Reference Books:

1. Panneerselvam.R, "Operations Research", 2nd Edition, PHI Learning Private Limited, Delhi, 2015
2. Prem Kumar Gupta,Er, Hira.D.S. "Operations Research", 7<sup>th</sup> Edition, S.Chand & Company Pvt.Ltd.2014
3. Hiller.F.S & Lieberman.J "Introduction to Operation Research ", 7<sup>th</sup> Edition, Tata-McGraw Hill Publishing Company, NewDelhi, 2001.
4. G. Srinivasan, "Operations Research principles and applications", Second Edition, PHI Learning Private Limited, New Delhi-110001, 2012.
5. Taha H.A., "Operations Research: An introduction" Prentice Hall of India Private Ltd 1<sup>st</sup> Edition New Delhi (2008).

Course Outcome:

On the successful course completion, students will be able to:		Cognitive Level
CO1	understand the application of OR and frame a LP Problem with solution – graphic and through solver add in excel	K1
CO2	analyze and interpret results of transportation and problem using appropriate method Solutions of assignment and problem using appropriate method	K2
CO3	evaluate simple model of L.P.P.	K3
CO4	understand and evaluate of CPM and PERT define basic components of Network and find critical path	K3
CO5	find the replacement period of equipment that fail suddenly/gradually	K4, K5

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

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COURSE CODE	U21MTS53	MATHEMATICAL APTITUDE	L	T	P	C
SKILL BASED ELECTIVE III			2	-	-	2

**Objectives:**

- ❖ To impart skills in numerical and quantitative techniques.
- ❖ Able to critically evaluate various real life situations by resorting to Analysis of key issues and factors.
- ❖ Able to demonstrate various principles involved in solving mathematical problems and thereby reducing the time taken for performing job functions.

**Unit- I : Numbers system:**

HCF – LCM – Problems on numbers. (Chapters 1, 2 & 7)

**Unit- II : simplification:**

Decimal Fractions and Simplification. (Chapter 3 & 4)

**Unit- III : Profit and Loss :**

Surds and Indices – Percentage – Profit and Loss. (Chapters 9, 10 & 11)

**Unit- IV: Ratio:**

Ratio and Proportion – Partnership – Allegation or Mixture. (Chapters 12, 13 & 20)

**Unit -V : Average :**


Average – Problems on Age. (Chapters 6 & 8)

**Text Book:**

R.S.Aggarwal, "Scope and treatment as in "Quantitative Aptitude" , S.Chand & Company Ltd., Ram Nagar, New Delhi -2007.

**Reference Book:**

Dr.J.Jayaprakash, "Quantitative Aptitude", 2<sup>nd</sup> edition, Dr.JP Publication, 2017.

  
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**NON MAJOR ELECTIVE- FOR OTHER DEPARTMENT**

<b>COURSE CODE</b>	<b>U21MTN31</b>	<b>RESOURCE MANAGEMENT TECHNIQUES</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>SEMESTER - III</b>			<b>2</b>	<b>-</b>	<b>-</b>	<b>2</b>

**Objectives:**

- To impart the basic concepts and applications of linear programming.
- The learner will analyze the different aspects of transportation problems, assignment problems and also sequencing problem.
- The learner will develop, organize, evaluate short, long term processes and solve problems
- The learner will acquire the knowledge of basics in game theory

**Unit-I: Linear Programming Problem:**

Definition-Mathematical formation of the Linear Programming Problem— Basic Solution-Degenerate Solution- Basic Feasible Solution of the Linear Programming Problem.

**Unit-II: Transportation Problem:**

Introduction and Definition-Mathematical form of L.P.P-Table-Find Initial Basic Feasible Solution – North West Corner Rule -Row Minima-Column Minima- Least Cost Method- Vogel's Approximations Method(VAM) - Un balanced Transportation problem- Only upto Initial Basic Feasible Solution.

**Unit-III: Assignment Problem:**

Introduction and Definition of Assignment Problem -Mathematical formulation of the problem-Hungarian Algorithm – Simple Problem.

**Unit-IV: Sequencing Problem:**

Introduction and Definition of Sequencing Problem -Problem of Sequencing- Basic Terms Used in Sequencing- Processing n jobs & Two machine- Processing n jobs Through two Machines.

**Unit-V: Game Theory:**

Definition- Two-Person Zero-Sum Games- Some basic terms- The Maximin-Minimax Principle- Game without Saddle point- Mixed Strategies - Graphic Solution of  $2 \times n$  and  $m \times 2$  games.

**Text Book:**

Kanti Swarup, P.K .Gupta,Man Mohan"Operations Research", Sultanchand and sons , Edition - 2017.

- Unit I – Chapter 2 and 4
- Unit II – Chapter 10
- Unit III – Chapter 11
- Unit IV - Chapter 12
- Unit V – Chapter 17



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**Reference Book :**

- 1.P.R.Vittal and V.Malini, "Operations Research" Margham Publishers – 2002.
- 2.Taha, "Operation Research", Printice Hall, New Delhi,2011
3. Kalavathy , "Operations Research", Vikas Publishing House Pvt .Ltd. 2003
4. Gupta P.K &Hira D.S , "Problems in Operations Research", S.Chand& Co. Delhi , 2006
- 5.V.Sundaresan, K.S. Ganapathy Subramanian, &K.Ganesan, "Resource Management Techniques" (Operations Research), A.R. Publications, Nagapattinum District

**Course Outcome:**


On the successful course completion, students will be able to		Cognitive Level
CO1	formulate the real life problems as Linear programming problem.	K1
CO2	use to solve Linear programming problems	K2
CO3	identify degeneracy in transportation problem	K3
CO4	calculate the optimal solution from the feasible solution using MODI method	K3
CO5	obtain the optimal solution for Assignment problems, Sequencing problem , Game Theory .	K4

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Relationship Matrix for Course Outcomes, Programme Outcomes and Programme Specific Outcomes

	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	M	S	S	S	S	S	M
CO2	S	S	S	S	S	M	M	S	M	S
CO3	S	S	S	M	S	S	M	S	S	S
CO4	M	S	S	S	S	M	S	M	S	S
CO5	M	S	S	S	M	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

  
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Semester: V

Subject Code: SBS3

No. of Credit: 2

**B.Sc. Mathematics**

No. of Hours / Week: 2

**Skill Based Subject Paper – 3**

### **ACCOUNTANCY I**

**Unit I:**

Accounting Concept, Conventions – Rules of accounts.

**Unit II:**

Books of Accounts double entry system - Journal, ledger and trial balance.

**Unit III:**

Subsidiary Books-Purchase Book, Sales Book, Cash Book, Petty Cash Book.

**Unit IV:**


Final accounts of sole trading concerns.(Simple problems only)

**Unit V:**

Depreciation- Causes-Methods of Depreciation -Merits & demerits. (Theory only). 40% Theory – 60% Problems

**Text Books:**

1. N.Vinayakam, P.L.Mani and K.L.Nagarajan, "Principles of Accountancy", Eurasia Publishing House Pvt Ltd., New Delhi – 55 , 2000.
2. Reddy .T.S., & A.Murthy , "Financial Accounts", Margham Publishers.

  
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**B.Sc. Mathematics**

Semester: VI

No. of Hours / Week: 2

Subject Code: SBS4

No. of Credit: 2

**Skill Based Subject Paper - 4**

**FUZZY LOGIC**

**Unit I**

Classical sets: Relations and functions - Definition of Fuzzy sets - Basic Operations on Fuzzy sets.

**Unit II**

Fuzzy numbers - The Triangular Fuzzy Numbers - Trapezoidal Fuzzy Numbers.

**Unit III**

Fuzzy Relations - Basic Operations on Fuzzy Relations - Basic concepts of classical logic - many valued logic.

#### **Unit IV**

Linguistic variables – Linguistic Modifiers – Compositions  
Rules for Fuzzy Propositions.

#### **Unit V**

Statistical Average – Arithmetic Operations with  
Triangular and Trapezoidal Numbers.

#### **Text Book:**

1. George Bojadziev and Maria Bojadziev, 'Fuzzy Logic for Business, Finance and Management' 2<sup>nd</sup> Edition. World Scientific Publishing Co Pvt Ltd, Singapore. 1996.





**B.Sc. Mathematics**

Semester: III

**Non Major Elective Paper - 1**

No. of Hours / Week: 2

Subject Code: NME1

No. of Credit: 2

**OPERATIONS RESEARCH**

**Unit I:**

Definition - Mathematical formulation of the Linear Programming Problem- Graphical solution method- Some exceptional cases- General Linear Programming Problem - Canonical and Standard form of Linear Programming Problem - Basic Solution- Degenerate Solution- Basic Feasible Solution of the Linear Programming Problem.

**Unit II:**

Transportation Problem: Definition - Mathematical formulation of L.P.P - Table - Find Initial Basic Feasible Solution - North West Corner Rule - Row Minima - Column Minima Least Cost Method- Vogel's Approximations Method (VAM) - Un balanced Transportation problem- Only upto Initial Basic Feasible Solution.

**Unit III:**

Assignment Problem: Definition - Mathematical formulation of the problem - Hungarian Algorithm - Simple Problem - Special Case in Assignment Problem- The Travelling Salesman Problem.

### UNIT III

Logic - Statements - Conjunction - Disjunction - Negation - Conditional - Biconditional.

### UNIT IV

Propositions and truth table - Tautology and contradiction.

### UNIT V

Logical Equivalence, Algebra of propositions. Logically true and Logically equivalent statement.

#### Text Book

1. J.P.Tremblay, R. Manohar - "Discrete Mathematical Structures with Applications to Computer Science". Tata McGraw - Hill Edition 1997.

### B.Sc. Mathematics

Semester: IV

No. of Hours / Week: 2

Subject Code: SBS2

Skill Based Subject Paper - 2

No. of Credit: 2

### THEORY OF NUMBERS

#### Unit I:

Divisibility : Associates - Division algorithm - gcd (HCF) - Euclidean algorithm - l.c.m.

#### Unit II:

Prime and Composite Numbers : Coprimes - Sieve of Eratosthenes - Euclid's theorem - Unique Factorization - Fundamental Theorem of Arithmetic - Positional Representation of Integers - Euler Function  $\Phi (n)$  - Greatest integer function.

**B.Sc. Mathematics**

Semester: IV

No. of Hours / Week: 2

Subject Code: NME2

**Non Major Elective Paper - 2**

No. of Credit: 2

**SET THEORY AND LOGIC**

**UNIT I**

Basic set operations - Union - Intersection -  
Difference - Complement.

**UNIT II**

Reflexive - Symmetric - Transitive - Antisymmetric  
- Poset - Definition.

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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF PHYSICS**

**SYLLABUS**



Course Code	P21ECS11	COMMUNICATION SKILLS FOR BUSINESS	L	T	P	C
SUPPORTIVE COURSE I			2	-	-	2

### Course Objectives

1. To improve the listening skill of the students
2. To improve the writing skill of the students
3. To impart the knowledge of business communication
4. To impart the skill of personality development
5. To train the students in stress management

### UNIT I: Introduction to Communication (6 hours)

Communication-meaning of communication- Objectives-types of communication-importance of effective communication- barriers -Business letter-sales letters-Dealing with non-payment problems-complaints-circular letters

### UNIT II: Business Correspondence (6 hours)

Enquiries-Replies- Complaints-Preparing a Curriculum Vitae or a Resume-Application letter-Offer letter-Acceptance letter-Testimonial

### UNIT III: Reports (6 hours)

Reports-structure- Formal Report- Informal Report-Check list for compiling reports- Preparing Minutes of meeting-Compiling a press release

### UNIT IV: Communication Skills (6 hours)

Basic skills and techniques for talking to people in business situation-Telephonic conversation

### UNIT V: Personality Development (6 hours)

Body language- Personality Development-Stress management-Role of technology in communication

### Text Book:

1. Pusalatha and Sanjay Kumar, Communication Skills, Oxford University Press, New Delhi, 2017

### References

*P. K. Muthiah*

For  
Head of the Department  
Department of Economics  
M.V.Muthiah Government College for Women

Course Code	P21ECE421	ECONOMICS OF HUMAN RESOURCE	L	T	P	C
ELECTIVE-III			4	-	-	4

### Course Objectives

1. To familiarize the concepts of human resources
2. To gain sound knowledge on issues in Education
3. To enable the students to know about the importance of investment in health
4. To gain knowledge on Wage theories
5. To enable the student to understand the human resource requirements.

### UNIT I: Human Resource and Economic Development

(12 Hours)

Importance of Human Resource- Human Resource and Economic Development- Investment in Human Capital- Unemployment- Types, Causes and remedies.

### UNIT II: Investment on Education

(12 Hours)

Importance of Education- Education and Economic Development- Women's Education- Issues in Education.

### UNIT III: Investment on Health

(12 Hours)

Importance of human Resource in Health- Investment in Health-Healthcare Expenditure in India- Healthcare Issues and Challenges- Health Insurance for poor.

### UNIT IV: Labour Market

(12 Hours)

Theories of Labour Market- Wage theories-Trade Unions- Women and Child Labour- Labour Market Discrimination-Wage discrimination- Social Security in India.

### UNIT V: Human Resource Planning

(12 Hours)

Importance of Human Resource Planning-Forecasting Human resource requirements-Orientation and Training-Training process.

### Text Book

1. Jaysankar,J, Human Resource Management, Margham Publications, Chennai, 2011

**SEMESTER III  
SKILL BASED ELECTIVE PAPER I**

**UPHS31**  
Credits

**HOME APPLIANCES**

2 Hours/2

**Objective :** To introduce students with conceptual knowledge and skills regarding simple home appliance and its working.

**UNIT I:**

Electrical wiring – Earthing -switches & sockets-  
fuse-circuits breaker wiring of tube lights

**UNIT II:**

Geiser- protection –washing machine-top loading & front loading –  
drier-dish washer

**UNIT III:**

Microwave oven- induction stove-conventional oven- bread  
toaster- electric cooker-  
mixergrinder- vacuum cleaner

**UNIT IV:**

Emergency lamp-UPS-automatic street light- refrigerator

**UNIT V:**

Air-conditioner- window & split- air cooler- electric chimney- exhaust  
fans

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## NON-MAJOR ELECTIVE (NME)

COURSE CODE	COURSE TITLE	CHOICE - I	L	T	P	C
SEMESTER-III	HOUSEHOLD APPLIANCES		2	-	-	2

### OBJECTIVE

To understand the working principles of different household domestic appliances and connect the electrical appliances for the general household and wiring faults.

### UNIT-I

Voltage, Current, Resistance, Capacitance, Inductance, Electrical conductors and Insulators, Ohm's law, Series and parallel combination of resistors, Galvanometer, Ammeter, Volt meter, Multimeter, Transformers, Electrical energy, Power, Flow and unit (kWh), Consumption of electrical power.

### UNIT-II

Direct current and alternating current, RMS and peak values, Power factor, Single phase and three phase connections, Basics of House wiring, Electric shock, First aid for electric shock, Overloading, Earthing and its necessity, Short circuiting, Fuses, MCB, ELCB, Insulation, Inverter, UPS.

### UNIT-III

Principles of working, parts and servicing of Electric fan, Electric iron box, Water heater, Induction heater, Microwave oven, Refrigerator, Concept of illumination, Electric bulbs, CFL, LED lights, Energy efficiency in electrical appliances, IS codes & IE codes.

### UNIT IV

1. Studying the electrical performance and power consumption of a given number of bulbs connected in series and parallel circuits.
2. Measuring parameters in combination of DC circuits by applying Ohm's Law for different resistor values and voltage sources.
3. Awareness of electrical safety tools and rescue of person in contact with live wire.
4. Checking the specific gravity of lead acid batteries in home UPS and topping-up with distilled water.
5. Identifying phase, Neutral and Earth on power sockets.

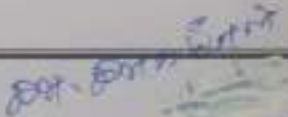
### UNIT V

1. Identifying primary and secondary windings and measuring primary and secondary voltages in various types of transformers.
2. Observing the working of transformer under no-load and full load conditions.
3. Observing the response of inductor and capacitor with DC and AC sources.
4. Observing the connections of elements and identify current flow and voltage drops.
5. Studying electrical circuit protection using MCBs, ELCBs.

### Text Books:

1. B.L. Theraja, A.K. Theraja, A Text book on Electrical Technology, S.Chand & Co., Reprint (2018)
2. M.G. Say, The Performance and Design of Alternating Current Machines, 2002

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SEMESTER IV  
SKILL BASED ELECTIVE  
PAPER II

UPHS42      BIOMEDICAL INSTRUMENTATION 2 Hours/2  
Credits

Objective: To introduce the undergraduate students with important biomedical instruments to know their body functions and its measurements through technical instruments.

Unit I

Bio-Potential Electrodes  
Electrodes- half of potential – purpose of electrode paste- Electrode material- types of electrode.

Unit II

Microelectrode-Metal microelectrode, Micropiper, depth and needle electrodes, surface electrodes.

Unit III

Metal plate electrodes, multi point electrode, chemical electrode, hydrogen electrode.

Unit IV

System Characteristics for ECG, EEG, EMG, ERC- EOC.

Unit V

Pace Maker- Pace Maker batteries- defibrillators, synchronized and square pulse defibrillators-nerve and muscle stimulators.

Books for study:

1. Biomedical Instrumentations – M. Arumugam- Anuradha agencies, Kumbakonam,

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SEMESTER V  
SKILL BASED ELECTIVE  
PAPER III

UPH853 ENTERTAINMENT ELECTRONICS 2  
Hours/2 Credits

**Objective:** To impart knowledge on basic electronic devices used for media and entertainment. Also to make them learn its construction and working in detail.

**UNIT I:**

Television, tape recorder and loud speaker, public address system, basic theory and working.

**UNIT II:**

Introduction to DVD, Cameras-film and digital camera

**UNIT III:**

Basic theory of VCD and Computer

**UNIT IV:**

i-pod, i-phone, cell phone and laptop

**UNIT V:**

Introduction to Internet-film and video projector-DTH

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SEMESTER VI

SKILL-BASED ELECTIVE PAPER IV

17H1864                      MICROPROCESSOR                      2 Hours/2 Credits

Objective: To make undergraduate students of physics aware of basic concepts of microprocessor, Architecture of 8085 and its applications, solve simple numerical using the concept.

Unit I

Architecture of 8085 – Register organization – Concept of buses – control signals

Unit II

Pin Configuration of 8085 – Addressing mode of 8085 with examples.

Unit III

Instruction Set – Types of Instruction – Classification – Classification of Instruction

Unit IV

Data Transfer Instruction – Branch Instruction – Arithmetic and Logic Instruction

Unit V

Sub-routines – Assemble Language – programming Simple Programs

Books for Study:

1. Microprocessor – B. Ram, Dhanpat Rai Publications, 2005.

Microprocessor, Architecture, Programming and Applications –  
Ramesh Goanker, Wiley Eastern Lt

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## NON-MAJOR ELECTIVE COURSES

Course Code	P21PHN211	ELEMENTS OF NANOSCIENCE AND NANOTECHNOLOGY	L	T	P	C
NME - I			5	-	-	4

**OBJECTIVES:**

- To provide the basic knowledge about basics nanoscience and technology
- To acquire the knowledge about synthesis methods and characterization techniques and its applications.

**UNIT I: OVERVIEW OF NANOSCIENCE**

Introduction -Emergence of Nanotechnology- Bottom up and top-down approaches-chemical potential as a function of surface curvature-interaction between two particles-DLVO theory-applications: band gap engineering quantum devices-nano mechanics-photoelectrochemical cells.

**UNIT II: DIFFERENT CLASSES OF NANOMATERIALS**

Metal and Semiconductor Nanomaterials, Quantum dots, Wells and Wires, Molecule to Bulk Transitions Bucky Balls and Carbon Nanotubes.

**UNIT III: SYNTHESIS OF NANOMATERIALS**

Top-down (Nanolithography, CVD), bottom-up (sol-gel processing, chemical synthesis), Wet Deposition Techniques, Self-assembly (Supra molecular approach), Molecular Design and Modeling.

**UNIT IV: CHARACTERIZATION**

TEM, SEM and SPM Technique, Fluorescence Microscopy and Imaging.

**UNIT V: APPLICATIONS**

Solar Energy Conversion and Catalysis, Molecular Electronics and Printed Electronics Nanoelectronics, Polymers with a special architecture, Liquid Crystalline Systems, Linear and Nonlinear Optical and Electro Optical properties, Applications in Displays and other devices, Advanced Organic Materials for Data Storage, Photonics, Plasmonics, Chemical and Biosensors, Nanomedicine and Nano Biotechnology.

**TEXT BOOKS:**

1. Hari Singh Nalwa, Nanostructured Materials and Nanotechnology, Academic Press, 2002.
2. G. Cao, Y. Wong, Nanostructures and Nanomaterials (Synthesis, Properties and Applications), World Scientific, 2<sup>nd</sup> Edition, 2011 (Unit I- V)

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## VALUE ADDED COURSES

Course Code	P21PHV111	CLASSIFICATION OF SOLAR FLARES IN X-RAYS	L	T	P	C
SEMESTER - I			30			2

**Objective:**

- To determine different types of Solar flares using WARM telescope data observed in Kodaikanal Solar Observatory

**Unit I**

Solar Interior structure (Pressure Density, temperature, generation of energy, radiative and convective zones), Solar Neutrino

**Unit II**

Solar Atmosphere: Photosphere-Model of solar photosphere- Chromosphere- corona

**Unit III**

Coronal Mass Ejection- Solar flares-Causes- Classification – A, B, C, M and X Classes-Its classification- Hazards

**Unit IV**

Optical Observation- Radio Observation- Space telescopes- White-light Active Region Monitor (WARM) Telescope – components- GOES X-ray space satellite

**Unit V**

Observation of Solar flare using WARM telescope at Kodaikanal Solar Observatory- Identification of different class

**Text Books**

- V.B. Bhatia, Textbook of Astronomy and Astrophysics with elements of cosmology. Alpha Science International India, 2000
- B.W.Carroll & D.A.Ostlie: An Introduction to Modern Astrophysics, 2<sup>nd</sup> Edn. Cambridge University Press, 2017
- Shu F, The Physical Universe, University of Science Press, 1981
- K.D.Abhyankar, Astrophysics: Stars and Galaxies- Tata McGraw Hill Publication 2001

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SEMESTER III  
NON MAJOR ELECTIVE PAPER  
I

UPHN31                      FUNDAMENTALS OF PHYSICS                      2 Hours/2  
Credits

Objective: To introduce non physics students with the basic concepts of physics

Unit I

Atomic constituents - Duality - Particles and waves - Uncertainty principle Phases of matter Internal energy and temperature - If Law of Thermodynamics - Conductors, Insulators & Semi-conductors Superconductivity and super fluidity.

Unit II

Particle dynamics: Displacement, velocity and acceleration- distance -time graph-velocity - time graph - projectile motion - uniform circular motion - tangential acceleration in circular motion - relative velocity and acceleration

Unit III

Gravitational force - Newton's law of gravitation - Electromagnetic force - Nuclear force- Central force - conservative force - Non conservative force - Work - Work done by a varying force - Energy - Kinetic Energy, Potential Energy - Power.

Unit IV

Crystal structures: Introduction - periodic array of atoms - crystal lattice - unit cell - basis - symmetry considerations - classification of crystals - Bravais lattices in three dimensions - crystal planes and Miller indices - simple crystal structures.

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Unit V

Conservation of energy - Planck's hypothesis - Mass-energy equivalence - Nuclear energy - Solar energy - Non-conventional sources of energy

Reference:

1. Mechanics - Prof. D.S Mathur. Revised by : Dr. P.S. Hemne. S. Chand and Co. New Delhi. First edition 1981, Reprint 2015.
2. D.S. Mathur, Elements of properties of matter, S. Chand and Co., New Delhi, 1949.
3. C. Kittel, Introduction to solid state physics - Wiley eastern 6<sup>th</sup> edition, 1953.
4. Physics of particles, Matter and the Universe: Roger J Blinsoyle - Institute of Physics Publishing, Bristol (1997)
5. Science Matters, Robert M. Hazen & James Trefil - Universities Press (India) Ltd., (1991)

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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**


**DEPARTMENT OF CHEMISTRY**

**SYLLABUS**



**M.V.MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN, DINDIGUL**  
**PG DEPARTMENT OF PHYSICS**  
**COURSE CUTTING ISSUES**  
**2022 - 2023**

S. N O	SUB.CODE	SUBJECT NAME	COURSE SIGNIFICANCE
1	SBE/UPHS42	BIOMEDICAL INSTRUMENTATION	Instruments that we are used to measure pressure, Heart beat, Temperature, blocks in brain, heart etc. and many other parameters are working under the physics principles. Lasers, Thermometer, Nebulizer, and Stethoscope etc. are some of the Biomedical instruments.
2	SBE/UPHS53	ENTERTAINMENT ELECTRONIC	Electronics which is also the main branch of Physics is used in communication and entertainment applications such as telephony and telegraphy, optical communications, television communication.
3	NME/UPHN31	FUNDAMENTALS OF PHYSICS	It explains the concepts essential for scientific understanding.
4	NME/UPHN42	ELECTRONICS IN DAILY LIFE	In daily life, we use appliances like Calculator, digital watches, mobile phones, laptops and computers. So it is essential to study the course ELECTRONICS IN DAILY LIFE.
5	NME/U21PHN311	HOUSE HOLD APPLIANCES	House Hold Appliances like air conditioners, dishwashers, clothes dryers, and washing machines are the Electronic house hold appliances. All the, house hold instruments are based on physics principles.

  
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**Head**  
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## IDENTIFICATION OF SOLAR RADIO BURSTS

Course Code	P21PHV423	ESTIMATION OF SOLAR DIFFERENTIAL ROTATION OF SUNSPOTS FROM KODAIKANAL SOLAR OBSERVATORY (KSO) DATA	L	T	P	C
SEMESTER - IV			30			2

**Objective:**

- To monitor Space weather using solar radio burst data observed in Kodaikanal Solar Observatory

**Unit I**

Solar Interior structure (Pressure Density, temperature, generation of energy, radiative and convective zones), Solar Neutrino

**Unit II**

Solar Atmosphere: Photosphere, Model of solar photosphere, Chromosphere, corona

**Unit III**

Sunspots, their properties, cyclic variation, connection with magnetic fields, solar prominences, solar flares, active regions

**Unit IV**

Solar Burst- Different types- Radio spectrometer- Detection

**Unit V**

Data collection from Radio spectrometer at Kodaikanal Solar Observatory- Analysis of Spectrum- Space Weather Monitoring

**Text Books**

- V.B. Bhatia, Textbook of Astronomy and Astrophysics with elements of cosmology, Alpha Science International India, 2000
- B.W.Carroll & D.A.Ostlie: An Introduction to Modern Astrophysics, 2<sup>nd</sup> Edn, Cambridge University Press, 2017
- Shu F, The Physical Universe, University of Science Press, 1981
- K.D.Abhyankar, Astrophysics: Stars and Galaxies- Tata McGraw Hill Publication 2001

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## NON MAJOR ELECTIVE

Course Code	U21CHN31	COSMETIC CHEMISTRY	L	T	P	C
SEMESTER - III			2	-	-	2
Learning Objectives	1. To create awareness among the undergraduate students about the role of chemistry in day- to- day life, 2. To know more about the cosmetics natural and artificial, 3. To obtain adequate knowledge and scientific information regarding basic principles of cosmetic chemistry.					

**Unit-I - Natural Perfumes**

Perfumes –plant and animal sources– examples –components of perfume – vehicle – characteristics of good vehicle -fixatives and its types, odoriferous compounds, extraction of essential oils by distillation, enlarge and solvent extraction methods.

**Unit- II - Artificial Perfumes and flavors**

Preparation and uses of methyl anthranilate, methyl salicylate, methyl cinnamate, phenyl ethanol, citronellol, vanillin, coumarin and heliotrope. Composition and preparation of rose and jasmine perfumes –manufacture of fruit flavors – fruit syrup preparation and composition of apple and pineapple flavors.

**Unit-III - Hair Care Products**

Shampoos – principal constituents – thickeners and foam stabilizers – perfumes – preservatives – conditioning agents – antidandruff shampoos. Hair cream – composition – hair dyes – types – constituents – dye removals

**Skin Care Product**

Skin cleansers – classifications – cold cream – cleansing milk – moisturizers – hand and body lotions – sun screen lotions – constituents

**Unit- IV - Soaps and Detergents**

Cleansing action of soap – differences between soap and detergents – ingredients and preparation of washing and bathing soap – TFM of bathing soap – composition of solid and liquid detergents – functions of ingredients in detergents.

**Unit- V- Colour Cosmetics**


Lipstick – constitutions – manufacturing method – lip glosses – nail polish – formulation – manufacture – face powder – constitution.

**Dental Product**

Oral care product – product categories – toothpaste – toothpowder – oral rinses – mouth washes.

**Text Books:**

1. Ramesh Kumari, Chemistry of Cosmetics, Prestige Publishers, 2018.
2. R. K. Nema, Textbook of Cosmetics, CBS, Publisher, 2017.

  
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Course Code	U21CHN42	APPLIED CHEMISTRY	L	T	P	C
SEMESTER -IV			2	-	-	2
Learning Objectives	1.To understand the preparation and properties of Rubber and Fibers 2. To understand the preparation and properties of Plastics and Resins. 3.To know the classification and importance of Fertilizers 4.To understand the use of chemicals in improvement of agricultural crops					

**Unit – I - Elastomers**

Natural rubber and synthetic rubber - Buna - N, Buna-S and neoprene. Rubber: Types-defects in natural rubber-vulcanization-synthetic rubbers- uses of neoprene, thiocol, silicone rubber and foam rubber.

**Unit – II - Fibers**

Definition, natural and synthetic fibers:Natural fibers (cellulosic and proteinous) –Semi synthetic (Rayon) Synthetic fibers (Poly ester, Nylon and Acrylic) –Pretreatment of fibers (Sizing, Desizing, Bleaching).

**Unit – III - Resins**

Natural and synthetic resins – distinction between resins and plastics, action of ion exchange resins, separation of inorganic mixtures, applications, phenol- formaldehyde resins -amino resins-urea- formaldehyde and melamine-formaldehyde resins-polyurethanes -epoxy resins.

**Unit – IV – Plastics**

Classification- differences between thermoplastics and thermosetting polymers. Advantages of plastics-preparation, properties and uses of polythene, PVC, polystyrene, Teflon and PAN.

**Unit –V – Fertilizer**

Definition-characteristics of a good fertilizer- role of nitrogen, potassium and phosphorous in plant growth – natural fertilizers- chemical fertilizers: urea, muriatic of potash and triple superphosphate - mixed fertilizers – biofertilizers – advantages of biofertilizers.

**Text Books**

1. B. S. Chauhan, Applied Chemistry, Vayu Education India, 2013.
2. B. K. Sharma, Industrial Chemistry Krishna PrakashanMedia(p) Ltd., 2011

**Reference Books**

1. B.S Chauhan, Applied Chemistry, Vayu Education of India, 2013.
2. K. BagavathiSundari, "Applied Chemistry" MJP Publishers, 2006.

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## SEMESTER-III

### SKILL BASED SUBJECT- PAPER I

UCHS31

WATER TREATMENT

2hours/2credits

#### Objective

1. To give an in-depth understanding of water quality parameters, ground water and surface water pollution and its control measures.
2. In addition, the students will also learn the water treatment methods, sewage and industrial effluent treatment methods and water resources management.
3. To understand the pollutants and their effect on environment and on human health
4. To know the basic information of water treatment methods for domestic and industrial purposes

#### UNIT -I

Uses of water – safe and wholesome water – sources of water supply: Rain: hydrological cycle, acid rain, artificial rain, rain water harvesting. Surface water; impounding reservoir, river and tanks – their characteristics and impurities. Ground water; wells and springs. Water borne diseases/substances affecting the potability of water.

#### UNIT – II

Effects of impurities in natural waters: colour taste and odour, turbidity and sediment and micro organism. Dissolved mineral matter – hardness types – estimation (EDTA method) – methods of softening – boiling, addition of lime – addition of sodium carbonate – ion exchange method.

#### UNIT – III

Clarification of water: sedimentation and filtration. Coagulation of water electrochemical coagulation – flocculants – sterilization and disinfection of water: chemical methods and physical methods.

#### UNIT- IV

Demineralization of water – ion exchange process – desalination of sea water: electro dialysis method, reverse osmosis methods.

Water analysis: physical examination – chemical examination bacteriological examination – BOD, COD.

#### UNIT – V

Miscellaneous methods of water treatment: color, odour and taste removal – iron and manganese removal – fluoridation – defluoridation, prevention of plumb solvency – removal of slime and algae from water - de- oxygenation of water.

SEMESTER IV

SKILL BASED SUBJECT- PAPER II

UCHS42

CLINICAL CHEMISTRY

2hours/2credits

Objectives

1. To understand the basics of blood and composition
2. To impart knowledge on clinical biochemistry and laboratory practices.
3. To understand the normal and abnormal constituents of urine
4. To gain the clinical demonstration of Blood grouping, Rh factor, Blood Glucose and Hb content

UNIT -I

Blood – composition and their role in health and disease, blood grouping, Rh factor, Blood pH.

UNIT-II

Electrolytic balance, function of plasma proteins, Albumin – Globulin ratio, clotting mechanism, blood pressure, coagulant and anticoagulant.

UNIT -III

Blood lipid, arteriosclerosis, lipid profile, blood sugar, blood glucose and its regulation, glucose tolerance test (GTT).

UNIT -IV

Urine – normal and abnormal constituents of urine, renal function test.

UNIT -V

Only demonstration

- a. Blood grouping
- b. Rh factor
- c. Blood Glucose
- d. Hb content

Text Book

I. Practical Clinical Biochemistry: Methods and Interpretations, R. Chawla, 3rd Edn., Jaypee Brothers Medical Publishers, New Delhi, 2003.

Reference Book

I. Fundamentals of Practical Clinical Biochemistry, B. Mohanty and S. Basu, B. I. publishers, New Delhi, 2006.

  
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SEMESTER V

SKILL BASED SUBJECT – III

SBS3

EVERYDAY CHEMISTRY

2hours/Week

UNIT – I

Dairy chemistry milk – definition – general composition of milk – constituents of milk lipids, proteins, carbohydrates, vitamins and minerals. Physical properties of milk – colour, odour, acidity, specific gravity, viscosity and conductivity. Factors affecting the composition of milk – pasteurization, homogenization, toning, standardization, reconstitution of milk - adulteration of milk.

UNIT – II

Mineral metabolism: calcium – source, daily requirement, blood calcium, hypocalcemia, phosphorus – functions of phosphate, requirement, source, normal serum level, functions. Sodium – normal level of sodium, excretion of sodium, restriction of sodium in diet, hypematremia.

UNIT – III

Preparation of tooth powder, paste, talcum powder, shampoo, handkerchief perfumers, dry perfume sachets, soap powder, dishwashing powder, various soaps, toilet cleaning liquids.

UNIT – IV

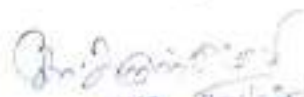
Wax products – candles, boot polish, furniture polish paste.  
Ink – blue, red, blue black, white board marker, printing ink, ink for stamp pad.

UNIT – V

Safety matches – agarbathies naphthalene balls – chalk crayons – insecticides such as lice killer, mosquito repellent, cockroach terminator, moth repellent. Simple medicines: pain balm, digestive tablet, disinfectant solutions

Reference Books

1. Small Scale Industries by B.S. Sedar, Jaime Publications, Ombay, 1975.
2. Neengalum Siru Thozhil Nadathalam (Tamil Version) S.A. Soosairaja, New Century Book House Pvt. Ltd, Chennai, 1983

  
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## SEMESTER-VI

### TEXTILE CHEMISTRY

UCHS64

SKILL BASED SUBJECT PAPER – IV

2hours/2credits

#### Objective

1. To facilitate the students to learn about the pre-treatments of various kinds of textile materials involved in textile wet processing industries.
2. To acquire knowledge of natural fibres
3. To get basic importance of dyeing process
4. To understand the basic concept of printing methods

#### UNIT – I

Natural Fibre: properties of textile fibres – classification of fibres. Natural fibres of vegetable origin – chemical and physical properties of cotton, jute. Natural fibres of animal origin: chemical and physical properties of wool and silk – natural mineral fibres: chemical and physical properties of asbestos and glass.

#### UNIT – II

Man made fibre: mode of production – types of spinning – wet dry and melt spinning.

- a. viscose rayon: Raw material, method of conversion to fibre and filament form. Physical and chemical properties and uses.
- b. Cuprammonium rayon and cellulose acetate: raw materials, method of conversion to fibre and filament form. Physical and chemical properties and uses.
- c. Synthetic organic fibre: polyamide and polyester fibre – raw materials, method of production, physical and chemical properties fibre structure.

#### UNIT – III

Pre – treatment process for dyeing:

Study of operation, principles and different agent for singeing, desizing, scouring and bleaching.

#### UNIT – IV

Dyeing: classification of dyes – theories of dyeing

Direct dye: properties, method of application to cotton – assistants used and their functions.

Sulphur dye: properties, method of application to cotton. Acid dye: properties, method of application to cotton.

Vat dye: properties, method of application to cotton.



SEMESTER -III

APPLIED CHEMISTRY – PAPER I  
NON – MAJOR ELECTIVE

UCHN31

2hours/2credits

Objective

1. To understand the preparation and properties of Rubber and Fibers
2. To understand the preparation and properties of Plastics and Resins.
3. To know the classification and importance of Fertilizers
4. To understand the use of chemicals in improvement of agricultural crops

UNIT – I

Rubber – natural and synthetic rubbers, composition of natural rubber, neoprene rubber, styrene butadiene rubber (SBR).

UNIT – II

Fibers – definition, natural and synthetic fibers.

UNIT – III

Resins – natural and synthetic resins – distinction between resins and plastics.

UNIT – IV

Plastics – classification, properties, Bakelite, Urea, Formaldehyde, Teflon, Nylon-66, and Dacron.

UNIT –V

Fertilizers – definition, classification, urea, super phosphate, potassium nitrate, mixed fertilizer.

Text Books

1. Norris shreve, R. and Joseph A. Brink, J. Chemical process industries, 4th ed.; Mc Graw – Hill Kogakusha, Ltd: 1977.
2. George T. Austin. Shreve's chemical process industries, 5th ed.; Mc Graw – Hill: 1984.

Reference Books

1. Subba rao, N. S. Biofertilizers in agriculture; oxford and IBH publishing co.: New Delhi, 1982.
2. Jain, P. C. and Jain, M. Engineering chemistry, 10th ed.; Dhanpat Rai and sons: Delhi, 1993
3. Kamaraj, P.; Jeyalakshmi, R. and Narayanan, V. Chemistry in engineering and technology; sudhandhira publications: chennai, 2001

  
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## SEMESTER IV

### APPLIED CHEMISTRY - PAPER II

UCHN42

NON-MAJOR ELECTIVE

2hours/2credits

#### Objectives

1. The generation of energy from various types of fuels.
2. To gain knowledge in silicate industry, match industry
3. Pollution occurring from various sources and resulting toxic effects
4. To acquire basic knowledge in Explosives

#### UNIT - I

Match Industry – Raw materials – manufacturing process, pyrotechnics coloured smokes.

#### UNIT - II

Explosives – definition classification, Nitroglycerine, dynamite cordite, TNT and Picric acid.

#### UNIT - III

Silicate Industry – Cement and Glass, Raw materials and manufacture of cement and glass.

#### UNIT - IV

Petrochemicals – definition, origin, composition chemicals from natural gas, petroleum, light naphtha and kerosene, LPG.

#### UNIT - V

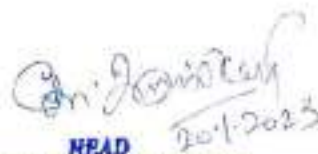
Photography – colour photography.

#### Text Books

1. Norris Shreve, R. and Joseph A. Chemical process industries, 4th ed.; Mc Graw – Hill Kogakusha, Ltd: 1977.
2. George T. Austin. Shreve's chemical process industries, 5th ed.; Mc Graw – Hill: 1984.

#### Reference Books

1. Subba Rao, N. S. Biofertilizers in agriculture; oxford and IBH publishing co.: New delhi, 1982.
2. Jain, P. C. and Jain, M. Engineering chemistry, 10th ed.; Dhanpat Rai and sons: Delhi, 1993
3. Kamaraj, P.; Jeyalakshmi, R. and Narayanan, V. Chemistry in engineering and technology; Sudhandhira publications: chennai, 2001.
4. Kuriakose, J. C. and Rajaram, J. Chemistry in engineering and technology. Vol 2.; Tata Mc Graw Hill: New Delhi, 1988.
5. De, A.K. Environmental chemistry 2nd ed.; Wiley Eastern Ltd., 1987.

  
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## SEMESTER V

### SKILL BASED SUBJECT – III

UCH853

EVERYDAY CHEMISTRY

2hours/2credits

#### Objectives

1. To understand the basic knowledge in Food Chemistry and modern trends in the industry.
2. To create awareness among the undergraduate students about the role of chemistry in day- to- day life
3. To know more about the cosmetics and other chemicals that they uses
4. To obtain adequate knowledge and scientific information regarding basic principles of everyday chemistry.

#### UNIT – I

Dairy chemistry milk – definition – general composition of milk – constituents of milk lipids, proteins, carbohydrates, vitamins and minerals. Physical properties of milk – colour, odour, acidity, specific gravity, viscosity and conductivity. Factors affecting the composition of milk – pasteurization, homogenization, toning, standardization, reconstitution of milk - adulteration of milk.

#### UNIT – II

Mineral metabolism: calcium – source, daily requirement, blood calcium, hypocalcemia, phosphorus – functions of phosphate, requirement, source, normal serum level, functions. Sodium – normal level of sodium, excretion of sodium, restriction of sodium in diet, hypernatremia.

#### UNIT – III

Preparation of tooth powder, paste, talcum powder, shampoo, handkerchief perfumers, dry perfume sachets, soap powder, diswashing powder, various soaps, toilet cleaning liquids.

#### UNIT – IV

Wax products – candles, boot polish, furniture polish paste.  
Ink – blue, red, blue black, white board marker, printing ink, ink for stamp pad.

## SEMESTER-VI

### TEXTILE CHEMISTRY

SBS4 / SBETC

SKILL BASED SUBJECT PAPER – IV

2hours/ Week

#### UNIT – I

Natural Fibre: properties of textile fibres – classification of fibres. Natural fibres of vegetables origin – chemical and physical properties of cotton, jute. Natural fibres of animal origin: chemical and physical properties of wool and silk – natural mineral fibres: chemical and physical properties of asbestos and glass.

#### UNIT – II

Man made fibre: mode of production – types of spinning – wet dry and melt spinning.

- viscose rayon: Raw material, method of conversion to fibre and filament form. Physical and chemical properties and uses.
- Cuprammoniumrayon and cellulose acetate: raw materials, method of conversion to fibre and filament form. Physical and chemical properties and uses.
- Synthetic organic fibre: polyamide and polyester fibre – raw materials, method of production, physical and chemical properties fibre structure.

#### UNIT – III

Pre – treatment process for dyeing:

Study of operation, principles and different agent for singeing, desizing, scouring and bleaching.

#### UNIT – IV

Dyeing: classification of dyes – theories of dyeing

Direct dye: properties, method of application to cotton – assistants used and their functions.

Sulphur dye: properties, method of application to cotton. Acid dye: properties, method of application to cotton.

Vai dye: properties, method of application to cotton.

#### UNIT – V

Printing: different methods of printing like hand block printing, stencil printing, wax printing, screen printing, roller printing etc.

#### Reference Book

1. Textile Science, E.P.G Gohl and D. Vilensky
2. Textile Scouring and bleaching, E.R. Trotman
3. Technology of Dyeing, Dr. V.A. Shenai
4. Textile Fiber for dyeing, Bernard P. Carbmam

  
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## SEMESTER IV

### APPLIED CHEMISTRY - PAPER II

UCHN42

NON-MAJOR ELECTIVE

2hours/2credits

#### Objectives

1. The generation of energy from various types of fuels.
2. To gain knowledge in silicate industry, match industry
3. Pollution occurring from various sources and resulting toxic effects
4. To acquire basic knowledge in Explosives

#### UNIT - I

Match Industry – Raw materials – manufacturing process, pyrotechnics coloured smokes.

#### UNIT - II

Explosives – definition classification, Nitroglycerine, dynamite cordite, TNT and Picric acid.

#### UNIT - III

Silicate Industry – Cement and Glass, Raw materials and manufacture of cement and glass.

#### UNIT - IV

Petrochemicals – definition, origin, composition chemicals from natural gas, petroleum, light naphtha and kerosene, LPG.

#### UNIT - V

Photography – colour photography.

#### Text Books

1. Norris Shreve, R. and Joseph A. Chemical process industries, 4th ed.; Mc Graw – Hill Kogakusha, Ltd: 1977.
2. George T. Austin. Shreve's chemical process industries, 5th ed.; Mc Graw – Hill: 1984.

#### Reference Books

1. Subba Rao, N. S. Biofertilizers in agriculture; oxford and IBH publishing co.: New delhi, 1982.
2. Jain, P. C. and Jain, M. Engineering chemistry, 10th ed.; Dhanpat Rai and sons: Delhi, 1993
3. Kamaraj, P.; Jeyalakshmi, R. and Narayanan, V. Chemistry in engineering and technology; Sudhandhira publications: chennai, 2001.
4. Kuriakose, J. C. and Rajaram, J. Chemistry in engineering and technology. Vol 2.; Tata Mc Graw Hill: New Delhi, 1988.
5. De, A.K. Environmental chemistry 2nd ed.; Wiley Eastern Ltd., 1987.

*Dr. Jeyalakshmi*  
20.1.2023

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**SEMESTER IV**  
**APPLIED CHEMISTRY - PAPER II**

**NME2**

**NON-MAJOR ELECTIVE**

**2hours/week**

**UNIT - I**

Match Industry – Raw materials – manufacturing process, pyrotechnics coloured smokes.

**UNIT - II**

Explosives – definition classification, Nitroglycerine, dynamite cordite, TNT and Picric acid.

**UNIT - III**

Silicate Industry – Cement and Glass, Raw materials and manufacture of cement and glass.

**UNIT - IV**

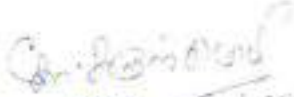
Petrochemicals – definition, origin, composition chemicals from natural gas, petroleum, light naphtha and kerosene, LPG.

**UNIT - V**

Photography – colour photography.

**Reference**

Inorganic Chemistry by P.L.Soni

  
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## SEMESTER-III

### SKILL BASED SUBJECT- PAPER I

SBSI

WATER TREATMENT

2hours/ week

#### UNIT - I

Uses of water – safe and wholesome water – sources of water supply: Rain: hydrological cycle, acid rain, artificial rain, rain water harvesting. Surface water: impounding reservoir, river and tanks – their characteristics and impurities. Ground water; wells and springs. Water borne diseases/substances affecting the potability of water.

#### UNIT - II

Effects of impurities in natural waters: colour taste and odour, turbidity and sediment and micro organism. Dissolved mineral matter – hardness types – estimation (EDTA method) – methods of softening – boiling, addition of lime – addition of sodium carbonate – ion exchange method.

#### UNIT - III

Clarification of water: sedimentation and filtration. Coagulation of water electrochemical coagulation – flocculants – sterilization and disinfection of water: chemical methods and physical methods.

#### UNIT- IV

Demineralization of water – ion exchange process – desalination of sea water: electro dialysis method, reverse osmosis methods.

Water analysis: physical examination – chemical examination bacteriological examination – BOD, COD.

#### UNIT - V

Miscellaneous methods of water treatment: color, odour and taste removal – iron and manganese removal – fluoridation – defluoridation, prevention of plumb solvency – removal of slime and algae from water - de- oxygenation of water.

  
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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF BOTANY**

**SYLLABUS**



**SKILL BASED STUDIES- I- MUSHROOM TECHNOLOGY- UBOS31**

**Credits:2**

**Hours:2**

**Objectives**

- Have knowledge on general identification characteristics of mushroom
- Understand the types of edible mushroom
- Have idea on growing conditions of mushroom
- Exhibit an idea on harvesting methods.

**UNIT I**

Introduction - history - scope of edible mushroom cultivation - Types of edible mushrooms available in India - *Volvariella volvacea*, *Pleurotus citrinopileatus*, *Agaricus bisporus*.

**Unit II**

Pure culture - preparation of medium (PDA and Oatmeal agar medium) sterilization - preparation of test tube slants to store mother culture - culturing of *Pleurotus* mycelium on petriplates, preparation of mother spawn in saline bottle and polypropylene bag and their multiplication.

**UNIT III**

Cultivation Technology : Infrastructure: substrates (locally available) Polythene bag, vessels, Inoculation hook, inoculation loop, low cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag, Mushroom bed preparation - paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation - Low cost technology, Composting technology in mushroom production.

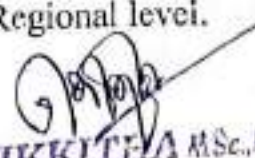
**UNIT IV**

Storage and nutrition : Short-term storage (Refrigeration - upto 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fibre content - Vitamins.

**UNIT V**

Food Preparation

1. Types of foods prepared from mushroom; Soup, Cutlet, Omelette, Samosa, Pickles, Curry, Muchurian and salads.
2. Research Centres - National level and Regional level.

  
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024 009

SEMESTER: VI

SKILL BASED ELECTIVE IV

BIOFERTILISER

UNIT I

Introduction of bio fertilizer, Rhizobium. Inoculants - Isolation, identification, classification, Rhizobium in soil and root nodules.

UNIT II

Azobacter inoculants - Isolation, identification, classification, Azobacter in soil, physiology and function, maintenance and cultivation, crop response, application and importance.

UNIT III

Azospirillum inoculants - isolation, identification, classification, azospirillum in soil and root, physiology and functions, carrier based inoculants, maintenance and cultivation, crop response, application, N<sub>2</sub> fixing bacteria on sugarcane and cereals.

UNIT IV

Blue green algal inoculants - Isolation preparation and multiplication BGA in rice yield. Azolla - mass cultivation and uses, green manure - uses - work done on bio fertilizers in india.

UNIT V

VERMICOMPOSING

Introduction - Bins - small scale - large scale - starting off - bedding, temperature - food suitable - unsuitable - bin maintenance, feeding - harvesting, vermicomposting properties - problems, commercially available vermicomposting systems - vermicomposting for small farms - vermicompost and plants.

REFERENCES:

- Text book of biotechnology - R.C.dubey.
- Bio fertilizers in agriculture and forestry - N.S. SunnaRao.

  
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SEMESTER: V

SKILL BASED ELECTIVE - III  
FOOD PROCESSING AND PRESERVATION

**UNIT I**

Introduction of food processing.

**UNIT II**

Processing and preservation methods

Curing - Drying - Canning and Bottling - Additives - Freezing and Refrigeration

**UNIT III**

Controlled atmosphere storage - Aseptic packaging - Fermentations - Pasteurization - Vacuum Packing - Jellying - Salting

**UNIT IV**


Food packaging – Food distribution – Government monitoring and regulation – HACCP.

**UNIT V**

Botulism – major diseases in canned foods – controlled use of microorganisms.

**REFERENCES**

- Riddervold , Astri. Food conservation.
- Bentley , Amy , Eating for victory. Food rationing and the policies of domesticity.
- Shephard , Sue, Pickled , Potted and canned: How the art and science of food preserving changed the world.

  
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**ELECTIVE IV- BIODIVERSITY AND CONSERVATION**  
**- UBOE64**

**Credits: 3**

**Hours:3**

**Objectives**

- To know the basics concepts of Biodiversity and its conservation.
- To understand the principle and approaches of conservation.
- Learn about the Insitu and Exsitu conservation methods.
- Acquire knowledge on Environment assessment and monitoring.

**Unit 1**

Biodiversity and Conservation: Categories of biodiversity – species concepts: keystone, flagship, dominant and co-dominant species – Biogeography: Major terrestrial biomes – theory of island biogeography – Biogeographical zones of India – Principles and approaches of conservation – In-situ conservation: National parks, Wildlife Sanctuaries, Biosphere reserves – Ex-situ conservation: Botanical and herbal gardens, zoological parks, seed orchards and gene banks.

**Unit II**

Values of biodiversity-ecosystem services- screening plants for medicines- New agricultural and industrial products from the tropics- identifying and protecting the origin of food crops. Speciation- species area relationship: productivity- diversity relationship - Biodiversity hot spot.

**Unit III**

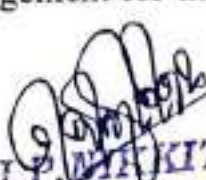
The effect of global climatic change on natural communities- IUCN categories of extinction- red data book – causes for species extinction – impact of exotic species on native species – GMOs and biosafety – Intellectual property rights- GATT,WTO, farmers and breeders rights- Biodiversity act -2002.

**Unit IV**

Remote sensing : Introduction-Analysis techniques-Digital image processing Role of remote sensing in biodiversity management-GIS and biodiversity, landscape elements Oceans colour and fishery, water security. Environment assessment and monitoring.

**Unit V**

Conservation: In situ and Ex situ conservation methods- conservation of biological diversity in Botanical gardens- Information management for the conservation of biodiversity. Cryobiology-

  
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Department of Botany  
Center for Women



Code	BIOFERTILIZER AND WASTE MANAGEMENT			L	T	P	C
ELECTIVE-III				3	-	-	3
Cognitive Level	K1: Recall K2: Understand K3: Apply						
Learning objective	<ul style="list-style-type: none"> <li>To learn mass cultivation of biofertilizers</li> <li>To study the production of various manures</li> <li>To understand and practice solid waste management</li> </ul>						
Unit I	<b>Biofertilizers</b>						
Introduction, Scope, Advantages and limitations. Types of Biofertilizers; Based on nutrients and microbes. Mechanism of Symbiotic and Non- Symbiotic (Free living) nitrogen fixation. Root nodule formation							
Unit II	<b>Production</b>						
Mass production of cyanobacterial biofertilizers <i>Nostoc</i> and <i>Anabaena</i> , bacterial biofertilizers- <i>Azotobacter</i> , <i>Azospirillum</i> , <i>Rhizobium</i> and <i>Pseudomonas</i> and duck weed fern ( <i>Azolla</i> ).							
Unit III	<b>Manures</b>						
Composts, farmyard manure, oil seed cakes (Castor and Neem), green leaf manures, vermicompost and agro-industrial wastes							
Unit IV	<b>Municipal solid waste</b>						
Sources and types of solid wastes, composition and its determinants. Factors influencing its generation							
Unit V	<b>Disposal of solid wastes</b>						
refuse disposal –methods of refuse disposal. Sanitary landfills- methods of operation – advantages and disadvantages of sanitary landfills							
Text books	<ol style="list-style-type: none"> <li>Abdin M.K., Kiran U. Kamaluddin &amp; Ali, A. Plant Biotechnology: Principles and Applications. Springer, 2017.</li> <li>Krohne D. T. Ecology: Evolution, Application, Integration. Oxford Univ. Press, 2017.</li> <li>Poul V.I. Biodiversity: Issues, Impact, Remediations and Significance 1st Edition. V L Media Solutions, 2013.</li> </ol>						
Reference books	<ol style="list-style-type: none"> <li>Krishnendu Acharya, Surjit Sen, Manjula Rai, Biofertilizers and Biopesticides, Technoworld Publishers, Kolkatta, 2019.</li> <li>Khesla, R. Biofertilizers and Biocontrol Agents for Organic Farming, Kejo Press, Delhi, 2017</li> <li>Panda, H., Manufacture of Biofertilizer and Organic Farming, Published by National Institute of Industrial Research, 2011.</li> <li>Subba Rao, N.S., Soil Microbiology, Meditech Publishers, Delhi, 2017.</li> </ol>						
E-References	<ol style="list-style-type: none"> <li><a href="http://ndl.iitkgp.ac.in/document/Qkh4R2FGUkRNZjFicFUvMmpzQ2loU1NP'aE16eMpVaXpnNGUMc2liQzZKbM11L2Fxc1hFSUpPdGjVaVpXMV.510pGTjNuU1NBZjdld08vQnZ1eThMQ3e9PQ">http://ndl.iitkgp.ac.in/document/Qkh4R2FGUkRNZjFicFUvMmpzQ2loU1NP'aE16eMpVaXpnNGUMc2liQzZKbM11L2Fxc1hFSUpPdGjVaVpXMV.510pGTjNuU1NBZjdld08vQnZ1eThMQ3e9PQ</a></li> <li><a href="http://ndl.iitkgp.ac.in/document/Qkh4R2FGUkRNZjFicFUvMmpzQ2loZDI3a">http://ndl.iitkgp.ac.in/document/Qkh4R2FGUkRNZjFicFUvMmpzQ2loZDI3a</a></li> </ol>						

  
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SEMESTER: III

SKILL BASED ELECTIVE I

PLANT PROPAGATION AND NURSERY MANAGEMENT

UNIT 1 ✓

Propagation - Basic concept – types of plant propagation along with merits and demerits.

Seed treatment – seed germination and seed dormancy - Apomixes

UNIT 2 ✓

Common origin method - Cutting – root cutting, stem cutting, leaf cutting

Layering – simple layering, air layering, mound layering

Specialized structures – bulbs, tubers, rhizomes

UNIT 3 ✓

Separate origin method - Budding – shield budding, patch budding, ring budding

Grafting – simple grafting, tongue grafting, veneer grafting

Stock-scion relationship

Factors affecting budding and grafting

UNIT – 4 ✓

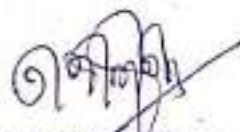
Definition – importance – scope and types - Site selection, components and layout of nursery

UNIT 5

Media containers and propagation structures - After care in nursery - Nursery Act

REFERENCES

- Hartman, H.T. and D.E. Kester, 1989 – Plant propagation principles and practices. Prentice Hall of India, New Delhi
- Bose, T.K., B.S. Mitra and M.K. Sadhu, 1986 – propagation of tropical and sub tropical crops.



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SEMESTER: III

NON- MAJOR ELECTIVE PAPER- 1

MUSHROOM CULTURE

UNIT I

Introduction to Mushroom Cultivation – Internal & External Structure of Mushroom Types of Edible & Non – Edible Mushrooms Systematic Position – Identification of Poisonous mushrooms.

UNIT II

Techniques Of Mushroom Cultivation – Compost, Composting Casing Materials, Spawn Production, Nutritional Requirements, And Maintenance Of Mushrooms Sheds – Storage, Preservation Marketing, And Commercial Significance Of Mushrooms. ✓

UNIT III

Working procedure for cultivation of Button mushroom (*Agaricus bisporous*) and Paddy straw mushroom (*Volveriella volvaceae*)

UNIT IV

Risks involved in mushroom cultivation – common pathogens affecting mushrooms (bacterial, fungal, insects and nematodes) health issues of consumers due to contaminants of edible mushrooms.

UNIT V

Nutritive value and uses of mushroom, processing of mushroom few recipes – Omelette, Soup, Pakodas, Pickle, Mushroom Biryani.

REFERENCES:

- Bahl.N., 2009, hand book on mushrooms, 4<sup>th</sup> edition, Oxford and IBH publishing co.pvt., Ltd., New Delhi.
- Fletcher . J.T., white P.F., &Gaze.R.H., Pest and Disease control, intercept limited . pontelad, new castle, England .
- Kappor .J.N ., 1989, *Mushrooms Cultivation*, ICAR Publication, Krishi Anusandhan, Pusa, New Delhi.



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SKILL BASED ELECTIVE II  
MUSHROOM CULTIVATION

**UNIT 1**

Introduction – growing mushroom – mushroom on farm and in the garden.

**UNIT 2**

Morphology of mushroom- Internal & External Structure of Mushroom Types of Edible & Non – Edible Mushrooms

**UNIT 3**

Techniques Of Mushroom Cultivation – white button, paddy straw and oyster mushroom- Compost, Composting Casing Materials, Spawn Production, Nutritional Requirements of edible mushroom.

**UNIT 4**

Types – poisonous and non poisonous.

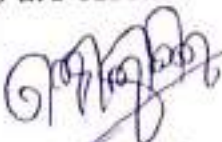
Pest and Disease management of edible mushrooms with reference to Green mold disease.

**UNIT 5**

Maintenance Of Mushrooms Sheds – Storage, Preservation – Marketing and Commercial Significance Of Mushrooms.

**REFERENCES**

- 1 Anon. 1998. Grower's business is mushrooming. Small Farm Digest. Winter.P.3.
- 2 Anon. 2003. Small Farms Research News.Spring.P.3.
- 3 Cooner, Deanna. 2001. Mushroom farming. Agventures. June-July p. 14-15
- 4 Edwards, Richard. 2000. The missing link? Mushrooms in permaculture. Permaculture Magazine.No.25. p. 37-39.
- 5 Ludmer – Gliche, Susan. 1997. Sheep are essential to French truffle production. November . p. 4-5.

  
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SEMESTER: IV

RME

NON-MAJOR ELECTIVE PAPER- II

HORTICULTURE

UNIT I

Introduction- Divisions of horticulture- Pomology- Olericulture- Floriculture- Importance of horticulture.

UNIT II

Vegetative propagation: cuttage – root cutting, stem cutting, leaf cutting layerage – simple, compound layering, trench and air layering. Graftage: side grafting, whip grafting, cleft grafting. Advantages of vegetative propagation.

UNIT III

Establishment of orchard, layout of orchards – Planting, harvesting, marketing and storage of fruits and preservation of fruits.

UNIT IV

Type of vegetable growing: kitchen garden – market gardening, truck garden, vegetable seed industry. Preservation of vegetables.

UNIT V

Indoor gardening: Types of indoor gardening. Indoor plants, hanging baskets, Bonsai- Bottle garden. Flower arrangement and Dry decoration.

REFERENCES:

- Adams C.R., Early M.P. 2004. Principles of horticulture. Elsevier, N.Delhi.
- Edmond J.B., Senn T.L., Andrews F.S., Halfacre P.G. 1975. Fundamentals of horticulture, 4<sup>th</sup> edition. TMHN, Delhi.
- John weathers. 1993, encyclopedia of Horticulture. Discovery Pub. House. New delhi.
- Kumar N., 1994. Introduction to horticulture. Rajalakmi Pub.
- Manibhushanrao k. 2005. Text book of horticulture. Macmillan India Ltd.
- Randhawa G.S., Mukhopadhyay A. 1986. Floriculture in india. Allied pub pvt ltd. Ahamedabad.

  
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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF ZOOLOGY**

**SYLLABUS**

7

ELECTIVE II (THEORY)

UZOE42

Sub code: UZOE42

Option 1: MEDICAL LABORATORY TECHNOLOGY

3 hrs/3 credits

Objectives

- To learn the proper procedure for the collection, safe handling and analysis of biological specimens.
- To discuss about the medical diagnostics methods used for analysis of Blood.
- To know the urine test, blood test and important human diseases.
- By this paper student can enlighten the skills of basic medical techniques.

UNIT I

Introduction to Medical Diagnostics and its Importance Diagnostics Methods Used for Analysis of Blood- Blood composition, Preparation of blood smear and Differential Leucocyte Count (DLC) using Leishman's stain, Platelet count using haemocytometer, Erythrocyte Sedimentation Rate (E.S.R), Packed Cell Volume (P.C.V.)

10

EP

UNIT II

Blood analysis - Physical characteristics; Abnormal constituents, Detection of sugar, albumin, Bilirubin and pregnancy test, (b) Blood analysis - Blood grouping, Haemoglobin estimation, Cell counts DC/TC.

10

AN

UNIT III

Diseases - Causes, types, symptoms, complications, diagnosis and prevention of Bacterial Diseases - primary complex Helminthes diseases - round worm: Diabetes (Type I and Type II), Tuberculosis (Primary and secondary), diagnosis and prevention of Tuberculosis and Hepatitis Vaccination schedule in India

15

AN

UNIT IV

First Aid (a) Heart attack (b) Electric shock (c) Fire accident (d) Burns (e) Snake bite and dog bite (f) Nose bleeding and shocking (h) Road accident.

5

EP

UNIT V

Diagnosis of Cancer: Types Benign/Malignant, Detection and metastasis; Medical imaging: X-Ray of Bone Joints, PET, MRI and CT Scan.

5

AN

REFERENCE

1. Notes on Clinical Lab Techniques, Root & I. Samuel. M. K. G. Iyyer & Sons Publ. Co, Chennai, 1992.  
 2. Medical Laboratory Technology Vol. 1,2& 3, Mukherjee. Tata McGraw Hill publ. Co, New Delhi, 2006.  
 3. Medical Laboratory Science. Theory and practice. Ochei, Tata McGraw Hill publ. Co,



Biological Clocks

Relevance of biological clocks; Chronopharmacology, Chronomedicine, Chronotherapy.

REFERENCE

David McFarland, Animal Behaviour, Pitman Publishing Limited, London, UK.

Manning, A. and Dawkins, M. S, An Introduction to Animal Behaviour, Cambridge, University Press, UK.

John Alcock, Animal Behaviour, Sinauer Associate Inc., USA.

Paul W. Sherman and John Alcock, Exploring Animal Behaviour, Sinauer Associate Inc., Massachusetts, USA.

Chronobiology Biological Timekeeping: Jay. C. Dunlap, Jennifer. J. Loros, Patricia J. McCoursey (ed). 2004, Sinauer Associates, Inc. Publishers, Sunderland, MA, USA

Clockwork Clocks D.S. Saunders, C.G.H. Steel, X., Afopoulou (ed.) R.D. Lewis. (3rd Ed) 2002 Perseus and Noble Inc. New York, USA

Biological Rhythms: Vinod Kumar (2002) Narosa Publishing House, Delhi/ Springer-Verlag, Germany.

NON MAJOR ELECTIVE II (THEORY) – APICULTURE 2 hrs/2 credits

UZO N42

UZO N42 : sub code

Objectives:

- To make clear to the students about the honey bees, its life style and social behaviour.
- To learn apiculture, and recognize the list of honey bees
- To provide the knowledge of economic importance of bee products
- Students will be able to understand biological features of honey bee and economic importance thereby they can get self employment.

Unit I

Introduction to Apiculture – Scope of Apiculture. Honey bee – Classification, types of honey bee – *Apis dorsata*, *Apis florea*, *Apis indica* and Dammer bee

Unit II

History- function of members – Different kinds of cells, Bee hive and its architecture, Communication in bees.

Unit III

social life in Indian honey bee. Morphology of Queen, Drones and Workers.

Unit IV

Methods of bee keeping in India – Primitive hives – wall type, movable type, Modern hives – longstroth ten frame hive, Newton's hive. Appliances use in bee

*[Handwritten signature]*



UNIT V

Economic importance of bee products – chemical composition, Nutritive value and medicinal uses of honey, bee wax, bee venom and disease of honey bees.

REFERENCE

1. Applied Zoology Dr. N. Arumugam, Dr. S. Murugan, Dr. J. Johnson Rajeshwar and Dr. R. Ram Prabh, Saras Publication, Nagerkovil, (2005).
2. A text book of Economic Zoology Ravindranathan K. R, Dominant Publishers and distributors, New Delhi. (2005).
3. Entomology M. S. Nalina sundari M. J. P Publications, Chennai, 2006.
4. Hand book of Bee Keeping, Sharma P.L & Singh S. Agrobios Publ, India, 2001.
1. A text book of Economic Zoology. Ravindranathan K. R. Dominant Publishing & distributors, New Delhi, 2005.

SKILL BASED STUDIES II - VERMICULTURE

EDOS42

Sub code: UZO5H2

2 hrs/2 credits

Objectives

- To learn the skill to produce vermicompost
- Student can obtain the skills for the production of organic manure for sustainable agriculture.

UNIT I

Earthworms-Taxonomic position and diversity; types – Epigeic species, Endogeic species and Anecic species.

UNIT II

Vermiculture-definition, scope and importance, common species for culture, Environmental requirements; culture methods-wormery-breeding techniques; Indore and outdoor cultures.

UNIT III

Applications of vermiculture-Vermiculture Biotechnology-vermicomposting, use of vermicompost in organic farming/horticulture-vermiwash.

UNIT IV

Earthworms for management of municipal/selected biomedical solid wastes, as feed/bait for aquaculture fisheries; forest regeneration.

Prospects-Potentials and constraints for vermiculture in India.

REFERENCE BOOK



10

1. Biophysics – Principles And Techniques – M.A.Subramanian, Mjp Publishers, Chennai 5.
2. Aspects Of Biophysics – William Hughes, John Willy And Sons, N.Y., 1979.
3. Biophysical Science – L.E. Ackermann, L.B.E. Ellis And Williams, 1979.
4. Biophysics – Concepts And Mechanisms – E.J. Casey, Von Nostrand Reinhold Co., N.Y.,

NON MAJOR ELECTIVE-I (THEORY) - SERICULTURE

2hrs/2credits

UZON31

Subcode: UZON31

Objectives:

- ✓ To enlighten the students about sericulture a profitable culture practice.
- ✓ To enhance the skills, competitiveness and employability of the students
- ✓ To gain the knowledge of silk production, disease management, quality of silk and marketability.
- ✓ Non major elective student can become entrepreneur.

UNIT I

Introduction to sericulture, moriculture, classification of Mulberry, Methods of cultivation.

UNIT II

Biology and diseases of Silkworms  
Life cycle, External morphology and biology of mulberry silkworm.  
Internal morphology of Silkworm – Digestive, Respiratory, Nervous, Excretory, and Reproductive systems.  
Diseases of *Bombyx mori* - Viral, bacterial protozoan and fungal  
Preventive and control measures. Insect and vertebrate  
Pests of silkworm and their management.

UNIT III

Reproduction of silkworm eggs. Structure – Commercial and reproductive, Seeds, Voltinism, Hibernating and non hibernating eggs.

UNIT IV

Rearing: Rearing house and appliances, Rearing processes. Chawkiworm rearing – optimum rearing, optimum Environmental conditions, care during rearing and cleaning. Selection of cocoon, spinning, mounting, Harvesting, storage and transport.

UNIT V

Reeling – Stifling, reeling appliances – types of croissures, Country charka, cottage basin, Sericulture units, Applications of silk.

REFERENCE



11

1. Applied Zoology- Dr.N.Arumugam, T.Murugan, J.Johnson Rajeshwar, R. Ram Prabhu, Saras Publication, 2010.
2. G. Ganga & J. Sulochana Chetty, 1997. An introduction to sericulture (Oxford & IBH publ.Co.Pvt. Ltd.)
3. Hand Book of Practical Sericulture by Ullal and Narsimhanna. CSB. Bangalore

**SKILL BASED ELECTIVE-I ECONOMIC ZOOLOGY**

UZOS31

Sub code: UZOS31

2hrs/2 credits

**Objectives:**

- ✓ To gain the knowledge in the field of animal culture and its product marketing.
- ✓ To learn the process of honey bee culture, honey production and pearl culture.
- ✓ To gain the knowledge of poultry science, edible fishes and milk pasteurization.
- ✓ Student can get self employment programme.

**UNIT I**

Bee-Bee-Types of honey bee-Culture techniques- Diseases of honeybee.

**UNIT II**

Poultry Industry-Any three indigenous and exotic breeds Diseases of poultry- Any three poultry diseases.

**UNIT III**

Pearl Industry-Types of Pearls-Pearl formation-Culture of pearls-Pearl producing sites in India.

**UNIT IV**

Fish Industry-Common Edible fishes-Economic Importance of fishes.

**UNIT V**

Dairy Science-Different Breeds- milk and milk products - Pasteurization.

**REFERENCE**

- Applied Zoology by Dr. N. Arumugam, T. Murugan, J. Johnson Rajeshwari, R. Ram Prabhu, Saras Publication, 2010.
- Economic zoology by Jawaid Ashan, Subhas Prasad Sinha (1995), S.Chand & Company Ltd, Ram nagar, New Delhi - 110055

REFERENCES

1. Principles of Cancer Biology, 1st First Edition (English, Paperback, Lewis J. Kleinsmith).
2. The Biological Basis Of Cancer Second edition Edition (English, Soft Cover, Robert G. McKinnell Ralph E. Parchment Alan O. Perantoni).
3. Introduction to Cancer Biology (English, Paperback, Hesketh Dr Robin Hesketh).
4. The Biology of Cancer, 2nd Edition 2nd Edition by Robert A. Weinberg (Author), Robert A Weinberg (Author)

SKILL BASED STUDIES III - ORNAMENTAL FISH CULTURE-

2hrs/2credits

UOS53  
Objective

Subcode: UZ0553

- To know about the design, construction and maintenance of home aquaria.
- To study the taxonomy of fishes, identification of freshwater and marine aquarium fishes suitable for home aquarium.
- To understand the nutritional requirement of fishes
- Student can able to become entrepreneur

UNIT I  
Construction of home aquarium: materials used wooden and metal frames, frameless tanks. Glues and gums. Design and Construction of aquarium tank.

UNIT II  
Taxonomy and biology of popular ornamental fishes: Live-bearers (Ovo-viviparous)-red tetra, platy, guppy and molly. Egg layers (oviparous)-gold fish, Siamese fighting fish, angel fish, Oscar, Koi carp, Neon tetra, discus and red tail shark.

UNIT III  
Nutritional requirements of Ornamental fishes- different kinds of feeds-larval feeds and feeding.

UNIT IV  
Maintenance of the aquarium, maintenance of water quality (temperature, heating, waterchange, pH, water hardness) - Control of snail and algal growth.



SKILL BASED STUDIES IV POULTRY SCIENCE  
2hrs/2credits

UOS64

Sub code: UZDS64

Objectives

- To study the poultry nutrition and physiology
- To learn the nutritive value of egg
- To understand the poultry health and management
- Student can able to do the poultry culture thereby they can become entrepreneur

UNIT - I

Poultry Nutrition and Physiology

- Essential amino acids, proteins, fatty acids, vitamins and minerals their inter-relationships.
- Hormonal regulation of digestion, absorption and metabolism of nutrients.
- Feed formulation for different species and groups
- Feeding systems of feeding wet mash, dry mash, crumble and pellet feeding.
- Passage rate in G.I. tract in relation to digestion and absorption efficiency;
- Characteristics features of endocrine glands.
- Hormone control and variable factors influencing growth process

UNIT II

Egg Products technology

- Physical, chemical composition and nutritive value of egg.
- Various measures of egg quality. Shell, albumen and yolk quality assessment.
- Factors influencing egg quality traits.
- Mechanism of deterioration of egg quality.
- Present methods of preservation of table eggs and their relative merits and demerits.
- Physical, chemical, microbial and organoleptic evaluation of meat quality


UNIT III

Poultry Health Management

- Common diseases of poultry - bacterial, viral, fungal, protozoan, parasitic and other emerging
- Diseases of poultry, their prevention control and treatment.
- Toxic and nutrient deficiency diseases and disorders.
- Vaccination programmes and Deworming programmes.
- Control of coccidiosis, worms, ectoparasites and flies. Medication procedures.
- Disinfection and disinfection of poultry houses. Drinking water sanitation

REFERENCE

- Text book of Poultry Science - P.V. Sreenivasaiiah
- Poultry Science and practice- A text book by Nilotpal Ghosh
- Advances in Poultry science- Benjamin Mac clare
- Poultry sciences- Breeding, Rearing and Management of animals by Carlos Hassey

  
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 V.V. Murugiah Government Arts College, Palani

16

Course Code	P21CSS11	COMPUTER SKILLS FOR WEB DESIGNING AND VIDEO EDITING	L	T	P	C
SUPPORTIVE COURSE- I			4	-	-	2
Cognitive Level	K2: Understand      K3: Apply					
Learning objective	<ul style="list-style-type: none"> <li>To gain knowledge on effective web page creation using HTML tags</li> <li>To create a table within a web</li> <li>To gain knowledge on inserting heading levels within a web page</li> <li>To learn how to insert ordered and unordered lists within a web page</li> <li>To publish a web page</li> <li>To learn how to combine basic design principles in video editing</li> <li>To generate a video by applying her knowledge</li> <li>To present the edited video</li> <li>To record short clips by using camera</li> </ul>					
Unit I	Basics of Hardware and Software					12 hours
Basics of Windows Operating System – Windows Utilities. <b>Internet:</b> Concept of Internet, Applications of Internet, Connecting to the Internet, Troubleshooting – World Wide Web – Web Browsers – Search Engines: Accessing Web Browser, Downloading Web Pages, Printing Web Pages – Understanding URL – Surfing the Web: Using e-Governance Websites.						
Unit II	Hyper Text Markup Language (HTML)					12 hours
Structure of HTML Script – Components: Text, Table, Image, Hyperlinks, Types of Lists – Headers and Footers. <b>Forms in HTML:</b> Label – Text Field – Radio Group – Text Area – Buttons.						
Unit III	Open Element					12 hours
Introduction – Creating and Saving a Project - Basic User Interface Elements – Media Elements – Images – Carousels - Image Gallery – Videos – Project Preview in Browser. <b>Containers and Groups:</b> Accordion Group – Collapsible Panel – Group of Elements – Back-End and Full Stack Development.						
Unit IV	Video Recording					12 hours
Grabbing all computer activities like playing video games, browsing the net, making VoIP calls, and more - Record the desktop screen in custom or full-screen mode - Capture the computer screen with voice narrations, system audio, and PIP effects - Include annotations such as colorful texts, shapes, lines, arrows, and drawings - Edit the video by cropping, trimming, adding subtitles, applying watermarks - Conversion of Recorded Video to MP4, VOB, MTS, DV.						
Unit V	Video Editor					12 hours



17

Course Code	P21ZOS22	MEDICAL LABORATORY TECHNOLOGY			
SUPPORTIVE COURSE- II		L	T	P	C
		2	-	-	2
Cognitive Level	K1:Recall                      K2:Understand                      K3:Apply				
Learning objective	<ul style="list-style-type: none"> <li>To learn the proper procedure for the collection, safe handling and analysis of biological specimens.</li> <li>To understand the medical diagnostic methods used for analysis of Blood.</li> <li>To know the urine test, blood test and important human diseases.</li> <li>To enlighten the skills of basic medical techniques.</li> <li>To mould in clinical testing procedures to fetch job opportunities</li> </ul>				
Unit I	Introduction to Medical Diagnostics and its Importance				6 hours
Diagnostics Methods Used for Analysis of Blood- Blood composition, Preparation of blood smear and Differential Leucocyte Count (D.L.C) using Leishman's stain, Platelet count using haemocytometer, Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.)					
Unit II	Urine analysis				6 hours
Physical characteristics; Abnormal constituents, Detection of sugar, albumin, deposits and pregnancy test, (b) Blood analysis - Blood grouping, Haemoglobin estimation, Cell counts DC/TC.					
Unit III	Diseases				6 hours
Causes and diagnosis of- typhoid, malarial fever, dengue, SARS, Helminthes diseases. Glucose Tolerance Test, LFT -Liver Function Tests and Serum Amylase Estimation Increase of bilirubin and levels of SGOT, SGPT, Bilirubin tests, Alkaline phosphatase tests, Prothrombin Time, Coomb's, Liver biopsy					
Unit IV					6 hours
Post-Exercise or Sleeping GH levels, Clonidine Stimulation Test; Insulin Stress Test; Thyroid Function Test, Thyroid Stimulating Hormone (TSH) Serum Total and Free Thyroxine (T4) Metyrapone Test. Pregnancy test					
Unit V	Tumours				6 hours
Types Benign/Malignant, Detection and metastasis; Medical imaging: X-Ray of Bone fracture, PET, MRI and CT Scan.					
Text Books	1. Ochei, Medical Laboratory Science. Theory and practice, Tata McGraw Hill publ. Co, Noida, India, 2000. 2. Dubey R. C. and Maheshwari D. K. S A text book of Microbiology., Chand & Co. Publ. New Delhi, India, 2007.				
Reference Books	1. Ashok, R. 2000. Antimicrobials in Laboratory Medicine, B.I. Churchill Livingstone. New Delhi 2. Root & I. Samuel, M. K. G. Notes on Clinical Lab Techniques, Iyyer & Sons Publ. Co, Chennai, 1992. 3. 3. Mukherjee. Medical Laboratory Technology Vol. 1,2& 3, Tata McGraw Hill publ. Co, Noida, India, 2006.				

*(Signature)*



Course Code	P21ZON211	CONSERVATION BIOLOGY			
NME -I		L	T	P	C
Cognitive Level	K1:Recall K2:Understand K3:Apply	4	-	-	4
Learning objective	<ul style="list-style-type: none"> <li>To update the knowledge of current status of biodiversity and its extinction</li> <li>To understand the significance of biodiversity</li> <li>To identify the ways to conserve the biodiversity</li> <li>To obtain knowledge about the conservation of Biodiversity</li> </ul>				
<b>Unit I</b>	<b>Components of Biodiversity</b>	<b>12hours</b>			
(Ecosystem, Genetic and Species diversity) – Assigning values to biodiversity – Species concepts – Animal diversity: (Distribution inventory, species richness) – Biodiversity Hotspots (Western Ghats, Indo-Burma region). Biogeography of India – patterns and distribution of ecosystems, ecological succession, biotic and abiotic factors of an ecosystem. Conservation ethics and values of wildlife.					
<b>Unit II</b>	<b>Extinctions</b>	<b>12hours</b>			
Past rates of Extinctions – Concepts of Island biogeography and extinction rates on Islands – Human induced, Modern and local extinctions – Population reduction-threats to wildlife (examples) – Habitat loss, degradation and fragmentation. Threats to animal diversity in India – Status of species: Rare, endemic and threatened species – Measuring status of species in the wild – IUCN Red list (Assessments and methodologies) – Status of Indian animals.					
<b>Unit III</b>	<b>In situ conservation of Indian animals</b>	<b>12hours</b>			
(Case studies). Ex situ: Captive breeding programme – people participation in conservation – Successes and failures of conservation actions in India (Case study) – Tools in Conservation: GIS – remote sensing – Landscape model – PVA – VORTEX. Red listing process: categories and criteria, SIS. Wildlife conservation in India importance of conservation – methods of wildlife conservation					
<b>Unit IV</b>	<b>Economics of biodiversity conservation</b>	<b>12hours</b>			
Wildlife (Protection) Act of India (1972) – Protected Area network – forest policy – Prevention of cruelty to Animal Act – Convention on Biological diversity, International Trade in endangered species – Zoo policy- Laws and their applications in Zoological parks, wildlife sanctuaries and biosphere reserves – Economics of biodiversity conservation. The world Conservation Union (IUCN) – World wildlife fund (WWF) – Indian Board for Wildlife (IBWL).					
<b>Unit V</b>	<b>Wildlife / Animal magazines</b>	<b>12hours</b>			
Journals- How to write popular and Scientific articles – Magazine and Journal information – Wildlife, nature, environment games (examples) – Role of NGO's and Government organizations in wildlife conservation – Wildlife celebration days in India. Technical writing and reporting of field studies. Public presentation. Field Project/ Report – visit to Zoological parks, wildlife sanctuaries and biosphere reserves.					



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Bio statistics practical ref. Copy.

**ELECTIVE-III-AQUACULTURE**

(2)

Semester II  
Sub code-PZOE22

Hours 5/5credits

Objectives

Subcode-PZOE22

1. This paper is planned to Gain knowledge in the fish food
2. To understand the fish feeding habits
3. To learn about investigating the seed production
4. To understand the farm management and method of farming

**UNIT-I: Introduction to Aquaculture**

(Importance of aquaculture, Global scenario, Present status in India - Prospects and scope of aquaculture Farms. Site selection, topography, water availability and supply, soil quality. Design and layout, structure and construction.

**UNIT-II: Biology of important cultivable species and their economics**

Standard guidance for choosing cultivable species - Seaweeds, Crustaceans (Prawns & Lobsters), Molluscs (Clams, Cockles, Mussels and Oysters) and fishesbiological criteria - Environmental

2

Semester-VI

Sub code: SBSEZ

SBS- IV

Economic Zoology

2hrs/week

**Aim and Objectives:**

To gain knowledge about beneficial Insects, Poultry & Aquaculture.  
To motivate them to rear beneficial Insects, Animals & start Small Scale Industries.  
To create awareness on agricultural Pests & Vectors of Human Diseases.

**Unit -I:**

Honey Bee-Types of honey bee-Culture techniques- Diseases of honeybee.

**Unit-II:**

Poultry Industry-Any three indigenous and exotic breeds Diseases of poultry-  
Any three poultry products.

**Unit-III:**

Pearl Industry-Types of Pearls-Pearl formation-Culture of pearls-  
Pearl producing sites in India.

**Unit-IV:**

Fishery Industry-Common Edible fishes-Economic Importance of fishes.

**Unit-V:**

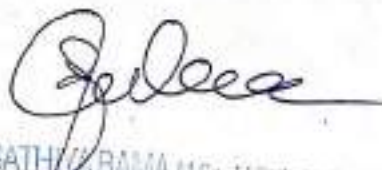
Dairy Science-Different Breeds- milk and milk products - Pasteurization.

**Text Book:**

Applied Zoology by Dr. N. Arumugam, T. Murugan, J. Johnson Rajeshwari,  
R. Ram Prabhu, Saras Publication, 2010.

**Reference Books:**

Economic zoology by jawaid Ashan, Subhas Prasad Sinha (1995), S.Chand & Company Ltd,  
Ram nagar, New Delhi - 110055



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15

3

Semester V

Sub code: SBEOR

SBS-III

Ornamental Fish Culture

2hrs/week

**Aim and Objectives:**

- To gain knowledge about ornamental fishes
- To motivate students for aquaculture practices.

**Unit-I:**

Construction of home aquarium: materials used wooden and metal frames, frameless tanks. Sealants and gums. Design and Construction of aquarium tank.

**Unit-II:**

Taxonomy and biology of popular ornamental fishes:  
Live-bearers (Ovo-viviparous)-red swordtail, platy, guppy and molly.  
Egg layers (oviparous)-gold fish, Siamese fighting fish, gourami, angel fish, Oscar, Koi carp, Neon tetra, discus and red tail shark.

**Unit-III:**

Nutritional requirements of Ornamental fishes-  
different kinds of feeds-larval feeds and feeding.

**Unit-IV:**

Clearing the aquarium, maintenance of water  
quality (temperature, heating, water change, ammonia,  $O_2/CO_2$ ,  $P_H$ , water hardness)-  
Control of snail and algal growth.

**Unit-V:**

Commercially important marine ornamental fishes,  
Entrepreneurships development in ornamental fish culture.

**Text Book:**

Home Aquarium, Dr. C.S. Tharadevi, Dr. K.V. Jayashree, Saras Publication, 2010

**Reference Books:**

- Manual of ornamental fishes and farming technology, J.D. Jameson and R. Santhanam 1996. Fisheries College and Research institute. TANVASU. Tuticorin.
- Manual on freshwater ornamental fish culture, R. Santhakumar *et al*, 2007. Dept of fisheries extension. Fisheries College and Research institute. TANVASU. Tuticorin.
- Biodiversity and stock assessment of marine ornamental fishes, V.K. Venkataramani *et al*, 2004. Dept of Fisheries. Biology and Capture fisheries. Fisheries College and Research institute. TANVASU. Tuticorin-628008.



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P.G. Department of Zoology

M.V. ...

Date: ...



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Skill Based Elective Course For B.Sc. Zoology -

Semester-III

SBS -I

Sub code: SBEVC

VERMICULTURE

2hrs/week

**Aim and Objectives:**

1. To identify the different species of earthworms.
2. To understand the importance of Vermiculture.
3. To acquire knowledge on the uses of vermicastings in organic farming.

**Unit-I:**

Earthworms-Taxonomic position and diversity;  
types - Epigeic species, Endogeic species and Anecis.

**Unit-II:**

Vermiculture-definition, scope and importance, common species for culture,  
Environmental requirements; culture methods-wormery-breeding techniques;  
Indore and outdoor cultures.

**Unit-III:**

Applications of vermiculture-Vermiculture Biotechnology-vermicomposting,  
use of vermicastings in organic farming/horticulture-vermiwash.

**Unit-IV:**

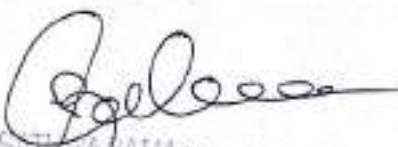
Earthworms for management of municipal/selected biomedical solid wastes,  
as feed/bait for capture/culture fisheries; forest regeneration.

**Unit-V:**

Future perspectives-Potentials and constraints for vermiculture in India.

**Reference Book:**

- Sultan Ahmed Ismail, 2005. The Earthworm Book, 2<sup>nd</sup> revised edn, Other India press, Goa, India

  
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4

Semester - III <sup>IV</sup>

TOTAL HOURS: 45

ELECTIVE PAPER-I

SUBJECT CODE: BZ042 SERICULTURE

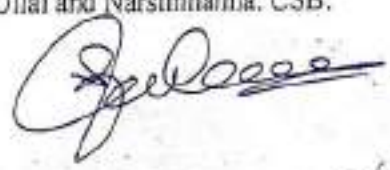
<u>UNITS</u>	<u>CONTENTS</u>	<u>HOURS</u>
I	Introduction to sericulture, moriculture, classification of Mulberry, Methods of cultivation.	5
II	Silkworm biology - Taxonomy, life cycle, anatomy. Diseases of Bombyx mori - a. Bacterial, b. Fungal c. Viral, Silk worm pest - Uzifly	10
III	Seed /silkworm eggs. Structure - Commercial and reproductive Seeds, Voltinism, Hiber nating and non hiber nating eggs,	5
IV	Rearing: Rearing house and appliances, Rearing processes. Chawkiworm rearing - optimum feeding, optimum Environmental conditions, care during rearing and cleaning. Selection of ripeworm, spinning, mounting, Harvesting, storage and transport.	15
V	Reeling - Stifling, reeling appliances - types of croissures, Country charka, cottage basin, filature units, Applications of silk.	10

Text Book:

Applied Zoology- Dr.N.Arumugam, T.Murugan, J.Johnson Rajeshwar,  
R. Ram Prabhu, Saras Publication, 2010.

Reference Books:

1. G. Ganga & J. Sulochana Chetty, 1997. An introduction to sericulture (Oxford & IBH publ.Co.Pvt. Ltd.)
2. Hand Book of Practical Sericulture by Ullal and Narsimhanna. CSB. Bangalore



Semester III  
Non Major Elective 1 - Apiculture

Unit-I Subcode: ONMEAC 2hrs/Week

Introduction to Apiculture - Scope of Apiculture. Honey bee -  
Classification, types of honey bees - *Apis dorsata*, *Apis florea*, *Apis indica*  
and Dammer bee

Unit-II

Bee colony- function of members -  
Different kinds of cells, Bee hive and its architecture,  
communication in bees.

Unit - III

*Apis indica* - social life in Indian honey bee.  
Morphology of Queen, Drones and Workers.

Unit - IV


Bee keeping - methods of bee keeping in India - Primitive hives -  
wall type, movable type, bamboo hive. Modern hives -  
longstroth ten frame hive, Newton's hive. Appliances use in bee keeping.

Unit - V

Economic importance of bee products - chemical composition,  
Nutritive value and medicinal uses of honey, bee wax,  
bee venom and disease of honey bees.

Reference Books:

1. Applied Zoology Dr. N. Arumugam, Dr. S. Murugan, Dr. J. Johnson Rajeshwar and Dr. R. Ram Prabhu, Saras Publication, Nagerkovil, (2005).
2. A text book of Economic Zoology Ravindranathan K. R, Dominent Publishers and distributors, New Delhi. (2005).
3. Entomology M. S. Nalina sundari M. J. P Publications, Chennai, 2006.
4. Hand book of Bee Keeping, Sharma P.L & Singh S. Agrobious Publ, India, 2001.
5. A text book of Economic Zoology. Ravindranathan K. R. Dominent Publishing & distributors, New Delhi, 2005.

  
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**Semester IV**  
**Non Major Elective 2 – Sericulture**

Subcode: ONMSC

2hrs/week

**Unit-I:**  
Introduction to Sericulture: Moriculture-Classification of mulberry-  
Methods of Cultivation.

**Unit-II:**  
Silkworm biology-Taxonomy, Life-cycle-Diseases of *Bombyx mori* -  
A) Pebrine B) Muscardine, Silkworm pest-Uzi fly.

**Unit-III:**  
Silkworm eggs/seeds-Commercial and reproductive seeds. Voltinism.  
Hibernating and Non-hibernating eggs.

**Unit-IV:**  
Rearing: Rearing house and appliances-Chawkiworm rearing, rearing processes.

**Unit-V:**  
Reeling-reeling appliances. Country Charka, Cottage basin, Filature units.

**Text Book:**

Applied Zoology by Dr. N. Arumugam, T. Murugan, J. Johnson Rajeshwari, R. Ram Prabhu  
Saras Publication, 2010.

**Reference Books:**

- An Introduction to Sericulture- G. Ganga & J. Sulochana Chetty, 1997.  
(Oxford & IBH publ.Co.Pvt. Ltd.)
- Hand Book of Practical Sericulture by Ullal and Narsimhanna. CSB.  
Bangalore
- Manual of Sericulture-Rearing, Reeling, Moriculture.

  
Dr. P. S. Murugan, M.Sc., M.Phil., Ph.D.,  
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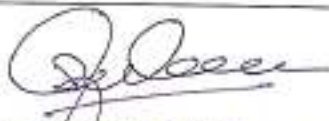
**1.3 CURRICULUM ENRICHMENT**

**1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF GEOGRAPHY**

**SYLLABUS**

Course Code	U21ZON3I1	PUBLIC HEALTH AND HYGIENE			
NME	I	L	T	P	C
		2	-	-	2
<b>Cognitive Level</b>	K1: Recall	K2: Understand		K3: Apply	
<b>Learning objective</b>	<ul style="list-style-type: none"> <li>➤ To gain awareness on Public Health and Hygiene</li> <li>➤ To create knowledge on Health Education and hazards.</li> <li>➤ To identify the communicable diseases and their control measures</li> <li>➤ To learn about non-Communicable diseases and their preventive measures</li> <li>➤ To comprehend the health education of India</li> </ul>				
<b>Unit I</b>	<b>Scope of Public health and Hygiene:</b>				
	Scope of Public health and Hygiene – nutrition and health – classification of foods – Nutritional deficiencies - Vitamin deficiencies.				
<b>Unit II</b>	<b>Environment and Health hazards:</b>				
	Environment and Health hazards – Environmental degradation – Pollution and associated health hazards.				
<b>Unit III</b>	<b>Communicable diseases:</b>				
	Communicable diseases and their control measures such as Measles, Polio, Chikungunya, Rabies, Plauge, Leprosy, AIDS and Corona.				
<b>Unit IV</b>	<b>Non-Communicable diseases:</b>				
	Non-Communicable diseases and their preventive measures such as Hypertension, Coronary Heart diseases, Stroke, Diabetes, Obesity and Mental ill-health.				
<b>Unit V</b>	<b>Health Education in India:</b>				
	Health Education in India – WHO Programmes – Government and Voluntary Organizations and their health services – Precautions, First Aid and awareness on sporadic diseases.				
<b>Text Books</b>	<ol style="list-style-type: none"> <li>1. Park and Park,: Text Book of Preventive and Social Medicine – Banarsidas Bhanot Publ. Jodhpur – India. 2010</li> <li>2. Dubey, R.C and Maheswari, D.K.: Text Book of Microbiology – S. Chand &amp; Co. Publ. New Delhi – India. 2007</li> <li>3. Park, J.E. and Park, K. Textbook of Community Health for Nurses.2010</li> </ol>				



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Associate Professor and Head

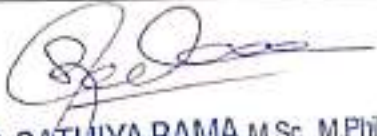
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Course Code	U21ZON421	VERMICOMPOSTING			
NME	I	L	T	P	C
		2	-	-	2
Cognitive Level	K1: Recall                      K2: Understand    K3: Apply            K5: Analyse				
Learning objective	<ul style="list-style-type: none"> <li>➤ To get the thorough knowledge on making vermicompost and vermiculture.</li> <li>➤ To learn about South Indian and North Indian species used in Vermicomposting and Culture techniques of earthworms</li> <li>➤ To study the vermicompost production</li> <li>➤ To encourage the self employment practice and save the human being by the way of minimizing the use of chemical fertilizers.</li> <li>➤ To understand the interaction of earthworms with other organisms</li> </ul>				
Unit I	<b>Taxonomy of Earthworm:</b>				
Earthworm taxonomy – Morphological and anatomical – Classification of earthworms – Food habits – Digestive system – Excretion – Reproduction and Life cycle – Earthworm as farmer's friend.					
Unit II	<b>Types of earthworm:</b>				
Types of earthworm – Exotic and native species – South Indian and North Indian species used in Vermicomposting – Collection and Preservation of earthworms for vermicomposting – Culture techniques of earthworms					
Unit III	<b>Vermicompost production:</b>				
Vermicompost production – Requirements – Different methods of Vermicomposting – Heap method – Pot method and Tray method – changes during Vermicomposting.					
Unit IV	<b>Role of Earthworms in soil fertility:</b>				
Role of Earthworms in soil fertility – Use of Vermicompost for crop production – Use of earthworms in land improvement and land reclamation – Economics of Vermicompost and vermiculture production. Earthworms as animal feed – Medicinal value of earthworm meal – Role of Earthworms in Solid Waste, Sewage and faecal waste management and Vermifilters. Earthworms as bioreactors.					
Unit V	<b>Interaction of earthworms:</b>				
Interaction of earthworms with other organisms – Influence of chemical inputs on earthworm activities – Large scale manufacture of Vermicompost, packaging of vermicompost and its marketing – Financial supporting – Government and NGOs for vermiculture work					

  
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DEPARTMENT OF GEOGRAPHY

CROSS CUTTING ISSUES

2022-2023

S. No	Sub Code	Sub Name	Course Significance
1	U21GEN311	NME - Principles of Remote Sensing	<ul style="list-style-type: none"> <li>➤ To develop technical knowledge of satellite system</li> <li>➤ To lean interface of Remote Sensing and GIS</li> </ul>
2	U21MSS31	Computer Application In Geography	<ul style="list-style-type: none"> <li>➤ To understand the traffic flow, connectivity measures and binary matrix.</li> <li>➤ To understand the line graphs, poly graphs and compound line graphs.</li> </ul>
3	U21GEN421	NME- Geographical Information System	<ul style="list-style-type: none"> <li>➤ Student familiar with modern techniques in Geography</li> <li>➤ Students understand physical geography and the methods and techniques.</li> </ul>
4	UGET53	Human Geography	<ul style="list-style-type: none"> <li>➤ To understand global and regional patterns of cultural, political and economic institutions, and their effects on the preservation.</li> <li>➤ To develop an idea about the world population distribution and the factors that lead to uneven distribution of the population</li> </ul>
5	UGES53	SBE- Applications of Statistical Methods in Geography	<ul style="list-style-type: none"> <li>➤ To learn how to apply discrete and continuous probability distribution to various business problems.</li> <li>➤ Students would be able to make a rational choice amongst listed various statistical methods</li> </ul>
6	UGEE64	Biogeography	<ul style="list-style-type: none"> <li>➤ To understand about the concept and relevance of biogeography, ecosystem and ecology responsible for the global trend.</li> <li>➤ To apply interaction of biotic and abiotic resources</li> </ul>
7	P21GET23	Medical Geography	<ul style="list-style-type: none"> <li>➤ To learn the Nutrition Deficiency related Disease and the Geographical perspectives of communicable and non-Communicable Disease.</li> <li>➤ To know the hierarchy of Medical services and GIS in public surveillance and monitoring.</li> </ul>



8	P21GEN21	Elective - I – NME – Geography of India for Competitive Examinations	<ul style="list-style-type: none"> <li>➤ To understand the social distribution of population and transportation network of their country.</li> <li>➤ To understand the economic resources of India</li> </ul>
9	P21GET34	Population Geography	<ul style="list-style-type: none"> <li>➤ To understand the population policies in developed &amp; developing countries</li> <li>➤ To understand the various kinds of demographic problems eg. Zero, under &amp; decline population.</li> </ul>
10	P21WSS33	Women Empowerment	<ul style="list-style-type: none"> <li>➤ To a great extent on numerous different variables that encompass geographical setting, social status, educational status, and age factor.</li> <li>➤ To effective participation in different development programs, and encouraging them to be independent and self-confident, to meet the challenges of living in a patriarchal society with courage and self-respect</li> </ul>
11	P21GEE411	Social Geography	<ul style="list-style-type: none"> <li>➤ To understanding the concept of space and place, religions and language groups</li> <li>➤ To understand an overview of the culture complex, cultural heritage and cultural imperialism</li> </ul>

  
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## SEMESTER - III

### Non - Major Elective - I

## PRICIPLES OF REMOTE SENSING

Credit: 2

Course Code: 21GEN311

Hours: 2

#### Learning Objectives:

- ❖ The aim of this course is to introduce students to the interface of Remote Sensing and GIS
- ❖ Also introduce about to various aspects of Aerial photographs.
- ❖ It will be teach about the important elements of the Geospatial technology.
- ❖ To develop new insights among students on the relevance of geospatial studies within the field of geography.
- ❖ It gives the technical knowledge of satellite system.

**UNIT I INTRODUCTION** - Principles of remote sensing - History

**UNIT II EMR** - Electromagnetic spectrum - Energy interactions with atmosphere and earth surface features

**UNIT III SATELLITE REMOTE SENSING** - Platforms - Sensors

**UNIT IV AERIAL PHOTOGRAPHS** - types - elements of interpretation and uses of aerial photographs

**UNIT V SATELLITE IMAGERY** - types - visual image interpretation - uses of satellite imageries.

#### TEXT BOOKS:

1. *Campbell J. B., Introduction to Remote Sensing, Guildford Press, 2007.*
2. *Jensen J. R., Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall, 2004.*
3. *Joseph, G. Fundamentals of Remote Sensing, United Press India, 2005.*
4. *Nag P. and Kudra, M., Digital Remote Sensing, Concept, New Delhi, 1998.*
5. *Rees W. G., Physical Principles of Remote Sensing, Cambridge University Press, 2001.*

#### REFERENCE BOOKS:

1. *LanHeywod, Sarah Cornelines, An Introduction to Geographical Information System I Addison, Wesley, Longman Ltd, 2000*
2. *C.S.Agarwal & P.K.Grag, Text Book of Remote Sensing, Wheeler Publishing, 2000*
3. *Gampbell. James B.I Introduction to Remote Sensing, The Guild Press, New York, 2017*

4. Curran, *Fundamentals of Remote Sensing*, Longman, London, 2006
5. Lillesend TM & Kiefer R.W, *Remote Sensing & Image Interpretation*, John Wiley & sons, New York, 2004.
6. Luedev D.R. *Aerial Photographic Interpretation* Mc. Graw Hill Company, New York, 2000.

**Learning Outcomes:**

CO	After the completion of the course, students will be able to	Remarks
CO1	Students will demonstrate knowledge of the foundations and theories of geographic information systems (GIS) and use the tools and methods of GIS.	K2
CO2	Students will demonstrate their knowledge of physical geography and the methods and techniques for observing, measuring, recording and reporting on geographic phenomena.	K2
CO3	Students will demonstrate their competence to work individually and as a team to develop and present a client-driven GIS solution.	K2
CO4	Student will be familiar with modern techniques in Geography.	K4
CO5	Students will be prepared to apply their skills in professional careers for UGC NET/SLET exams and other competitive exams including the civil services.	K5

\*K1 - Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate

**Outcome Mapping:**

PO/CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	2	2	3	3	2	2	2	3
CO2	3	3	3	3	2	3	3	3	2	2	3
CO3	3	2	3	3	2	2	3	3	2	2	2
CO4	3	2	3	2	3	3	3	3	2	2	2
CO5	3	3	3	3	3	2	3	3	2	2	2

\*Strongly Correlating - 3, Moderately Correlating - 2, Weekly Correlating - 1, No Correlation - 0

  
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## SEMESTER - III

### JOB ORIENTED COURSE - I

# PRACTICAL - COMPUTER APPLICATION IN GEOGRAPHY

Credit: 2

Course Code: U21MSS31

Hours: 2

#### Learning Objectives:

- ❖ Understand the fundamentals of computer
- ❖ Explaining the Representation of population data.
- ❖ Understand the Analysis of Agricultural data.
- ❖ Explaining the Representation of industrial data.
- ❖ Explaining the Representation of transport data.

**UNIT I INTRODUCTION TO COMPUTERS:** Hardware and Software - Operating Systems - Working with Microsoft Windows - File Management - Creation of Files and Folders - Moving, Cutting, Copying, Pasting and Deleting of Files and Folders.

**UNIT II INTRODUCTION TO MICROSOFT OFFICE PACKAGE:** Word, Excel, Power Point - Outlook and Access Working with Microsoft Word - Creation of New Files, Documents, Templates - Save, Edit, Format, Insert Table, Pictures, Pages - Adding Headers and Footers - Out-put Generation.

**UNIT III WORKING WITH MICROSOFT EXCEL:** Creation of New worksheet - Formatting of Cells - Statistical Analysis of Data - Creation of Charts - Formatting Charts - Output Generation.

**UNIT IV DATA ANALYSIS:** Analysis of agricultural data - distribution of crops - dot - choropleth - piechart.

**UNIT V REPRESENTATION OF INDUSTRIAL AND TRANSPORT DATA:** Triangular graph - traffic flow - connectivity measures and binary matrix.

#### TEXT BOOKS:

1. Monkhouse F.J. and Wilkinson H.R. - *Maps and Diagrams* - Dirton Co., Newyork, 1999.
2. R.P.Mishra and A.Ramesh - *Fundamentals of Cartography* - Concept



*publishing Company, New Delhi, 1996.*

3. *Robinson A.H. and R.D.Sale-Elements of Cartography-Hjohn Wiley and Sons, NewYork, 2011.*

**REFERENCE BOOKS:**

1. *Singh R.L. and P.K.Dutt-Elements of Practical Geography,1969.*
2. *M.D.Zulfequar ahamad Khan – Text Book of Practical Geography,Concept Publishing Company, NewDelhi, 2001.*

**Learning Outcomes**

CO	After the completion of the course, students will be able to	Remarks
CO1	Students will have a basic knowledge of the components of computer	K2
CO2	Students will learn and understand the line graphs, poly graphs and compound line graphs.	K2
CO3	Students will have an effectively Understand the dot, choropleth, pie chart.	K2
CO4	Students will have the knowledge of the triangular graph.	K3
CO5	Students will have an effectively Understand the traffic flow, connectivity measures and binary matrix.	K4

*\*K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate*

**Outcome Mapping:**

PO/CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	2	3	2	3	2	2	3	2
CO2	3	3	3	3	3	2	3	3	2	3	2
CO3	3	3	3	3	2	3	3	3	2	3	3
CO4	3	3	3	2	2	3	3	3	2	3	3
CO5	3	2	3	3	2	3	3	3	2	3	2

*\*Strongly Correlating – 3, Moderately Correlating – 2, Weekly Correlating – 1, No Correlation – 0*

  
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**SEMESTER – IV**  
**NME – II – GEOGRAPHICAL INFORMATION SYSTEM**

Credit: 2

Course Code: U21GEN411

Hours: 2

**Learning Objectives:**

- ❖ They can know about concept and components of Geographical Information System.
- ❖ Know about GIS data structures.
- ❖ Students will able to an idea about GIS Data Analysis.
- ❖ They understand the satellite remote sensing
- ❖ Students understand the Global Positioning System.

**UNIT I INTRODUCTION:** GIS – Definition – history – components – hardware – software – data – people

**UNIT II GIS DATA TYPES:** Geographic data – point, line and area – spatial data and non spatial data

**UNIT III GIS DATA STRUCTURES:** Data model – raster and vector – data conversation – digitization – errors

**UNIT IV GIS DATA ANALYSIS:** Database Management System (DBMS) – use of GIS

**UNIT V INTRODUCTION OF GPS:** GPS - Definition – history – segments – uses

**TEXT BOOKS:**

1. *Campbell J. B., Introduction to Remote Sensing, Guildford Press, 2007.*
2. *Jensen J. R., Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall, 2004.*
3. *Joseph, G. Fundamentals of Remote Sensing, United Press India, 2005.*
4. *Nag P. and Kudra, M., Digital Remote Sensing, Concept, New Delhi, 1998.*
5. *Rees W. G., Physical Principles of Remote Sensing, Cambridge University Press, 2001.*

**REFERENCE BOOKS:**

1. *C.S.Agarwal & P.K.Grag, Text Book of Remote Sensing, Wheeler Publishing, 2000*
2. *Gampbell. James B.I Introduction to Remote Sensing, The Guild Press, New York, 2017*
3. *Curran, Fundamentals of Remote Sensing, Longman, London, 2006*



4. Lillesend TM & Kiefer R.W, *Remote Sensing & Image Interpretation*, John sons, New York, 2004.
5. Luedev D.R. *Aerial Photographic Interpretation* Mc. Graw Hill Company, New York, 2000

**Learning Outcomes:**

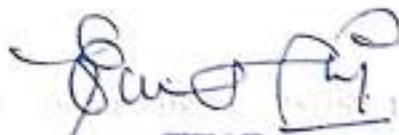
CO	After the completion of the course, students will be able to	Remarks
CO1	Students will acquire knowledge regarding the use of modern tools and technology like GPS, GIS in geographical studies and can apply this knowledge in any field of study.	K3
CO2	They can know about concepts, components, development, and types of GIS	K2
CO3	Students can acquire a broad knowledge regarding GIS and can developed idea about aerial photographs, satellite imagery etc.	K4
CO4	They understand about Aerial photography and Satellite Remote Sensing.	K2
CO5	Develop an idea about interpretation and application of GIS	K4

\*K1 - Remember, K2 - Understand, K3 - Apply, K4 - Analyze, K5 - Evaluate

**Outcome Mapping:**

PO/CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	2	3	3	3	2	2	3	2
CO2	3	3	2	3	2	3	3	3	3	2	3
CO3	3	2	2	2	2	3	3	2	2	3	2
CO4	3	2	3	3	3	3	3	3	3	2	3
CO5	3	3	3	3	2	3	3	2	2	2	2

\*Strongly Correlating - 3, Moderately Correlating - 2, Weekly Correlating - 1, No Correlation - 0

  
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# SEMESTER- V

## HUMAN GEOGRAPHY

### Aims and Objectives

- Demonstrate and analyze knowledge of the facts, processes, and methods of environmental Geography.
- Demonstrate and analyze knowledge of the facts, processes, and methods of Geography.
- Demonstrate and analyze knowledge of the facts, processes, and methods of regional Geography.

### UNIT I

Scope and content, definition - different viewpoints - concept of determinism, Possibilism and Probabilism - Recent trends in human geography - branches in human geography.

### UNIT II

World cultural regions - Food gatherers - Semang and Sakai; Hunters - Bushmen - Cultivators - People of the Malabar coast - Nomads - Masai and levels of culture in twentieth century.

### UNIT III

Human Races - Classification - Distribution - Religion - Major types and distribution.

### UNIT IV

Population - Spatial pattern of distribution - growth - problems of over population and under population - population Theory - Malthus and optimum theory - Migration - Causes - consequences and problems.

### UNIT V

Rural and Urban settlement - factors - types - growth - Urban morphology and functional classification of towns - Urbanization - Trend, level, - World, India.

### REFERENCE BOOKS :

1. Majid Husain-Human Geography-Rawat Publications 1994.
2. Gillian C.Morgan - Human and Economics Geography, Oxford University Publications 1999.
3. Aime Vincent Perpillou-Human Geography, Longman Group limited London 1977.
4. C.Daryll Forde-Habitat, Economy and Society, Methuen Publishers 1977.
5. Ray-M.Northam-Urban Geography, John Wiley and sons Publications - 1979.

  
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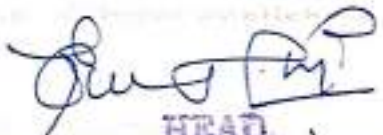
## SEMESTER- V

### SBE – III – Practical - Application of Statistical methods in Geography

- Unit I Basic concepts- data- Data sources and types of data raw data- variables- class- class limits- class boundaries- class width- class – class mark- class frequencies.
- Unit II Frequency distribution – cumulative frequency – graphical representation of frequency distribution.
- Unit III Histogram – frequency curve – frequency polygon- cumulative frequency polygon – cumulative frequency curve.
- Unit IV Mean- median –mode – Skewness and Kurtosis - Selection of class intervals for mapping.

#### REFERENCE BOOKS

- 1 R.L. Singh \_ Elements of Practical Geography, Kalyani Publishres, New Delhi
- 2 F.J. Monkhouse and H.R Wilkinson, Maps and Diagrams, B.I. Publications, Madras
- 3 Gopal Singh – Map work and Practical Geography, Vikas publishing house Ltd
- 4 V.P. Subrahmanyam and Subramaniam,A.R. Application of water balance concept for a climatic study of droughts in south India, 1964
- 5 M.D.Zulfequar ahamad Khan –Text Book of Practical Geography, Concept Publishing Company, NewDelhi.

  
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## SEMESTER - VI

### ELECTIVE - IV - BIOGEOGRAPHY

#### Aims and Objectives

- To introduce students to the foundations, current state-of-the-art, and future of the field of Biogeography.

- UNIT I** Definition, scope and significance of biogeography - basic ecological concepts and principles - ecosystem - types of ecosystems - components of ecosystem - functioning of ecosystem - concepts of biome - types, ecotone and community - bio diversity.
- UNIT II** Origin of fauna and flora - plant and animal evolution through geological times, - distribution of plant life on earth and its relation to soil types - climates and human practices.
- UNIT III** Problem of extinction of plant and animal life - habitat decay and their conservation - process of desertification - its consequences and its management principles.
- UNIT IV** Industrial effluent and its effect on fresh water biology - management practices (special reference to India)
- UNIT V** Study of ecological regions of Himalayas and Western Ghats in relations to their plant and animal life, their Interrelations, problems - conservation and management measures.

#### REFERENCE BOOKS

1. Robinson - Biogeography - ELBS Mc Donald and Evans London, 1982
2. L.G. Simons - Biogeographically process - Allen and Unwell, London.
3. C Barry - Cox, Black Well - Biographical - an Ecological Evolutionary approach - Oxford 1977
4. B, Seddon - Biogeography - Duck worth, London 1971.

  
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Course Code	P21GET23		L	T	P	C
CORE -VIII		<b>MEDICAL GEOGRAPHY</b>	5	-	-	4

### Learning Objectives:

1. The broad objective of the course is introduced to the student the concept of health and Disease, climate and Disease.
2. To guide students to learn the Nutrition Deficiency related Disease and the Geographical perspectives of communicable and non-Communicable Disease.
3. Student will be exposed the Disease Ecology, Disease diffusion and the Dynamics of major Disease.
4. Student will understand the Medical Geography, medical Statistics and disease measurement and analysis.
5. To know the hierarchy of Medical services and GIS in public surveillance and monitoring.

#### Unit I      **Perspectives on Health**      **12 hours**

Nature, scope and development of Medical Geography – Traditional and contemporary approaches – Concept of Health and Diseases – Reproductive Health – Climate and Health – Human diseases – Classification – Infectious, Degenerative and chronic, inherited and genetic diseases.

#### Unit II      **Diseases Pattern**      **12 hours**

Nutrition - Deficiency related diseases - Geographical perspectives of Communicable and Non-communicable diseases - Epidemic, Endemic and Pandemic nature of diseases - Major Tropical diseases - Malaria, Filariasis and Leprosy Cancer and Heart attack - Social diseases - HIV IAIDS, STD.

#### Unit III      **Disease Ecology**      **12 hours**

Determinants of diseases - Interplay of environmental, cultural, socio-economic and ecological factors – Gender and health – Diseases of the rich and poor - Disease diffusion – Concepts – Dynamics of major diseases – Migration and Disease – Travel Medicine.

#### Unit IV      **Medical Cartography**      **12 hours**

Measurement techniques of diseases Disease mapping techniques at macro, meso and micro levels – Medical statistics – Epidemiological methods in disease measurement and analysis – Measurement of Morbidity and Mortality.

#### Unit V      **Health Care Delivery System and GIS Technics**      **12 hours**

Health care delivery system - Hierarchy of medical services – Planning for manpower, infrastructure and service facilities of health care – Rural and urban disparities – Health education – Improved Health care delivery system – GIS in Public Health surveillance and monitoring Environmental and Health data management.

### TEXT BOOKS:

1. Textbook of Social and Preventive Medicine - Park, 19<sup>th</sup> edition, Bhandi, 2007, Geography and Health - Hussain, A, Mahaveer & Sons, New Delhi, 2007.
2. Geography of Health: A Treatise on Geography of Life and Death in India - Misra, R.P., Concept Publishing Company, 2007.
3. Tribal Health and Medicines - Kalla & Joshi, Concept Publishing Company, 2004. and
4. Health and Diseases: Dynamics and Dimensions - Surendra Singh & Misra, New Royan Book Company, 2000.

**REFERENCE BOOKS:**

1. Aikat, B.K. Tropical diseases in India, Arnold Meinemann, Delhi, 1st Edition, 1985
2. Akhtar Rais, Environmental population and health problems, Ashish, 1990 Publishers Home, New Delhi.
3. Ansari, S.H. "Spatial Organization of health care facilities in Haryana" NGJI, Vol 51, PP 3-4, 51- 61. 2005

**Learning Outcomes:**

CO	After the completion of the course, students will be able to	Remarks
CO1	The focus of medical Geography is on the geographical patterns of health and diseases from the view point of the populations.	K2
CO2	Medical Geography seeks to improve our understanding of the various factors which affect the health of the population.	K3
CO3	Medical Geography helps researchers to understand the power of mapping their study data and understanding health and disease.	K3
CO4	Understanding of the health problems based on the various geographic factors influencing them.	K4
CO5	It focuses on the topics of disease diffusion and human ecology, role of geographical information systems for health and healthcare disparities and various methods for analyzing health/disease data.	K5

\*K1- Remember, K2- Understand, K3- Apply, K4 - Analyze, K5- Evaluate

**Outcome Mapping:**

PO/CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	3	3	3	3	3	2	3	2
CO2	3	3	3	2	3	3	3	3	3	3	3
CO3	3	2	3	2	3	3	2	3	3	3	2
CO4	3	3	3	3	3	3	3	3	2	3	3
CO5	2	3	2	2	3	2	3	3	3	3	3

\*Strongly Correlating - 3

Weekly Correlating - 1



Moderately Correlating - 2

No Correlation - 0



Park, 19<sup>th</sup> edition, Bhandari,  
 sons, New Delhi, 2007.  
 Life and Death in India - Misra, R.P.,  
 and  
 Misra, New Roayan  
 Publishing Company, 2004. and

P21GEN21 GEOGRAPHY OF INDIA FOR COMPETITIVE EXAMINATIONS	L	T	P	C
	5	-	-	4

**Learning Objectives:**

1. This course provides an insight into different aspects of physiography, climate, regional variability and culture in India
2. Describing the Importance of the value of Regional and Regionalization of Indian.
3. Students can acquire an overall knowledge of agriculture, region, industry, transport and trade of India.
4. Students will understand the social distribution of population and transportation network of their country.
5. They understand the economic resources of India.

<b>Unit I</b>	<b>Induction</b> Location – Continent of unity in diversity- Relief – drainage-climate-soil – types and distribution - Natural vegetation- types and distribution	<b>12 hours</b>
<b>Unit II</b>	<b>Irrigation</b> Irrigation - Need for Irrigation – Types – canal – tank - well - Multipurpose projects	<b>12 hours</b>
<b>Unit III</b>	<b>Agriculture</b> Agriculture – types - Major crops- rice, wheat, millets, cotton, oilseeds, tea, coffee and jute – Agricultural regions - problems – Animal husbandry.	<b>12 hours</b>
<b>Unit IV</b>	<b>Minerals</b> Minerals – coal, oil, iron ore, manganese , bauxite, copper – Power resources – Hydel, thermal and atomic - Industries-Iron and Steel, Cement. Textile, Sugar . Paper, Shipbuilding – Small scale and Cottage Industries.	<b>12 hours</b>
<b>Unit V</b>	<b>Population</b> Population Growth – distribution- density and problems.- Transport and trade.	<b>12 hours</b>

**TEXT BOOKS:**

1. Thom Bury D. Principles of Geomorphology, Wiley Eastern Ltd. New Delhi – 1984.
2. Dayal P. A Text book of Geomorphology, Shukla book Dept. Patna – 1995.
3. Lal. D.S., Climatology , Chatanya Publishing House, Allahabad. 1990
4. Howard J. Chritchfield, General Climatology, Prentice – Hall of India Pvt Ltd, 1987
5. Sharma.R.C., and M.Vital – Oceanography for Geographers , Chatanya publishing house , Allahabad, 1987



6. Trivedi, R.N - A Text Book of Environmental Sciences, Anmol Publications Pvt  
New Delhi, 1997

Course Code  
**CORE XIV**  
Learning

**REFERENCE BOOKS:**

1. Sexna, H.M – Environmental Geography, Rawat Publications Jaipur, 1999
2. F.J. Monkhouse and H.R Wilkinson, Maps and Diagrams, B.I. Publications, 1998,
3. Gopal Singh – Geography of India, Atma Ram & Sons, New Delhi, 1995
4. Sharma T.C. and Coutinho. O – Economic and Commercial Geography of India, Vikas publishing house Pvt Ltd, New Delhi, 1998
5. C.S.Agarwal & P.K.Grag – Text Book of Remote Sensing – Wheeler Publishing 2000

**Learning Outcomes:**

CO	After the completion of the course, students will be able to	Remarks
CO1	The student will get familiarized with the geographic dimensions of India in terms of its political and administrative characteristics; aspects of its regional vitality; and formation of regions.	K2
CO2	The student will understand climatic condition and seasons in India.	K3
CO3	They understand globalization and Indian economy and also understand the regional distribution of resource.	K2
CO4	They understand the population problems in India. Access the population policies and reaction the countries.	K4
CO5	Applying the knowledge of global issues to a unique scientific problem.	K5

\*K1– Remember, K2– Understand, K3– Apply, K4 – Analyze, K5– Evaluate

**Outcome Mapping:**

PO/CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	2	3	2	2	3	3	3	3
CO4	3	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	2	3	2	3	3	3	3	3

\*Strongly Correlating – 3  
Weekly Correlating – 1

Moderately Correlating – 2  
No Correlation – 0

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**POPULATION GEOGRAPHY**

L	T	P	C
5	-	-	4

**Learning Objectives:**

1. This course introduces the history of population, methodology of population geography, sources & types of population data and spatial distribution of population with causative factors.
2. Get knowledge about the various theories and concepts related to population
3. The study of the population is an essential component in the planning of current various human related issues.
4. They get knowledge about various kinds of demographic problems eg. Zero, under & decline population.
5. Population Geography also deals with population policies in developed & developing countries .

**Unit I Introduction 12 hours**  
 Nature, scope and significance of population geography – Sources of populations data – Reliability of population data. Distribution and density of world population – Factors and pattern distribution.

**Unit II Dynamics of Population 12 hours**  
 Fertility – its measures and determinants and world pattern - mortality – its measures and determinants and world trend – world population growth and its trend – theories of populations growth – Malthus , Ricardo and Marx.

**Unit III Demographic Transition 12 hours**  
 Migration types – determinants – consequences of migrations – laws of migration – policies of migrations.

**Unit IV Populations Composition Characteristics 12 hours**  
 Age, sex, rural, urban, occupation education – literacy – determinants and world pattern

**Unit V Population Resource and Policies 12 hours**  
 Population resource relationship – Optimum population under population –over population – population policies.

**TEXT BOOKS:**

1. Jones, H.R., Population Geography, Paul Chapman, London, 2000.
2. Mamoria, C.B. India's Population Problems, Kitab Mahal, New Delhi, 1981.
3. Mitra, Ashok, India's Population Problems and Control (Vol. I &II), Kitab Mahal, New Delhi, 1978.



4. Chandna R.S Geography of Population Concepts, Determinants and patterns, Kalyani Publishers., NewDelhi 1980
5. ClarkJohn.I.-Population Geography Pergamum Press Ltd, Oxford 1981
6. Gosh,B.N -Population Geography, Sterling Publications,1987
7. Beauju-Garneir,J-Geography of Population, Longman group Ltd, 1978

**REFERENCE BOOKS:**

1. Beaujeu, Garnier, J. Geography of Population, Longman, London, 1966.
2. Bogue, D.J. Principles in Demography, John Wiley, New York, 1969
3. Chandna, R .C. Geography of Population, Kalyani Publ., New Delhi, 2000.
4. Clarke, J.I. Population Geography, Pergamon Press, Oxford,1972
5. Garnier, B. J.Geography of Population, Longman, London, 1970.
6. Ghosh, S. Settlement Geography, Orient Longman Ltd. , Kolkata, 1998.

**Learning Outcomes:**

CO	After the completion of the course, students will be able to	Remarks
CO1	After this lesson the students can develop their understanding of the distribution of the population and its various characteristics including population growth, density, fertility, mortality, death rate, birth rate etc.	K2
CO2	They can understand the negative or positive effects of population distribution and growth in the society and can create awareness among the people of society regarding this.	K2
CO3	Students will be analyzing the global trend and patterns of population growth in developing countries and migration patterns.	K4
CO4	Students will be evaluating the population growth theory and migration theories.	K4
CO5	Students will understand the population policies and their importance in different countries.	K5

\*K1- Remember, K2- Understand, K3- Apply, K4 - Analyze, K5- Evaluate

**Outcome Mapping**

PO/CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	3	3	3	3	3	3	3	2
CO2	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	2	3	2	2	3	3	3	3
CO4	3	3	3	3	3	3	3	3	2	3	3
CO5	3	3	3	2	3	2	3	3	3	3	3

\*Strongly Correlating - 3  
Weekly Correlating - 1

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Moderately Correlating - 2  
No Correlation - 0

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Course Code	P21WSS33	<b>WOMENEMPOWERMENT</b>			
Supportive Course III					
		L	T	P	C
		5	-	-	2

**Learning Objectives:**

1. To understand about Women Empowerment
2. To Highlight the various types of empowerment
3. To motivate learners to participate in developmental programmes
4. To sensitize other women too to make aware of empowerment opportunities
5. To Transform women to get real empowerment

- Unit I Introduction** **6 hours**  
 Empowerment – Meaning and concept of empowerment – Individual and collective empowerment – Framework for empowerment – Choices women can make for empowerment – Constitution of India – Social Legislation – The Five Years Plans- Welfare approach – Women in Development – Equity approach – Empowerment approach – Indian Women Today – Concept of Agency – Empowerment indicators.
- UNIT II Social Empowerment** **6 hours**  
 Meaning – Importance and framework – Demography, education, health and nutrition, environment, violence against women – problems and rights of the girl child – Media – Science and technology – Women in difficult circumstances.
- UNIT III Economic Empowerment** **6 hours**  
 Women in labour force participation – Women and domestic work – Home based work – Work in organized and unorganized sector – Women in agriculture – industry and service sector – women entrepreneurs – Women self-help groups (Micro credit), Gender and poverty – Globalization and women
- UNIT IV Political Empowerment** **6 hours**  
 Need of women in politics – Dominant women in politics – political participation in grass root level- Barriers for participation of women in local governments – Reservation policy for women in politics – Legal empowerment.
- UNIT V Decision Making** **6 hours**  
 Capacity building for empowerment of women – Gender training and capacity building – Training methodology – women Leadership – Group dynamics – Problem solving – Conflict resolution – Group discussions – Crisis management.

### TEXT BOOKS:

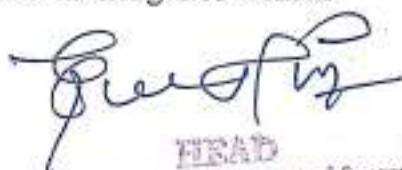
1. Government of India, Planning and Commission, Five Year Plans, the Tenth Five- Year Plan. (1951-56 to 2012-17)
2. Meena Priyadarshini S, "SocialempowermentofWomen", 24/7publications, Kolkatta, 2017.
3. Judge, P.S., "Mapping Social Exclusion in India: Caste, Religion and Borderlands", Cambridge University Press, Delhi, 2014.

### REFERENCE BOOKS:

1. Haque, T, "Empowerment of Rural Women in Developing Countries: Challenges and Pathways", New Delhi: Concept Publishing Company, 2015.
2. Ramachandran, Vimala and Kameshwari Jandhyala (ed). Cartographies of Empowerment: The Mahila Samkhyas Story. New Delhi: Zubaan, 2012.

### Learning Outcomes:

1. Understand Social, Economical and Political Empowerment
2. Make aware of importance of Women Empowerment
3. Understand the women development agents
4. Critically analyze the life style and challenges of women



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P21GEE411	CHOICE -I			
ELECTIVE -1	SOCIAL GEOGRAPHY			
	L	T	P	C
	5	-	-	4

**Learning Objectives:**

1. Understanding the concept of space and place, religions and language groups.
2. Explaining the Human health and Health care planning.
3. Explaining the concept of culture, cultural regions and cultural imperialism.
4. Recognize the difference between boundary and land boundary.
5. Understanding the connection between Hartland theory and Rimland theory and contemporary politics.

- UNIT I Introduction of Social Geography** **12 hours**  
 Social Geography – Nature and scope – social structure and processes – concept of space and place –social wellbeing – quality of life. – social exclusion, derivation and discrimination issues relating to under privileged groups–spatial distribution of social groups in India, tribes, castes, religions and language groups.
- UNIT II Concept of Culture And Cultural Regions in World** **12 hours**  
 Concept of culture, culture complex, culture areas and cultural regions, cultural heritage, cultural interactions, cultural diffusion and cultural ecology – cultural imperialism.
- UNIT III Health Factors** **12 hours**  
 Health – factors affecting human health – nutritional status, diseases – etiological condition, classification and distribution patterns, – Health care planning and policies in India, prospects of medical tourism in India.
- UNIT IV Development of Political Geography** **12 hours**  
 Concept of boundaries and frontiers, heart land and rim land theories – conflicts – resource, regional and ethnic human rights and conflicts resolution – recent trends and development in Political Geography.
- UNIT V Geo-Politics of World** **12 hours**  
 Geopolitics of climatic change, geopolitics of World Resources – regional organizations of cooperation (SAARC, ASEAN, OPEC, EU)

**TEXT BOOKS:**

1. Majid Husain – Human Geography – Rawat Publications 1994.
2. GillianC.Morgan –Human and Economic Geography, Oxford University Publications 1999.

**REFERENCE BOOKS:**



## SEMESTER- V

### CORE - X - HUMAN GEOGRAPHY

- UNIT I Scope and content, definition - different viewpoints - concept of determinism, Possibilism and Probabilism - Recent trends in human geography - branches in human geography.
- UNIT II World cultural regions - Food gatherers - Semang and Sakai; Hunters - Bushmen - Cultivators - People of the Malabar coast - Nomads- Masai and levels of culture in twentieth century.
- UNIT III Human Races - Classification - Distribution - Religion - Major types and distribution.
- UNIT IV Population - Spatial pattern of distribution - growth - problems of over population and under population - population Theory - Malthus and optimum theory - Migration - Causes - consequences and problems.
- UNIT V Rural and Urban settlement - factors - types - growth - Urban morphology and functional classification of towns - Urbanization - Trend, level, - World , India.

#### REFERENCE BOOKS :

1. Majid Husain-Human Geography-Rawat Publications 1994.
2. Gillian C.Morgan - Human and Economics Geography, Oxford University Publications 1999.
3. Aime Vincent Perpillou-Human Geography, Longman Group limited London 1977.
4. C.Daryll Forde-Habitat, Economy and Society, Methuen Publishers 1977.
5. Ray-M.Northam-Urban Geography, John Wiley and sons Publications - 1979.

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## SEMESTER – III

### SBE – I – PRACTICAL -REPRESENTATION OF RELIEF FEATURES

- Unit I Representation of relief features by hachures- hill shading- layer tinting - spot heights- and bench marks.
- Unit II Contours – contour interval- gradient – representation Of relief features by contours.
- Unit III Area height curve – hypsometric graphs- Interpolation of contours.
- Unit IV Cartographic symbols - point -line and area symbols

### REFERENCE BOOKS

- 1 R.L. Singh \_ Elements of Practical Geography, Kalyani Publishres, New Delhi
- 2 F.J. Monkhouse and H.R Wilkinson, Maps and Diagrams, B.I. Publications, Madras
- 3 Gopal Singh – Map work and Practical Geography, Vikas publishing house Ltd
- 4 V.P. Subrahmanyam and Subramaniam,A.R. Application of water balance concept for a climatic study of droughts in south India, 1964
- 5 M.D.Zulfequar ahamad Khan –Text Book of Practical Geography, Concept Publishing Company, NewDelhi.

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## SEMESTER - III

### NME - I - PRICIPLES OF REMOTE SENSING

- UNIT I Principles of remote sensing - History.
- UNIT II EMR - Electromagnetic spectrum - Energy interactions with atmosphere and earth surface features.
- UNIT III Platforms - Sensors.
- UNIT IV Aerial photographs - types - elements of interpretation and uses of aerial photographs.
- UNIT V Satellite imagery - types - visual image interpretation - uses of satellite imageries.

#### BOOK FOR REFERENCE.

1. C.S.Agarwal & P.K.Grag - Text Book of Remote Sensing - Wheeler Publishing 2000
2. Gampbell. James B.I Introduction to Remote Sensing - The Guild Press ,New York
3. Curran - Fundamentals of Remote Sensing - Longman, London
4. Lillesend TM & Kiefer R.W - Remote Sensing & Image Interpretation - John Wiley & sons, New York
5. Luedev D.R. Aerial Photographic Interpretation Mc. Graw Hill Company, New York

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## SEMESTER-IV

### SBE - II - COMPUTER APPLICATIONS IN GEOGRAPHY

- UNIT-I Concept of computer system- Components and memory-  
Concept of hardware, software, algorithms, systems analysis  
and computer  
programming.
- UNIT-II MS office: Use of Word, Excel, Access and Power point
- UNIT-III Software operating system- Programming languages  
application oriented software-Mapping remote sensing, GIS  
and statistical software's.
- UNIT-IV Use of SPSS-Statistical summaries of mean, median, mode and  
standard deviation.
- UNIT-V Use of computer in generating correlation regression and  
hypothesis testing.

#### REFERENCE BOOKS

1. Microsoft Office 2000 - Maria Reid and Karl Schwartz, BPB Publications, New Delhi.
2. Fundamentals of Computers - V. Raja Raman.
3. Introduction to Computers - Peter Norton - Tata Mc Graw - Hill publishing company limited - New Delhi - 2000.
4. PC Software made simple( MS Office ) - R.K. Taxali.

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## SEMESTER-IV

### NME - II - GEOGRAPHICAL INFORMATION SYSTEM

- UNIT I GIS - Definition - history - components - hardware - software - data - people.
- UNIT II Geographic data - point, line and area - spatial data and non spatial data.
- UNIT III Data model - raster and vector - data conversation - digitization - errors.
- UNIT IV Database Management System (DBMS) - use of GIS.
- UNIT V GPS - Definition - history - segments - uses.

#### REFERENCE BOOKS

1. Ball D.R. - Babbage - Geographic Information System for Defence Application - Pergamon Press - Australia
2. Barrette & Burough - Principles of GIS for Land Resource Assessment - Clarendon Press - Oxford
3. Bidhanesh Misra - Geographic Information System & Economic Development.
4. Lan Heywod, Sarah Cornelines, An Introduction to Geographical Information System I Addison - Wesley, Longman Ltd, 2000

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## SEMESTER- V

### SBE – III – Practical - Application of Statistical methods in Geography

- Unit I Basic concepts- data- Data sources and types of data raw data- variables- class- class limits- class boundaries- class width- class – class mark- class frequencies.
- Unit II Frequency distribution – cumulative frequency – graphical representation of frequency distribution.
- Unit III Histogram – frequency curve – frequency polygon- cumulative frequency polygon – cumulative frequency curve.
- Unit IV Mean- median –mode – Skewness and Kurtosis - Selection of class intervals for mapping.

#### REFERENCE BOOKS

- 1 R.L. Singh \_ Elements of Practical Geography, Kalyani Publishres, New Delhi
- 2 F.J. Monkhouse and H.R Wilkinson, Maps and Diagrams, B.I. Publications, Madras
- 3 Gopal Singh – Map work and Practical Geography, Vikas publishing house Ltd
- 4 V.P. Subrahmanyam and Subramaniam,A.R. Application of water balance concept for a climatic study of droughts in south India, 1964
- 5 M.D.Zulfequar ahamad Khan –Text Book of Practical Geography, Concept Publishing Company, NewDelhi.

  
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## SEMESTER - VI

### SBE -IV - PRACTICAL \_ PRINCIPLES OF SURVEYING

- Unit I Basic principles of survey- classification of survey- survey instruments- and accessories.
- Unit II Chain survey- open and closed methods - method of recording measurements in field book.
- Unit III Plane table survey- prismatic compass - open and closed traverses
- Unit IV Indian clinometers and dumpy level surveying - uses of survey instruments.

#### REFERENCE BOOKS

- 1 R.L. Singh \_ Elements of Practical Geography, Kalyani Publishres, New Delhi
- 2 F.J. Monkhouse and H.R Wilkinson, Maps and Diagrams, B.I. Publications, Madras
- 3 Gopal Singh - Map work and Practical Geography, Vikas publishing house Ltd
- 4 V.P. Subrahmanyam and Subramaniam,A.R. Application of water balance concept for a climatic study of droughts in south India, 1964
- 5 M.D.Zulfequar ahamad Khan -Text Book of Practical Geography, Concept Publishing Company, NewDelhi.

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Course Code	P21GET23		L	T	P	C
CORE -VIII		MEDICAL GEOGRAPHY	5	-	-	4

### Learning Objectives:

1. The broad objective of the course is introduced to the student the concept of health and Disease, climate and Disease.
2. To guide students to learn the Nutrition Deficiency related Disease and the Geographical perspectives of communicable and non-Communicable Disease.
3. Student will be exposed the Disease Ecology, Disease diffusion and the Dynamics of major Disease.
4. Student will understand the Medical Geography, medical Statistics and disease measurement and analysis.
5. To know the hierarchy of Medical services and GIS in public surveillance and monitoring.

#### Unit I Perspectives on Health 12 hours

Nature, scope and development of Medical Geography – Traditional and contemporary approaches – Concept of Health and Diseases – Reproductive Health – Climate and Health – Human diseases – Classification – Infectious, Degenerative and chronic, inherited and genetic diseases.

#### Unit II Diseases Pattern 12 hours

Nutrition - Deficiency related diseases - Geographical perspectives of Communicable and Non-communicable diseases - Epidemic, Endemic and Pandemic nature of diseases - Major Tropical diseases - Malaria, Filariasis and Leprosy Cancer and Heart attack - Social diseases - HIV/AIDS, STD.

#### Unit III Disease Ecology 12 hours

Determinants of diseases + Interplay of environmental, cultural, socio-economic and ecological factors – Gender and health – Diseases of the rich and poor - Disease diffusion – Concepts – Dynamics of major diseases – Migration and Disease – Travel Medicine.

#### Unit IV Medical Cartography 12 hours

Measurement techniques of diseases Disease mapping techniques at macro, meso and micro levels – Medical statistics – Epidemiological methods in disease measurement and analysis – Measurement of Morbidity and Mortality.

#### Unit V Health Care Delivery System and GIS Technics 12 hours

Health care delivery system - Hierarchy of medical services – Planning for manpower, infrastructure and service facilities of health care – Rural and urban disparities – Health education – Improved Health care delivery system – GIS in Public Health surveillance and monitoring Environmental and Health data management.

### TEXT BOOKS:



Course Code	P21GEN21	GEOGRAPHY OF INDIA FOR COMPETITIVE EXAMINATIONS	L	T	P	C
ELECTIVE – I (NME)			5	-	-	4

#### Learning Objectives:

1. This course provides an insight into different aspects of physiography, climate, regional variability and culture in India
2. Describing the Importance of the value of Regional and Regionalization of Indian.
3. Students can acquire an overall knowledge of agriculture, region, industry, transport and trade of India.
4. Students will understand the social distribution of population and transportation network of their country.
5. They understand the economic resources of India.

<b>Unit I</b>	<b>Induction</b> Location – Continent of unity in diversity- Relief – drainage-climate-soil – types and distribution - Natural vegetation- types and distribution	<b>12 hours</b>
<b>Unit II</b>	<b>Irrigation</b> Irrigation - Need for Irrigation – Types – canal – tank - well - Multipurpose projects	<b>12 hours</b>
<b>Unit III</b>	<b>Agriculture</b> Agriculture – types - Major crops- rice, wheat, millets, cotton, oilseeds, tea, coffee and jute – Agricultural regions - problems – Animal husbandry.	<b>12 hours</b>
<b>Unit IV</b>	<b>Minerals</b> Minerals – coal, oil, iron ore, manganese , bauxite, copper – Power resources – Hydel, thermal and atomic - Industries-Iron and Steel, Cement, Textile, Sugar , Paper, Shipbuilding – Small scale and Cottage Industries.	<b>12 hours</b>
<b>Unit V</b>	<b>Population</b> Population Growth – distribution- density and problems.- Transport and trade.	<b>12 hours</b>

#### TEXT BOOKS:

1. Thorn Bury D. Principles of Geomorphology, Wiley Eastern Ltd. New Delhi – 1984.
2. Dayal P. A Text book of Geomorphology, Shukla book Dept, Patna – 1995.
3. Lal. D.S., Climatology , Chatanya Publishing House, Allahabad, 1990
4. Howard J. Chritchfield, General Climatology, Prentice – Hall of India Pvt Ltd, 1987
5. Sharma.R.C., and M.Vital – Oceanography for Geographers , Chatanya publishing house , Allahabad, 1987



## SEMESTER - IV

### CORE - XIII- POPULATION GEOGRAPHY

- UNIT I Nature, scope and significance of population geography - sources of populations data - Reliability of population data. Distribution and density of world population - Factors and pattern distribution.
- UNIT II Dynamics of population - fertility - its measures and determinants and world pattern - mortality - its measures and determinants and world trend - world population growth and its trend - theories of populations growth - Malthus , Ricardo and Marx.
- UNIT- III Demographic transition - Migration types - determinants - consequences of migrations- laws of migration - policies of migrations.
- UNIT - IV Populations composition characteristics - age . sex, rural, urban, occupation education - literacy - determinants and world pattern
- UNIT - V Population resource relationship - optimum population under population - over population - population policies.

### Reference Books

1. Chandna R.S - A Geography of Population Concepts, Determinants and patterns, Kalyani Publishers., New Delhi 1980
2. Clark John. I.- Population Geography Pergamum Press Ltd. Oxford 1981
3. Gosh, B.N - Population Geography, Sterling Publications. 1987
4. Beauju- Garneir.J -Geography of Population, Longman group Ltd, 1978

  
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## SEMESTER - I

### ELECTIVE - I - SOCIAL GEOGRAPHY

- UNIT - I** Social Geography - Nature and scope - social structure and processes - concept of space and place - social well being - quality of life - social exclusion , derivation and discrimination issues relating to under privileged groups - spatial distribution of social groups in India, tribes, castes , religions and language groups.
- UNIT - II** Concept of culture, culture complex, culture areas and cultural regions, cultural heritage, cultural interactions, cultural diffusion and cultural ecology - cultural imperialism.
- UNIT - III** Health - factors affecting human health - nutritional status, diseases - etiological condition, classification and distribution patterns, - Health care planning and policies in India, prospects of medical tourism in India.
- UNIT - IV** Concept of boundaries and frontiers, heart land and rim land theories - conflicts - resource, regional and ethnic human rights and conflicts resolution - recent trends and development in Political Geography.
- UNIT - V** Geopolitics of climatic change, geo politics of World Resources - regional organizations of co operation ( SAARC, ASEAN, OPEC , EU)

#### REFERENCE BOOKS

1. Majid Husain-Human Geography-Rawat Publications 1994.
2. Gillian C.Morgan - Human and Economic Geography, Oxford University Publications 1999.
3. Aime Vincent Perpillou-Human Geography, Longman Group limited London 1977.
4. C.Daryll Forde-Habitat, Economy and Society, Methuen Publishers 1977.
5. Chandna-Popualtion Geography, Kalyani Publishers.

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## SEMESTER - II

### ELECTIVE - II - ENVIRONMENTAL GEOGRAPHY

- UNIT I Environment - Elements and Types Man and environment relationships - determinism - possibilism, changing nature of concept - lithosphere - hydrosphere - biosphere - multi disciplinary approach
- UNIT II Concept of Ecosystem - Ecosystem - structure - classification - Biomes - functioning of the ecosystem - food web - food pyramid - nutrient cycle - biodiversity - types .
- UNIT III Natural disruptions of the ecosystem - natural hazards - land slide, earth quake, volcano , floods, droughts, pollution, human interference on ecosystem - population growth and its impact - Man's modifications of the biosphere - agriculture - Green Revolution - HYV and pesticides - mining, soils - coastal areas.
- UNIT IV Environmental planning and management; objectives and strategies; natural resource management and conservation ( land, water and forest) - sustainable development concept, need, problems and strategies - EIA principles and procedures.
- UNIT V The Stockholm conference, the earth summits and round tables, climate change (causes and consequences), Kyoto Protocol, world climate data monitoring programme (WCD MP), Environment related policies and programmes in India pertaining to wild life, water, forest and environment; Environment Governances

#### BOOKS FOR REFERENCE

- 1 Trivedi, R.N - A Text Book of Environmental Sciences, Anmol Publications Pvt.Ltd New Delhi, 1997
- 2 Sexna, H.M - Environmental Geography, Rawat Publications Jaipur, 1999
- 3 Savindhra Singh - Environmental Geography Prayag Pushtak Bhawan University Road, Alagabad 1991
- 4 Gillbert White - Environment as a Hazard, Toronto, 1978
- 5 Bruce Mitchell - Resources and Management Orient Long Man London, 1991



## SEMESTER- V

### SBE - IV - GEOGRAPHY OF HEALTH

- UNIT-I Geography of health- Nature, Scope, Significance and development.
- UNIT-II Geographical factors affecting human health- Physical - Social and environmental Factors
- UNIT-III Classification of diseases- infectious, degenerative and chronic, inherited and genetic disease.
- UNIT-IV Geographical perspectives of Communicable and Non communicable diseases- disease mapping techniques at macro, meso and micro levels.
- UNIT- V Health care planning in India-Health care services- Primary health, family welfare and Immunization.

#### BOOKS FOR REFERENCE

1. Hunter, J.M - The geography of Health and Diseases , paper of the first Caroline Geographical Symposium.
2. M.C.Glashan, M.D.- Medical Geography - Techniques & Field Studies, Methuen University Paper Packs.
3. Shannan, G.W & Devar Gea - Health Care Delivery Spatial perspectives, New York, Mecgrawhill.
4. White, K.L - Health Services, Concept & information for national Planning and Management, WHO Geneva.
5. R.P. Misra - Medical Geography of India , National Book trust, New Delhi
6. May J.M - Studies in Disease Ecology, Hefiner New York.

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## SEMESTER - VI

### SBE - IV - BIOGEOGRAPHY

- UNIT I** Definition, scope and significance of biogeography - basic ecological concepts and principles - ecosystem - types of ecosystems - components of ecosystem - functioning of ecosystem - concepts of biome - types, ecotone and community - bio diversity.
- UNIT II** Origin of fauna and flora - plant and animal evolution through geological times, - distribution of plant life on earth and its relation to soil types - climates and human practices.
- UNIT III** Problem of extinction of plant and animal life - habitat decay and their conservation - process of desertification - its consequences and its management principles.
- UNIT IV** Industrial effluent and its effect on fresh water biology - management practices (special reference to India)
- UNIT V** Study of ecological regions of Himalayas and Western Ghats in relations to their plant and animal life, their Interrelations, problems - conservation and management measures.

#### REFERENCE BOOKS

1. Robinson - Biogeography - ELBS Mc Donald and Evans London, 1982
2. L.G. Simons - Biogeographically process - Allen and Unwell, London.
3. C Barry - Cox, Black Well - Biographical - an Ecological Evolutionary approach - Oxford 1977

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## SEMESTER - III

### SBE - I - DISASTER MANAGEMENT

- UNIT I Environmental Hazards - earthquake, volcanoes, landslide
- UNIT II Global Warming - Greenhouse effect - cyclones, floods, tsunami - drought.
- UNIT III Human impact on agriculture - industries
- UNIT IV Deforestation - Desertification - Pollution - nature and classification
- UNIT V Environmental Impact Assessment and Disaster management.

#### REFERENCE BOOKS

1. Robinson H. - Biogeography, Plymouth, MacDonal and Evans Ltd., - 1972.
2. Mohammad safi - Mehdi Raza - New Delhi, Rawat Publications - 1994.
3. Sharma P.D. - Ecology and Environment, Meerut, Rasogi Publications.
4. Trivedi P.R - Water Pollution, New Delhi, Akashdeep, Publishing House - 1992.

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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF COMPUTER  
SCIENCE**

**SYLLABUS**

## NON-MAJOR ELECTIVE (OFFERED BY PARENT DEPARTMENT)

COURSE CODE	U21CSN31	WEB DESIGNING USING HTML LAB	L	T	P	C
			2	-	-	2
NME - I						
Cognitive Level	K1: Recall K2: Understand K3: Apply K4: Analyze					

### OBJECTIVES:

- To Use formatting tags in HTML.
- To recognize How to Insert the Image file in web pages.
- To understand How to navigate through web pages.
- To become Master in creating Web pages using basic HTML tags.

### LAB Exercises

- Web page creation using head, title, body, h1 – h6
- Web page creation using formatting tags (bold, italic, underline etc)
- Ordered list
- Unordered list
- Definition list
- Marquee creation
- Web page with images
- Web page creation with various font styles and body colors.
- Hyper link
- Tables
- Frames
- Forms

### COURSE OUTCOMES:

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

- CO1: Understand the concepts of webpage - K2  
 CO2: Analyze various tags in HTML - K4  
 CO3: Gain knowledge in creating webpage - K1  
 CO4: Design new webpages using HTML - K3  
 CO5: Recognize to navigate the web pages using HTML - K2

### MAPPING OF CO'S WITH PO'S AND PSO'S

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	S	M	M	S	S	S	S
CO2	S	S	M	S	M	W	S	S	S	S
CO3	S	W	M	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	M	M	M	M
CO5	S	S	S	M	S	S	S	W	S	M

S - Strongly Correlating - 3 Marks

M - Moderately Correlating - 2 Marks

W - Weakly Correlating - 1 Mark

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COURSE CODE	U21CSN42	PHOTO DESIGNING TOOLS	L	T	P	C
NME - II			2	-	-	2
Cognitive Level	K1: Recall K2: Understand K3: Apply K4: Analyze					

### OBJECTIVES:

1. To navigate Photoshop's Workspace, Create & setup documents
2. To Understand about the Layers and Masking.
3. To work with effects, filters and adjustments
4. To create a broad range of design skills pertaining to publication & web design.

### Exercises

1. Album preparation
2. Invitation Preparation
3. Wall Papers
4. Visiting Card
5. Background Changing and Removing
6. Birthday Card
7. Friendship Card
8. Wedding invitation Card
9. Cloning an Image
10. Flex Designing
11. Photo Editing
12. Book Cover

### COURSE OUTCOMES

On completion of the course, the student will be able to

- CO1: Design real world applications using photoshop - K3
- CO2: Analyze new features in Photoshop - K4
- CO3: Develop new drawings using Photoshop - K3
- CO4: Expertise to work with Photoshop - K1
- CO5: Design skills pertaining to publication & web design - K3

### MAPPING OF CO'S WITH PO'S AND PSO'S

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	S	M	M	S	S	M	S
CO2	S	S	M	S	M	W	S	S	M	S
CO3	S	S	M	S	S	S	S	S	S	S
CO4	S	S	W	M	S	S	S	M	S	M
CO5	S	S	M	S	S	S	S	S	S	S

S - Strongly Correlating - 3 Marks

M - Moderately Correlating - 2 Marks

W - Weakly Correlating - 1 Mark

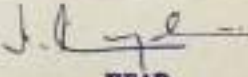
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## NON MAJOR ELECTIVE OFFERED FOR OTHER DEPARTMENT STUDENTS

COURSE CODE	P21CSN211	CHOICE - I	L	T	P	C
SEMESTER - II		C PROGRAMMING	4	-	-	4

Cognitive Level	K1: Recall	K2: Understand	K3: Apply	K4: Analyze
Objectives	<ul style="list-style-type: none"> <li>• To introduce students to the basic knowledge of programming fundamentals of C language.</li> <li>• To impart writing skill of C programming to the students and solving problems.</li> <li>• To impart the concepts like looping, array.</li> <li>• To impart the knowledge on functions and pointers.</li> </ul>			
<b>Lab Exercise:</b>				
<p>Simple Programs:</p> <ol style="list-style-type: none"> <li>1. Finding the largest, smallest among three numbers</li> <li>2. Generate the Fibonacci sequence</li> </ol> <p>Control Structures:</p> <ol style="list-style-type: none"> <li>1. Find whether a number is prime or not</li> <li>2. Find whether a given number is a perfect or not</li> <li>3. Find the factorial of a number</li> </ol> <p>Arrays:</p> <ol style="list-style-type: none"> <li>1. Program for Sorting</li> <li>2. Program to search an element</li> <li>3. Find whether given string is a palindrome or not</li> <li>4. Perform the addition of two matrices</li> <li>5. Perform subtraction of two matrices</li> <li>6. Perform multiplication of two matrices</li> </ol> <p>Functions:</p> <ol style="list-style-type: none"> <li>1. Program to apply Recursion</li> <li>2. Program for Call by Value</li> </ol> <p>Pointers:</p> <ol style="list-style-type: none"> <li>1. Program to perform addition</li> <li>2. Program for swapping two numbers</li> </ol> <p>Structures:</p> <ol style="list-style-type: none"> <li>1. Program to print student information using structures</li> <li>2. Program for Array of structures</li> </ol> <p>File:</p> <ol style="list-style-type: none"> <li>1. Program for applying File operations</li> <li>2. Program to get n numbers and find odd and even numbers using file.</li> </ol>				

  
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**NON MAJOR ELECTIVE (OFFERED BY PARENT DEPARTMENT)**

**Objectives:**

1. To understand the history of computer.
2. Broad Understanding about I/O Devices.
3. Comprehensive Knowledge about Software.
4. The Student can Familiar in handling the computer.

**FUNDAMENTALS OF COMPUTER**

**UNIT I**

Introduction to computers - Generation of Computers - Types of Computers  
Comparison of Micro, Mini and mainframe computers - Advantages of Computer -  
characteristics of Computer - limitations of computer.

**UNIT II**

Block diagram of a Computer - input devices - output devices - storage devices - RAM  
- ROM - comparison b/w RAM and ROM - Secondary storage devices.

**UNIT III**

Types of Software - Operating systems - Need for an operating systems - functions of  
OS - popular operating systems - five generation of programming languages - packages.

**UNIT IV**

Binary number system - Binary Arithmetic operations (Addition, Subtraction,  
Multiplication, Division) - ASCII codes - Algorithms - Flow chart - Pseudo codes - steps in  
programming.

**UNIT V**

Definition - Features of networks - Network Topologies - LAN - WAN - MAN -  
Comparison between LAN and WAN - Introduction to Internet - History of internet uses of  
Internet - working with windows.

**Text Book:**

1. Fundamentals of IT - Alexis, Mathews Leon.

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PRINCIPLES OF INFORMATION TECHNOLOGY

2

Objectives:

1. To understand the Database.
2. To Know about the Internet.
3. To gain the Deep Knowledge in Multimedia.
4. The Students can Familiar in handling the computer.

**UNIT I**

Introduction – history of Information – Quality of Information – Information processing  
– Database – Characteristics of Data in a Database – DBMS – Types of DBMS – Data  
Normalization.

**UNIT II**

Internet and world wide web : Introduction – getting information on the internet –  
providing information on the internet – compiling information from the internet – internet  
access – basis – protocols – internet addressing – WWW – HTML – Web browsers – searching  
the web.

**UNIT III**

Multimedia Tools: Introduction – graphics effects and techniques – sound & music –  
video – multimedia authoring tools – virtual reality.

**UNIT IV**

Data warehouse & Data Mining: Introduction – advantages of data ware house –  
components – structure – uses – data mining introduction – advantages of data mining –  
technologies used in data mining.

**UNIT V**

Application of information technology: Computers in business and industry – computers  
in home – educations and training – entertainment science and engineering and medicine.

**Text books:**

1. Fundamentals of information technology – Alexis Leon, Mathews Leon

**Reference Book:**

1. Advanced information technology – S. Jaiswal

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## **1.3 CURRICULUM ENRICHMENT**

### **1.3.1 CROSS CUTTING ISSUES**

**DEPARTMENT OF BBA**

**SYLLABUS**

## UBAS31 - FUNDAMENTALS OF INSURANCE (SBE)

### Objective:

1. To encourage students to develop the knowledge about Insurance.
2. To help students to understand the role of micro finance institution in enhancing self, increasing life satisfaction and improving the relationship with others.
3. To develop new ability to develop awareness on insurance types.

### Semester III

No. of Credit – 2

#### UNIT – I

Definition of Insurance – Classification of contracts of insurance – Marine and Non-Marine Insurance.

#### UNIT – II

Life Assurance – Objects of Life assurance – Principles of Life Assurance – Assignment and Nomination – Lapses and Revivals – Surrender values and loans – Claims – Double Insurance.

#### UNIT – III

Marine – Insurance – Principles of Marine insurance – Functions of marine insurance – Types of marine policies – Warranties – kinds of marine Losses.

#### UNIT – IV

Fire Insurance – Principles of law as applied to fire insurance. Fire waste – Hazard Types of fire policies.

#### UNIT – V

Cover Notes – Surveys and Inspections Average – Reinsurance Renewals.

### REFERENCE BOOKS

1. Sharma R.S., Insurance: Principles and Practices, Vora, Bombay.
2. Arifkhan M, Theory and Practice of Insurance, Education Book House.
3. Srinivasan M.N., Principles of Insurance Law, Ramanuja Publishers, Bangalore.
4. Dr. B. Varadharajan, Insurance: Vols. I and II, Tamil Nadu Text Book Society IV - SBEC
5. Dr. R. Haridas, Life Insurance in India, New Century Publication, New Delhi.

  
துறைத்தலைவர்  
வணிகநிர்வாகனியல் துறை  
எம்.சி. ஒத்தரைய அரசு மாண்பு அமைச்சர் கல்யாண்  
புத்தூர்

## UBAS42 - PROJECT MANAGEMENT (THEORY)

### Objective:

1. To give in-depth understanding of the concept and issues and various aspects of project management.
2. To impart the strategies of positioning in project management and identify the right method of promotional events for an organization to introduce new product, offer etc.
3. To familiarize the students with the budget preparation for project and measuring the performance of project.

Semester IV

No. of Credits 2

### UNIT - I

Project management - meaning, definition- features – Purpose of Project management- classification of projects - stages in project cycle – identification, formulation and implementation – Phases of Project management – 7s of Project management.

### UNIT - II

Feasibility study of Projects – Market feasibility, technical feasibility, financial feasibility - different types of appraisal to determine feasibility – feasibility report.

### UNIT - III

Social Cost benefit Analysis - The rationale for Social cost benefit analysis, UNIDO approaches for Social Cost benefit analysis, Methods followed by Financial Institutions.

### UNIT - IV

Estimation of Project cost – Preliminary expenses – cost of acquisition of fixed assets, cost on technical knowhow, acquisition of patents and licenses – documentation charges – preparation of project report

### UNIT - V

Institutional Finance for Projects – National and state level – IDBI, SIDBI, GIC, LIC, UTI, SFC, IFC– functions and schemes

### Text and Reference:

1. Project Management - Vasant Desai, Himalaya Publishing House, Mumbai.
2. Project Management - Goel B.B., Deep & Deep Publications Pvt. Ltd., New Delhi.
3. Project Planning, Analysis - Prasanna Chandra, Tata McGraw-Hill, New Delhi.
4. Project Management and Control -Rao .P .C .K., Sultan Chand & Sons, New Delhi.
5. Project Management: Strategic Financial Planning, Evaluation, and Control - Bhavesh M Patel., Vikas Publishing House, New Delhi.

  
குறைந்தகைவரி  
வணிகநிர்வாகனியக் குறை  
எம்.சி. முத்துமார அரூ மயலி கணல் கர்நாசி  
திருருக்கல்



## UBAS53 - GENERAL APTITUDE & REASONING-I (SBS)

### Objective:

1. To provide a hands on experience in understanding the quantitative techniques to solve problems self.
2. To help the students learn the techniques of breaking competitive exams so that they can face competitive exams

Semester – V

No of Credits - 2

### UNIT – I

Test of reasoning – analogy – choosing the analogy pair I simple analogy – analogy of words and expression – double, triple analogy – numerical analogy – applied analogy

### UNIT – II

Logical Reasoning (Including mathematical) Blood Relations – Odd man out – Pairs as groups – Letter group – Classification of numbers – Understanding the structure of arguments.

### UNIT – III

Synonyms – Antonyms \_ Verb – Error Correction – Tenses – Sentence Rearrangement – Fill in the Blanks with modals, Articles and Prepositions etc, Reading Comprehension

### UNIT – IV

Series Completion – Finding the missing number – Finding wrong term – Alphabet series – Mixed Series

### UNIT – V

Information and Communication Technology (ICT): Meaning, Advantages, Disadvantages – General abbreviations and terminology – Basics of Internet and e-mailing.

### REFERENCE BOOKS:

Any book related to this topic

  
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வணிகநிர்வாகனியல் குறை  
எஸ்.வி. முத்துய்ய அரசு மாண்பு அமைச்சர் கீழ்க் கட்டுரை  
திருப்புகள்.

## UBAS64 -GENERAL APTITUDE & REASONING-II

### Objective:

1. To provide a hands on experience in understanding the quantitative techniques to solve problems self.
2. To help the students learn the techniques of breaking competitive exams so that they can face competitive exams

Semester – VI

No of Credits - 2

### UNIT – I

Coding and Decoding – Letter Coding – Letters and numbers – Letter, numbers and symbols – Metrics coding – Decoding by analysis – Mixed letter coding

### UNIT – II

Problems based on Age, Percentage, Profit and Loss, Discount, Time, Speed and Distance – Permutation and Combination – Volume and Surface areas – HCF and LCM – Simple and Compound Interest

### UNIT – III

Logical Reasoning: Understanding the structure of arguments – Deductive and Inductive Reasoning – logical word sequence – Ranking sequence and position

### UNIT – IV

Reasoning Logical Diagrams: Simple Diagrammatic Relationship – multi diagrammatic Relationship – Venn diagram – Problems based on numbers

### UNIT – V

Mirror image – Question on mirror image – Completion of a pattern

### REFERENCE BOOKS:

Any book related to this topic

  
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வணக்கநிலைவாகவியல் குறை  
எம்.பி. முத்துராய் அரசு மகளிர் கலைக் கல்லூரி,  
நிண்டூக்கம்.