# CURRICULUM FOR BS EMERGENCY TECHNOLOGY



**KHYBERMEDICALUNIVERSITYPESHAWAR**

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### AIMSANDOBJECTIVESOF THE COURSE:

**AIMS:**

Theaimofthe4years degreeprogrammeinEmergencyTechnologyis toequipthe

Students withrelevantprofessionalknowledge,skills,techniques andethicalvalues toenable Themtoapplytheiracquiredexpertiseatthelevelbetweenthedoctors andthepatientfor Efficienthealth servicedelivery.

### GENERAL LEARNINGOBJECTIVES:

EmergencyCareTechnologyeducationandtrainingshouldenablethestudentto:

* Expresstheknowledge,technicalandnontechnical skillsinastandardizedand reproducibleenvironment.
* Generatethedecisionpower andexerciseappropriatejudgmentskills withmatchingapplication.
* Developadministrativeskillsindevelopingcrisis managementplan.
* Designeffectivecommunicationskills toperforminhis workingenvironmenteffectively.
* Constructinterdisciplinaryteambuildingstrategiesforeffectiveco-ordinationamong differentalliedhealthdisciplines.
* Scheduleandmaintaincontinuingeducationas afunctionofhis personaldevelopmentplan
* Showtheexpertiseinlegalimplicationofemergencycases andapplicationofprofessionalattitude.

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### SPECIFICLEARNINGOUTCOMES

Followingcompetencies willbeexpectedfromastudentcompleting4years degreecourseinEmergency Technology.Thestudentshouldbeableto:

* Demonstrateknowledgeofhuman structure,function,anddiseaseprocess.
* Developtheknowledge,skills andattitudes necessarytoperformsafelyandaccuratelyall Basicandadvancedlifesupportproceduresinemergency/criticalcare,traumaand Disastermanagement,etc
* Constructcommon sense,attentiontodetail,prioritizingskillsandanticipation ofpotentialproblemsinthecareoftheacutelyillorinjuredpatient
* Deliver efficientandcompetentcaretocriticallyillinfants andchildren’s.
* Generateexperienceintheanalysis ofdataandmanagementofacutemedicalandsurgicalcrisis ofthepatients
* Planthepatientcareinemergency,includingtheawareness ofsupportservices available Knowingwhentoactivatethem.
* Expressexperienceintheethicalprinciples andpracticalmanagementofend-of-lifecare
* Applyappropriateconsultations whereverrequired.
* Choose asepsisinallsuchcasesrequiringaninjectionorhavingacontagiousdiseaseoroperative procedures
* Establishrapportwithall stakeholderstodecreasethestateofcrisis.
* Judgeandcoordinatethetransportofthepatientbyselectingthebestavailablemethod(s)inconjunction withmedicalcommandauthority/protocol.
* Justifyclearly andconciselydelivereducationalinformationtostaffinbothformalandinformalteaching settings.
* Do researchesonemergencytechnology
* Predictandbeexposedtoandgainunderstandingofadministrativeissuesincriticalcareservices.

### FRAMEWORKFORBSEMERGENCYTECHNOLOGY

**(4YEARPROGRAMME)**

* Totalnumbers ofCredithours 133 (HEC recommended:124-136)
* Duration 4years
* Semesterduration 16-18weeks
* Semesters 8
* CourseLoadperSemester 15-18Credithours
* Numberofcourses persemester 4-6

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Compulsory Requirements(the studenthasnochoice)** | | **GeneralCoursesto bechosen fromotherdepartments** | | **DisciplineFoundation Courses** | | **DisciplineSpecific Courses** | |
| **07courses** | | **09courses** | | **09courses** | | **18course** | |
| **Subject** | **Cr.**  **Hr** | **Subject** | **Cr.**  **Hr** | **Subject** | **Cr.**  **Hr** | **Subject** | **Cr.**  **Hr** |
| 1. EnglishI 2. EnglishII 3. Pakistan Studies 4. IslamicStudies 5. Computer Skills 6. Behavioral Sciences 7. Communicatio nSkills. 8. Bioethics | 2+0  2+0  2+0  2+0  1+1  2+0  2+0  2+0 | 1.Epidemiology  2.Pharmacology-I 3.Pharmacology-II 4.ResearchMethodology   1. Fundamental 0f Infections. 2. DiagnosticImaging. 7.Heamatology-I 8.Biostatistics 9.ResearchProject | 1+1  2+1  2+1  2+1  2+1  1+1  2+1  2+1  6+0 | 1. HumanPhysiology-I 2. HumanPhysiology-II 3. MEDICAL BIOCHEMISTRY-I 4. MEDICAL BIOCHEMISTRY-II 5. HumanAnatomy-I 6. HumanAnatomy-II. 7. Medical Microbiology-I 8. Medical Microbiology-II 9. Pathology-I 10. Pathology-II | 3+1  3+1  3+1  3+1  3+1  3+1  2+1  2+1  2+1  2+1 | 1TraumaEmergency-I  2.TraumaEmergency-II 3.SurgicalEmergency-I  4.SurgicalEmergency-II 5.MedicalEmergencyI 6.MedicalEmergencyII 7.NeurologicEmergency 8.Burns&Toxicology 9.Cardiovascular Emergency.   1. DisasterManagement 2. Fundamental of | 2+1  2+1  2+1  2+1  2+1  2+1  2+1  2+1  2+1  1+1  1+1 |
| Emergencycare |  |
| 12.Obstetrical critical | 2+1 |
| care-I |  |
| 13.Neonatal &Pediatric | 2+1 |
| criticalcare |  |
| 14.Ambulanceoperation | 2+1 |
| andmanagement |  |
| 15.Obstetrical critical | 2+1 |
| care-II |  |
| 16.Basic&AdvanceLife Support | 2+1 |
| 17.Anesthesiaequipment | 2+1 |
| 18. CriticalCare LaboratoryDiagnostics | 2+1 |
|  | **16** |  | **28** |  | **36** |  | **52** |
| 5 | | | | | | | |

### SCHEMEOF STUDYFOR“BSEMERGENCY CARE TECHNOLOGY”4-YEARS

|  |  |  |  |
| --- | --- | --- | --- |
| **Semester/Year** | **NameofSubject** | **CODE** | **Credit hours** |
| **First** | MEDICAL BIOCHEMISTRY-I | PMS-601 | 4(3+1) |
|  | HUMANPHYSIOLOGY-I | PMS-602 | 4(3+1) |
|  | HUMANANATOMY-I | PMS-603 | 4(3+1) |
|  | ENGLISH-I | PMS-604 | 2(2+0) |
|  | PAKSTUDIES | PMS-605 | 2(2+0) |
|  | COMPUTERSKILLS | PMS-606 | 2(1+1) |
|  |  |  | **18** |
|  |  |  |  |
| **Second** | MEDICAL BIOCHEMISTRY-II | PMS-607 | 4(3+1) |
|  | HUMANPHYSIOLOGY-II | PMS-608 | 4(3+1) |
|  | HUMANANATOMY-II | PMS-609 | 4(3+1) |
|  | ENGLISH-II | PMS-610 | 2(2+0) |
|  | ISLAMICSTUDIES | PMS-611 | 2(2+0) |
|  |  |  | **16** |
|  |  |  |  |
| **Third** |  |  |  |
|  | PATHOLOGY-I | PMS-612 | 3(2+1) |
|  | MEDICALMICROBIOLOGY-I | PMS-613 | 3(2+1) |
|  | PHARMACOLOGY-I | PMS-614 | 3(2+1) |
|  | COMMUNICATIONSKILLS | PMS-615 | 2(1+1) |
|  | MEDICALEMERGENCY-I | ECT-601 | 3(2+1) |
|  | HEAMATOLOGY-I | MLT-601 | 3(2+1) |
|  |  |  | **17** |
|  |  |  |  |
| **Fourth** | PHARMACOLOGY-II | PMS-616 | 3(2+1) |
|  | PATHOLOGY-II | PMS-617 | 3(2+1) |
|  | MEDICALMICROBIOLOGY-II | PMS-618 | 3(2+1) |
|  | BEHAVIOURALSCIENCES | PMS-619 | 2(2+0) |
|  | MEDICALEMERGENCY-II | ECT-602 | 3(2+1) |
|  | DIAGNOSTIC IMAGING | RAD-610 | 2(1+1) |
|  |  |  | **16** |
|  |  |  |  |
| **Fifth** | TRAUMA EMERGENCY–I | ECT-603 | 3(2+1) |
|  | SURGICALEMERGENCY–I | ECT-604 | 3(2+1) |
|  | BURNS&TOXICOLOGY | ECT-605 | 3(2+1) |
|  | BASICANDADVANCELIFESUPPORT | ECT-606 | 3(2+1) |
|  | CRITICALCARELABORATORY  DIAGNOSTICS | ICT-604 | 3(2+1) |
|  | ANESTHESIA EQUIPMENTS | ANE-606 | 3(2+1) |
|  |  |  | **18** |
|  |  |  |  |
| **Sixth** | TRAUMA EMERGENCY-II | ECT-607 | 3(2+1) |
|  | SURGICALEMERGENCY-II | ECT-608 | 3(2+1) |
|  | NEONATAL ANDPEDIATRIC CRITICAL  CARE | ECT-609 | 3(2+1) |
|  | CARDIOVASCULAREMERGENCY | ECT-610 | 3(2+1) |
|  | NEUROLOGICEMERGENCY | ECT-611 | 3(2+1) |
|  | FUNDAMENTALOF EMERGENCYCARE | ECT-612 | 2(1+1) |
|  |  |  | **17** |
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| --- | --- | --- | --- |
| **Seventh** | OBSTETRICALCRITICALCARE-I | ECT-613 | 3(2+1) |
|  | DISASTERMANAGEMENT | ECT-614 | 2(1+1) |
|  | RESEARCHMETHODOLOGY | PMS-621 | 3(2+1) |
|  | BIOSTATISTICS | PMS-622 | 3(2+1) |
|  | EPIDEMIOLOGY | PMS-623 | 2(1+1) |
|  | FUNDAMENTAL OF INFECTION  CONTROL | PMS-624 | 3(2+1) |
|  |  |  | **16** |
|  |  |  |  |
| **Eight** | OBSTETRICAL CRITICALCARE–II | ECT-615 | 3(2+1) |
|  | AMBULANCE OPERATION AND  MANAGEMENT | ECT-616 | 3(2+1) |
|  | BIOETHIC | PMS-625 | 2(2+0) |
|  | REASEARCHPROJECT | PMS-626 | 6(0+6) |
|  | SEMINAR | PMS-627 | 1(1+0) |
|  |  |  | **15** |
|  | **TOTALCREDITHOURS** |  | **133** |

**Totalcredithours=133 HECrecommendation=124-136**

**LIST OF GENERALCOURSES**

**(15 Courses)**

1. Epidemiology
2. General.Pharmacology-I
3. MedicalMicrobiology-I
4. GeneralPathology-I
5. MedicalMicrobiology-II
6. GeneralPharmacology-II
7. GeneralPathology-II
8. ResearchMethodology
9. FundamentalofInfections.
10. DiagnosticImaging.
11. BehavioralSciences
12. CommunicationSkills.
13. Hematology-I
14. Biostatistics
15. ResearchProject

**DisciplineSpecificCourses**

**(18 Courses)**

1. TraumaEmergency-I
2. TraumaEmergency-II
3. SurgicalEmergency-I
4. SurgicalEmergency-II
5. MedicalEmergency-I
6. MedicalEmergency-II
7. NeurologicEmergency
8. Burns &Toxicology
9. CardiovascularEmergency.
10. DisasterManagement
11. Fundamentalofemergencycare
12. ObstetricalCriticalCare-I
13. Neonatal&PediatricCriticalCare
14. Ambulanceoperationandmanagement
15. ObstetricalCriticalCare-II
16. Basic&Advance LifeSupport.
17. Anesthesia Equipment
18. CriticalCareLaboratoryDiagnostics

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# 1stSEMESTERCOURSES

* 1. **MEDICAL BIOCHEMISTRY-I**
  2. **Human Physiology-I**
  3. **HumanAnatomy-I**
  4. **English-I**
  5. **PakStudies**
  6. **Computerskills**

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## PMS-601 MEDICAL BIOCHEMISTRY-I CreditHours:4(3+1)

### Courseobjectives:

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

* Describe the chemical composition, biochemical role, digestion and absorption of macro and micro molecules of the cell.
* Discuss different biochemical reactions in cell
* Explain mechanism of action of hormones

**Coursecontents:**

Acids,bases,pHandbuffers,Biochemicalcompositionandfunctionsofthecellmembrane,Transportacross

thecellmembrane,Carbohydrates:Introduction,structure,function, digestionandabsorption,Aminoacids and proteins:Introduction,structure,function,digestionandabsorption,Lipids:Introduction,structure,function, digestionandabsorption, Vitaminsandminerals,Fluid,electrolyteandacidbasebalance,Cellsignalingand hormoneaction,Bodysecretions:Compositionandfunctionofsaliva,gastricacid(HCL),pancreaticjuice,bile, hormones andGIfunctions

### Practicals:

1. Bloodsamplecollectionforbiochemicalanalysis
2. PreparationandcalculationofSolutions
3. Principles ofBiochemistryanalyzers(spectrophotometer,flamephotometer)
4. DeterminationofCholesterol,Tg,HDL,LDL,sugar,calciumandphosphorus inblood

### Recommended Books

* + Harper’sBiochemistryRobertK.Murray,DarylK.Granner28thedition2009
  + BiochemistrybyDr.U.Satyanarayana,UChakrapani
  + LehningerPrinciples ofBiochemistry,6E
  + Marks’Essentials ofMedicalBiochemistryAClinicalApproach,SecondEdition

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## PMS -602 HumanPhysiology-I CreditHours:4(3+1)CourseObjectives:

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

* Describe the basic concepts of physiology beginning from the cell organization to organ system function.
* Discuss the organization of cell, tissue, organ and system with respect to their functions.
* Explain the physiology of Respiration, G.I.T, Urinary system and Endocrine system

## Coursecontents:

Functionalorganizationofhumanbody,MechanismofHomeostasis,Cellstructureanditsfunction,functionof differentTissue,Functionsoftheskin,,Typesandfunctionofmuscle,Neuromuscularjunction,functionsof theendocrineglands,BreathingMechanism,ExchangeofrespiratoryGaseous,Transportofrespiratorygases, FunctionofdifferentpartofDigestivesystem,Functionofliverandpancreas,DigestionandAbsorptionin Gastrointestinaltract,PathoPhysiologyofGastrointestinalDisorders,FormationofUrineby theKidney, Glomerularfiltration,RenalandassociatedmechanismforcontrollingECF,RegulationofAcid-BaseBalance, MaleReproductiveSystem(Male),Prostategland,Spermatogenesis,FemaleReproductiveSystem,Menstrual CycleandPregnancyandparturition,MammaryGlands andLactationandFertilityControl

## Practical:

* + - Introductiontomicroscope
    - Bleedingtime
    - Clottingtime
    - WBCs count
    - RBCs count
    - Plateletscount
    - Reticulocytescount

## Recommendedbooks:

* + - Essentials ofMedicalPhysiologyKSembulingam,PremaSembulingamSixth Edition2013
    - ConcisePhysiologyDr.RajaShahzad1stEdition2012
    - GuytonAndHallTextbookOfMedicalPhysiology JohnE.Hall,ArthurC.GuytonProfessorandChair 2006
    - Ross andWilsonAnatomyandPhysiologyinHealthAndIllness 11thEditionAnneWaugh,Allison Grant2010

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## PMS -603 HumanAnatomy-I CreditHours:4(3+1)

**CourseObjectives:**

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

* Identify the principle structures of tissues, organs and systems
* Discuss the different concepts and terms of general anatomy including skeleton and Musculo skeletal system.
* Explain the anatomy of Thorax, Abdomen and pelvis

## Coursecontents:

Musculoskeletalsystem(AxialandAppendicular),AxialSkeleton,Differentbonesofhumanbody,Axialand AppendicularSkeleton,Classificationonthebasisofdevelopment,regionandfunction,Generalconceptof ossificationofbones,partsyoungbone,Bloodsupplyoflongbones.JointsStructuralRegionalandfunctional classificationofjoints,Characteristicsofsynovial joints,Classificationofsynovial joints,Movementsof synovialjoints.MuscularSystemPartsofmuscle,Classification ofmuscles(skeletal,Cardiac,smooth) **Thoracicwall**:Musclesofthorax,SurfaceAnatomy,Trachea,lungs,pleura,mammary glands(breast), **Thoraciccavity**:Mediastinum,Lungs,bronchi,bloodsupplyandlymphatic,Heartandthoracicvessels **Abdominalwall**:Skin,nerveandbloodsupply,Musclesofanteriorabdominalwall.**Abdominalcavity**: GeneralArrangementoftheAbdominalViscera,Peritoneum,Omenta,mesenteries,Stomach,blood,nerve, lymphaticsupply,Smallintestine,blood,nervousandlymphaticsupply,Largeintestine:bloodnerveand lymphaticsupply.**Thepelvicwall**:Anterior,posteriorwall,diaphragm.**Pelviccavity**:Ureters,urinarybladder Malegenitalorgans,Femalegenitalorgans,Musclesofpelvicregion,bloodsupply,nervesupply, **Special Senses**.

## Practical:

* + - StudyAxial,Appendicularskeletonandmusculoskeletalsystemonhumanskeletalmodels.
    - StudyandunderstandinganatomyofThorax,AbdomenandPelvis through:
    - Human Models
    - Videodemonstrations.

## Recommendedbooks:

* + - Ross andWilsonAnatomyandPhysiologyinhealthandillness 11thEditionWaughGrant.
    - ClinicalAnatomy(Byregions)9thedition,RichardS.Snell

### Referencebooks

* + - NetterAtlas ofhumananatomy5thEditionSaunders.
    - Gray’s Anatomyforstudents 2ndEditionDrakeVogalMitcell.

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## PMS -604 English–I CreditHours:2(2+0)

**CourseObjective:**

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

* Compose a well-constructed essay that develops a clearly defined claim of interpretation which is supported by close textual reading.
* Utilize literary terminology, critical methods, and various lenses of interpretation in their writing.
* Apply the rules of English grammar.
* Adhere to the formatting and documenting conventions of our discipline

## Coursecontents:

VocabularyBuildingSkills:Antonyms,Synonyms,Homonyms,One wordSubstitute,Prefixes and suffixes, Idioms andphrasalverbs,Logicalconnectors,Checkspellings,PracticalGrammar&WritingSkill:Partsof Speech,Tenses,Paragraphwriting:Practiceinwritingagood,unifiedandcoherentparagraph,Préciswriting andcomprehension,Translation skills:UrdutoEnglish,Readingskills:Skimmingandscanning,intensiveand extensive,andspeedreading,summaryandcomprehensionParagraphs,Presentation skills:Developing,Oral Presentation skill,Personalitydevelopment(emphasisoncontent,styleandpronunciation)

## Recommendedbooks:

* PracticalEnglishGrammarbyA.J.ThomsonandA.V.Martinet.Exercises 2.Thirdedition.Oxford UniversityPress 1986.ISBN0194313506.
* Reading.Advanced.BrianTomlinsonandRodEllis.OxfordSupplementarySkills.ThirdImpression 1991.ISBN0194534030.

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**PMS -605 PakistanStudies(Compulsory) CreditHours: 2(2+0)**

## CourseObjectives:

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

* Develop vision of Historical Perspective, Government, Politics, Contemporary Pakistan, ideological background of Pakistan.
* Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.
* Inculcate patriotism in the hearts of students so that they may become a good citizen.

## Coursecontents:

HistoricalPerspective:IdeologicalrationalewithspecialreferencetoSirSyedAhmedKhan,AllamaMuhammadIqbalandQuaid-i-AzamMuhammadAli Jinnah,FactorsleadingtoMuslimseparatism,Peopleand Land,IndusCivilization,Muslimadvent,LocationandGeo-Physicalfeatures.GovernmentandPoliticsin Pakistan,Politicalandconstitutionalphases:1947-58,1958-71,1971-77,1977-88,1988-99,1999onward ContemporaryPakistan:Economicinstitutionsandissues,Societyandsocialstructure,Ethnicity,Foreign policyofPakistanandchallenges,FuturisticoutlookofPakistan.

## Recommendedbooks:

* Akbar,S.Zaidi.*IssueinPakistan’s Economy.*Karachi:OxfordUniversityPress,2000.
* Mehmood,Safdar.*PakistanKayyunToota,*Lahore:Idara-e-Saqafat-e-Islamia,ClubRoad,nd.
* Amin,Tahir.*Ethno-NationalMovementinPakistan,*Islamabad:InstituteofPolicyStudies,Islamabad.
* Afzal,M.Rafique.*PoliticalParties inPakistan,*Vol.I,II&III.Islamabad:NationalInstituteof HistoricalandculturalResearch,1998.

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## PMS -606 ComputerSkills CreditCourse:2(1+1)

**Courseobjectives:**

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

* Use technology ethically, safely, securely, and legally.
* Identify and analyze computer hardware, software, and network components.
* Design basic business web pages using current HTML/CSS coding standards.
* Install, configure, and remove software and hardware

## Coursecontents:

IntroductiontoComputerandWindowXP/7; MSOffice2007(Word,Excel,PowerPoint);Internetaccess

anddifferentdatabases availableontheinternet;Email.

## Recommendedbooks:

* Computerscienceby MuhammadAshraf,edition1st2010

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# 2ndSEMERTERCOURSES

1. **Biochemistry-II**
2. **Human Physiology-II**
3. **Human Anatomy-II**
4. **English-II**
5. **IslamicStudies**

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**PMS - 607 Biochemistry-II CreditHours:4(3+1)**

**Courseobjective:**

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

* Describe the synthesis of proteins, lipids, nucleic acids, carbohydrates and their role in metabolic pathways along with their regulation
* Discuss the clinical role of enzymes in human being.
* Interpret and apply nutritional concepts to evaluate and improve the nutritional health of individuals with medical conditions.

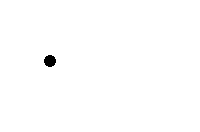
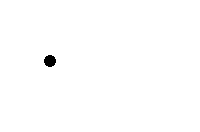
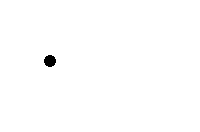
### Content:

Carbohydratesmetabolism(Glycolysis, Glycogenolysis, Gluconeogenesis, Glycogenesis,

Pentosephosphatepathway,Fermentationandethanolmetabolism,Krebs cycle,ETC,Cori cycle, Glucosealaninecycle),Proteinandaminoacidsmetabolism(synthesis anddegradationof aminoacids,Lipidmetabolism(Betaoxidation,Cholesterolmetabolism),Nucleotide metabolism(Purineandpyrimidinedegradation,uricacidformation),Nutrition(Majorfood groups,Balanceddiet,Metabolicchangesin starvation,Proteinenergymalnutrition, Obesity,kwashiorkor, Marasmus),Clinicaldiagnosticenzymology:clinicalsignificanceofALT, AST,ALP,GGT,LDHandisoenzymes,CKandisoenzymes,Pancreaticlipaseandamylase, cholinesterase,G6PD, ACP,cardiactroponins,ANP,BNPandpro-BNP)

### Practical:

Determinationofliver,cardiac,pancreaticenzymes Determinationofureaanduricacid



DemonstrationofELISA,CMIAandCLIAinstrument

### Books:

BiochemistrybyDr.U.Satyanarayana,UChakrapani

Marks’Essentials ofMedicalBiochemistryAClinicalApproach,SecondEdition

Harper’s IllustratedBiochemistrya LANGEmedicalbooktwenty-sixthedition LehningerPrinciples ofBiochemistry,6E

McGrawHill’sManualof laboratoryanddiagnostictests byDENISED.WILSON,PHD,APN, FNP,ANP

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**PMS -608 HumanPhysiology-II CreditHours:4(3+1)**

**CourseObjectives:**

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

* Demonstrate a systematic and coherent knowledge of the physiological functioning of the central nervous system, special senses (CNS & SS), cardiovascular system and respiratory system.
* Describe the formation of the formed element components of blood.
* Identify the components and function of the lymphatic system and discuss the role of the innate immune response against pathogens

## Coursecontents:

PhysiologyofNervous System,Functionofvarious cranialnerves,Functions ofsomaticmotornervous system Functions oftheautonomicnervous system,functionofneurons,neuroglialcells andtheircomponents.Resting membrane potentialandanactionpotential,functionofasynapseandreflexarc,functions ofthespecialized senseorgans:Eye,physiologyofsite,accommodation, opticnerveandopticchiasma,Ear,functions ofthe internal,middleandexternalearPhysiologyofthehearingandbalance,Smell, physiologyofolfactorynerve. Taste,physiologyoftasteLocationofthetastebuds Physiologyofspeech,Blood:Compositionandfunctionof Blood,haematopoisis,Bloodgrouping,Coagulationmechanism,PhysiologyofCardiovascularsystemThe PhysiologyofPulmonarySystemicCirculation:Arteries Veins LocalControlofBloodVessels Nervous ControlofBloodVessels Regulationof ArterialPressure,ThefunctionofLymphaticSystem,tonsils,lymph nodes,thespleenandthethymus,ClassificationandphysiologyofImmunesystem,Antigens andAntibodies, Primaryandsecondaryresponses toanantigenAntibody-mediatedimmunityandcell-mediatedimmunityRole oflymphocyteinimmunityregulation.

## Practical:

1.Spirometry

1. Electrocardiography
2. BloodPressureMeasurement
3. NormalandabnormalECGinterpretation
4. Pulse ratemeasurement
5. Heartsounds

## Recommendedbooks

* + Essentials ofMedicalPhysiologyKSembulingam,PremaSembulingamSixthEdition2013
  + GuytonAndHallTextbookOfMedicalPhysiology JohnE.Hall,ArthurC.GuytonProfessorandChair 2006
  + Ross andWilsonAnatomyandPhysiologyinHealthAndIllness 11thEditionAnneWaugh,Allison Grant2010

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## PMS -609 HumanAnatomy-II CreditHours:4(3+1)

**CourseObjectives:**

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

* Identify bones of the upper limb and bony landmarks that articulate at each joint with all muscular compartments of the upper limb.
* Discuss bones of the lower limb and bony landmarks that articulate at each joint with all muscular compartments of the lower limb and identify these structures on radiographic images.
* Describe the topographical and functional anatomy of the head and neck, in particular the arrangement, relations and structure of the major skeletal, muscular and neurovascular components of the head and neck

## Coursecontents:

**Theupperlimb**Bones ofshouldergirdleandArm,Muscles,Axilla,Brachialplexus,Cubitalfossa,the forearm,handbones,muscles,Blood supply,Nervesupply,lymphatics,**Thelowerlimb**Fascia,Bones, Muscles,Femoraltriangle,Bloodsupply,Nervesupply,Lymphaticsupply.**Headandneck** Skull,Mandible, Cranialnerves,cranialcavity,Meninges,Brain,Orbit,Neck,EndocrineSystemClassificationofendocrine glands,Pituitaryglands,ThyroidGlands,Adrenalglandanddifferencesbetweenthecortexandmedulla.

## Practical:

StudyandunderstandtheanatomyofUpperlimb,Lowerlimb,HeadandNeckthrough:

1. Human Models
2. Videodemonstration
3. Studyradiographs ofupperandlowerlimb.

## Recommendedbooks:

**Essentialbooks**(textbooks)

* + Ross andWilsonAnatomyandPhysiologyinhealthandillness 11thEditionWaughGrant.
  + ClinicalAnatomy(Byregions)9thedition,RichardS.Snell.

### Referencebooks

* + NetterAtlas ofhumananatomy5thEditionSaunders.
  + Gray’s Anatomyforstudents 2ndEditionDrakeVogalMitcell.
  + BD.ChurasiaHumanAnatomy(Allregions)

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## PMS -610 English–II CreditHours:2(2+0)

**CourseObjectives:**

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

* Develop writing, reading and listening skills.
* Demonstrate integrative and independent thinking, originality, imagination, experimentation, problem solving, or risk taking in thought, expression, or intellectual engagement.
* Participate in discussions by listening to others' perspectives, asking productive questions, and articulating original ideas.

## Coursecontents:

WritingSkill:CVandjobapplication,TechnicalReportwriting,Writingstyles,Changingnarration: Convertingadialogueintoareport,Convertingastoryintoanewsreport,Convertingagraphorpictureintoa shortreportorstory,ActiveandPassivevoice,Letter/memowritingandminutes ofthemeeting,useoflibrary andinternetrecourses,Essaywriting,Phrases-Types andfunctions,Clauses-Types andfunctions, Punctuation:Tenses-Types,Structure,Function,Conversionintonegativeandinterrogative.SpeakingSkill: GroupDiscussion(Varioustopics givenbytheteacher),Presentationbythestudents (individually),RolePlay ActivitiesforimprovingSpeaking.ListeningSkill:ListeningVarious Documentaries,Movies,andonline listeningactivities toimprovethelisteningas wellas pronunciationofthewords.

## Recommendedbooks:

* + PracticalEnglishGrammarbyA.J.ThomsonandA.V.Martinet.Exercises 2.Thirdedition.Oxford UniversityPress 1986.ISBN0194313506.
  + PracticalEnglishGrammarbyA.J.ThomsonandA.V.Martinet.Exercises 1.Thirdedition.Oxford UniversityPress.1997.ISBN0194313492.
  + PracticalEnglishGrammarbyA.J.ThomsonandA.V.Martinet.Exercises 2.Thirdedition.Oxford UniversityPress.1997.ISBN0194313506
  + Intermediateby Marie-ChristineBoutin,SuzanneBrinandandFrancoiseGrellet.OxfordSupplementary Skills.FourthImpression1993.ISBN0194354057Pages 20-27and35-41.
  + Reading.UpperIntermediate.BrainTomlinsonandRodEllis.OxfordSupplementarySkills.Third Impression1992.ISBN0194534022

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**PMS -611 IslamicStudies CreditHours:2(2+0)**

## CourseObjectives:

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

* Recognize basic concept of Islam (faith, pillars and systems etc.) and express their impact on society.
* Present Islam as complete code of life and demonstrate understanding of Islamic Ethics.
* Demonstrate the role of a medical professional in Islam.

## Coursecontents:

Fundamentalbeliefs ofIslam,BeliefofTawheed,BeliefinProphethood,BeliefintheDayofJudgment, Worships,Salaat/Prayer,Zakat/ObligatoryCharity,Saum/Fasting,Hajj/Pilgrimage,Jihad,Importanceof Paramedics InIslam,Ethics,ReligionandEthics, HigherIntents /Objectives ofIslamicShariaandHuman Health,ImportanceandVirtues ofMedicalProfession,ContributionandAchievements ofMuslimDoctors, KnowledgeoftheRights,WisdomandPrudence,Sympathy/Empathy,Responsible Life,Patience, Humbleness,SelfRespect,Forgiveness,Kindhearted,Beneficence,SelfConfidence,ObservingPromise, Equality,RelationamongtheDoctors,Jealousy,Backbiting,Envy,EtiquettesofGathering,Relationbetweena Doctor andaPatient,GentleSpeaking,MercyandAffection,ConsolingthePatient,Toinquirethehealthof Patient,CharacterbuildingofthePatient,Responsibilities ofaDoctor,

## Recommendedbooks:

* + Islamiyat(Compulsory)forKhyberMedicalUniversity,MedicalColleges andAlliedInstitutes

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3rdSEMERTERCOURSES:

# Pathology-I

1. **Medical Microbiology-I**
2. **Pharmacology-I**
3. **Communication Skills**
4. **MedicalEmergency-I**
5. **Hematology-I**

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## PMS -612 Pathology-I CreditHours:3(2+1)

**CourseObjectives:**

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

* Specifythe abnormalities of cell growth and differentiation.
* Describe cellular responses to stress and noxious stimuli and inflammation.
* Discuss cell injury, cell death and mechanisms involved in wound healing.
* Explain the hemodynamic disorders and neoplasia.

## CourseContents:

**CellInjury&adaptation**Cellinjury,Cellularadaptation

**Inflammation**Acute Inflammation,Chronic Inflammation

**CellRepair&WoundHealing**Regeneration&Repair,HealingFactors affectingHealing

**HemodynamicDisorders**Define&classifytheterms,Edema,Hemorrhage,Thrombosis,Embolism,Infarction

&Hyperemia,Shock,compensatorymechanismofshock,possibleconsequences ofthrombosis&difference betweenarterial&venous emboli

**Neoplasia**Dysplasia&NeoplasiaDifferencebetweenbenign&malignantneoplasm,etiologicalfactors for Neoplasia,differentmodes ofmetastasis

## Practicals

1. PracticalCopyforGeneralPathology
2. SpecificHistopathologicalSlides

## Recommendedbooks

* + Robbins andCotranPathologicBasis ofDisease,ProfessionalEdition,8thEdition

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## PMS-613 Medical Microbiology-I CreditHours:3(2+1)

**Courseobjectives:**

* + Tointroducethestudentswithbasicconceptsinbacteriologyandmycology.
  + Tointroducethestudents withcommonbacterialandfungalinfections.
  + Tointroducethestudents withdiagnosis ofcommonbacterialandfungalinfections.

## Coursecontents:

Historicalreviewandscopeofmicrobiology,sterilization, disinfectionandantisepsis,structureandfunctionof prokaryoticcell, differencebetweenprokaryoticandeukaryoticcell,bacterialgrowthandmetabolism,bacterial classification,normalmicrobialfloraofhumanbody,mechanismof bacterialpathogenesis,hostparasite interaction,Immune responsetoinfection,commonbacterialpathogenprevailinginPakistan,introductionto fungi,fungalcharacteristic,morphology,structure,replicationandclassification,mechanismoffungal pathogenesis,commonfungalpathogenprevailinginPakistan.

## Practical:

1. IntroductionanddemonstrationofLaboratoryEquipments usedinMicrobiology.
2. Inoculationandisolationofpurebacterialcultureandits antibioticsusceptibilitytesting.
3. Demonstrationofdifferenttypes ofphysicalandchemicalmethods ofsterilization,anddisinfection.
4. Students shouldbethoroughtoworkwithcompoundmicroscope.
5. Detectionofmotility:Hangingdropexaminations withmotilebacteria,non-motilebacteria.
6. Simplestainingmethods ofpurecultureandmixedculture.
7. Gram’s stainingofpurecultureandmixedculture.
8. AFB stainingofNormalsmear,AFB positivesmear.
9. KOHpreparationforfungalhyphae.
10. Germtubetestforyeastidentification.
11. Gramstainforcandida.

## Recommendedbooks:

* + Sherris MedicalMicrobiology:AnIntroductiontoInfectious Diseases.Ryan,K.J.,Ray,C.G.,4thed.

McGraw-Hill,2003.

* + ClinicalMicrobiology MadeRidiculouslySimple. Gladwin,M.,&Trattler,B.,3rded.MedMaster, 2004.
  + MedicalMicrobiologyandInfectionataGlance. Gillespie,S.,H.,Bamford,K.,B.,4thed. Wiley- Blackwell,2012.
  + MedicalMicrobiology,Kayser,F.,H.,&Bienz,K.,A.,Thieme,2005.
  + ReviewofMedicalMicrobiologyandImmunology.Levinson,W.,10thed.McGrawHillProfessional, 2008.
  + Jawetz,Melnick,&Adelberg'sMedicalMicrobiology.Brooks,G.,Carroll,K.,C.,Butel,J.,& Morse, S.,26thed.McGraw-Hill Medical,2012.

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## PMS -614 Pharmacology-I CreditHours:3(2+1)

**CourseObjectives**

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

* Describe common terms related to pharmacology and drug therapy.
* Identify a range of drugs used in medicine and discuss their mechanisms of action.
* Report the clinical applications, side effects and toxicities of drugs used in medicine.

## Coursecontents:

IntroductiontoPharmacology,Pharmacokinetics,Pharmacodynamics,Adverseeffectsofdrugs,Classification

ofdrugs,DrugsaffectingtheAutonomicNervousSystem,NSAID,Opioids,DrugsAffectingEndocrine system(Corticosteroids,ThyroidandAntiThyroid),GastrointestinalDrugs(PPI,H2blockersandAntacids), Anti-Histamines,Anesthetics(Generalandlocalanesthetics),

Practical:

1. Introductiontodrugdosageform
2. Studyoftheactionofdrugs (Atropine)onthe rabbit's eye

## Recommendedbooks:

* + Lippincott’s pharmacology(textbook)byMycek2ndeditionpublishedbyLippincottRaven
  + Katzungtextbookofpharmacology(ReferenceBook)byBertramKatzung8thEdition,Publishedby Appleton

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## PMS-615 CommunicationSkills Credithours:2(1+1)

**CourseObjectives:**

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

* Communicate effectively both verbally and non-verbally
* Apply the requisite academic communication skills in their essay writing and other forms of academic writing
* Use various computer-mediated communication platforms in their academic and professional work
* Relate the interpersonal and organizational dynamics that affect effective communication in organizations.

## CourseContents:

1. **IntroductiontoCommunication,** MeaninganddefinitionofCommunication,Theprocessof communication,Models ofcommunication
2. **EffectiveCommunications inBusiness,**ImportanceandBenefits ofeffectivecommunication,Components ofCommunication,Communicationbarriers,Nonverbalcommunication

### Principles of effectivecommunication,SevenCs.

1. **Communicationforacademicpurposes,**Introductiontoacademicwriting,Summarizing,paraphrasingand argumentation skills,Textualcohesion
2. **CommunicationinOrganizations,**Formalcommunicationnetworks inorganizations,Informal communicationnetworks; Computer-mediatedcommunication(videoconferencing,internet,e-mail,skype, groupware,etc)
3. **BusinessWriting,**Memos,Letters,Reports ,Proposals ,Circulars,etc
4. **PublicSpeakingandPresentationskills,**Effectivepublicpresentation skills,Audienceanalysis,Effective argumentation skills,Interviewskills

## Recommendedbooks:

* + InterpersonalCommunicationPaperbackbyKoryFloyd
  + ReadingintoWriting1:EnglishforAcademic Purposes:AHandbook-WorkbookforCollegeFreshman English(Mass MarketPaperback)byConcepcionD.Dadufalza
  + LectureNotes/Presentations

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## ECT-601 MedicalEmergency-I CreditHours:3(2+1)

**CourseObjectives:**

* + Toequipthestudentwithprofessionalknowledge,skill,techniques &ethicalvalues toenablethemto applytheiracquiredexpertiseinmedicalemergency.
  + Studentwillbeabletoprovidepatientcareinmedicalemergency,includingtheawareness ofsupport services availableandknowingwhentoactivatethem.
  + Todeliver efficientandcompetentcaretoacutelyillpatientinmedicalemergency.

## Coursecontents:

**Respiratoryemergencies**:Asthma&statusasthmaticus,COPD,Pneumonia,Apnea,ManagementofTypeI

&II RespiratoryFailure, Management ofUpper &Lower Respiratorytract Infections, ARDS, Pulmonary

Embolism,PulmonaryEdema.

**Gastrointestinal Emergencies:** Acute AbdomenPain, Gastroenteritis, Cholera, Dysentery, Enteric Fever,

Malaria,Dengue,LiverFailure,Measles

**Dermatologicalemergencies**:Urticaria&Angioedema,Herpes zoster,Erythroderma.

**Shock** Assessmentandmanagementofhypovolemic,septic,Anaphylactic,NeurogenicandCardiogenicshock.

**AcutePainManagement.**Earache,toothache, generalbodypain.

## Practical:

1. Recognizeamedicalemergency,assessthesituation,obtainabasichistoryandphysicalexamination, manageemergencycare,and,ifneeded,extricatethepatient.
2. BloodPressureRecording
3. PeripheralVenous Access
4. CentralVenous Access
5. CardiopulmonaryResuscitation
6. ECGtaking andmonitoring
7. PortableSuction
8. PortableVitalSigns Monitor
9. Patienttransfertrolleys

## Recommendedbooks:-

* + EMERGENCYMedicinemanual.John.2005
  + Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
  + Oxfordbookofemergencymedicine.
  + CriticalcarecaremedicineAtaGlance.RichardLeasch.
  + Oxfordhandbookofacutemedicines4thedition
  + Firstaidfor emergencyboard
  + CriticalcareEmergency Medicine.

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## MLT-601 Hematology-I CreditHours:3(2+1)

**CourseObjectives:**

Bytheendofthis semesterthestudentsofBStechnology3rdsemesterwillbeableto

* + - Discuss basicconceptsinHematologyandacquireskillinpracticalworktoproduce students steepedinknowledgeofHematology
    - Interpretthetestsresultofthebasichematologicalprocedures foraccuratediagnosis and patient’smonitoring

## Contents:

Introductiontohematology,physiologyofbloodandcomposition,Introductiontobonemarrow, structureandfunctionofbonemarrow,Bloodformationinthebody(Intra-uterineandextrauterine), factors governinghematopoiesis,Erythropoiesis,differentstages andfactor effectingon erythropoiesis,Granulopoiesis, differentstages andfactoreffectingongranulopoiesis,

Introductiontohemoglobin,structure,synthesis andfunctionofhemoglobin,completeblood count(CBC)anditsimportance,Morphologyofredbloodcells andwhitebloodcells andits importanceinvarious hematologicaldisorders,Introductiontoanemiaits classification, Introductiontohemolysis (physiologicalandpathological),IntroductiontoWBC disorders, introductiontoleukemia,etiology,pathogenesis andits classification,Leukocytosis,leukopenia, Neutrophilia,conditionrelatedtoneutrophilia,Eosinophilia,conditionrelatedtoeosinophilia, Monocytosis,conditionrelatedtomonocytosis,Lymphocytosis,conditionrelatedto lymphocytosis,Introductiontohemostasis,mechanismofhemostasis,functionofplatelets and coagulationfactors,Coagulationcascade,quantitativedisorderofplatelets,,qualitativedisorder ofplatelets.

## Practical:

* 1. Collectionofbloodsample
  2. Preparationandstainingofperipheralbloodsmear
  3. Totalleucocytecount, rbccount
  4. Determinationofabsolutevalues
  5. Differentialleucocytecount;platelets countandreticulocytes count
  6. Todeterminetheesr
  7. Determinebleedingtime;prothrombintime;activatedpartialthromboplastintime

## Books:

* + - EssentialofHematology,A.VHoffBrand,6thedition2006
    - Essentialofhematologyby JP
    - ClinicalHematology,G.C Degrunchi,5thedition2002
    - PracticalHematology,DacieJ.V.10thedition2012

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# 4thSEMERTERCOURSES:

1. **Pharmacology-II**
2. **Pathology-II**
3. **Medical Microbiology-II**
4. **BehavioralSciences**
5. **MedicalEmergency-II**
6. **DiagnosticImaging**

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## PMS –616 Pharmacology-II CreditHours:3(2+1)

### COURSE OBJECTIVES:

* + Toprovidequalitypatientcareinroutineas wellas advancedprocedures.
  + Tounderstandthemechanismofdrugactionatmolecularas wellas cellularlevel,bothdesirableand adverse.
  + Tounderstandtheprinciples ofpharmacokineticsi.e.drugabsorption, distribution,metabolismand excretionandbeabletoapplytheseprinciplesintherapeuticpractice.

## Coursecontents:

Drugsactingoncardiovascularsystem;Drugsforheartfailure,anti-hypertensivedrugs,antianginaldrugs, AntiHyperlipidemicdrugs,Blooddrugs(Anticoagulants), Diuretics, Chemotherapeutics drugs([Anti- protozol,Anti-Malarial],Anti-Fungal,Anthelmintic),Antibiotics(Penicillin’s,cephalosporin’s,macrolides, aminoglycosides,fluroquinolones),Drugs actingonRespiratorysystem.

## Practical:

1. Routesofdrugadministration
2. Dose-ResponseCurves
3. Affectofadrenalineonpulse rate
4. Affectofbetablockers onheartrateafterexercise
5. Sourceofdrugandidentificationofsome rawmaterials thataresourceofdrug
6. Weightconversions andmeasurements
7. PreparationSulfurointment
8. Preparationofpilocarpinedrops
9. Prescriptionwriting

## Recommendedbooks:

* + Lippincott’s pharmacology(textbook)byMycek2ndEditionpublishedbyLippincottRaven2000.
  + Katzungtextbookofpharmacology(ReferenceBook)byBertramKatzung8thEdition,Publishedby Appleton.dec2007.

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## PMS-617 Pathology-II CreditHours:3(2+1)

**CourseObjectives:**

* + - Tointroducestudents withdifferentenvironmentalhazards
    - Togainknowledgeofsomebasicsystemicdiseases

## Coursecontents:

Healtheffectsofclimatechange,toxicityofchemicalandphysicalagents,environmentalpollution,effectof tobacco, effectofalcohol,injurybytherapeuticdrugs anddrugs ofabuse,generalprinciples of microbial pathogenesis,specialtechniquesforidentifyinginfectious agents,agents ofbioterrorism,heartfailure, congenitalheartdiseases,ischemicheartdiseases,hypertensiveheartdiseases,arrhythmias,atelectasis,chronic obstructivepulmonarydisease,asthma,bronchiactasis,pneumonias,pneumothorax,hemothorax,nephrotic syndrome,renal stone,hydronephrosis,aphthous ulcer,gastritis,pepticulcer,hemorrhoid,jaundice,liver cirrhosis,viralhepatitis,cholecystitis,urinarytractinfections,arthritis,facialpalsy

## Practical:

1. Helicobacterpyloritest
2. DiagnosismethodsofUTI
3. Determinationofrenalfunctiontests
4. Determinationofliverfunctiontests
5. Determinationofcardiacprofile

## Recommendedbooks:

* + RobbinsBasicPathologyKumarAbbasAster9thEdition2013
  + ReviewofGeneralPathologyMoh.Firdaus,9thEdition
  + ShortTextbookofPathologyMoh.InamDanish3rdEdition2006

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**PMS- 618 MedicalMicrobiology-II Credit Hours: 3(2+1)**

## Courseobjectives:

* Tointroducethestudents withbasicconceptsinvirologyandparasitology.
* Tointroducethestudents withcommonviralandparasiticinfections.
* Tointroducethestudents withdiagnosis ofcommonviralandparasiticinfections.

## Coursecontents:

Biosafetylevels,controlofhospitalinfection,biomedicalwastemanagement,introductiontovirology, Viral morphology,structure,replicationandclassification,generalproperties ofvirus,pathogenesis andcontrolof virus,commonviralpathogenprevailinginPakistan,introductiontoparasitology,Parasite (protozoanand helminthes)morphologyand classification,generalprincipalofpathogenesis,immunologyanddiagnosis of parasiticinfection,commonparasiticpathogenprevailinginPakistan.

## Practical:

1. Cleaningofnewandusedglass waresformicrobiologicalpurposes.
2. Students shouldbefamiliartouseautoclave,hotairoven,waterbath,steameretc.
3. Macroscopicandmicroscopicexaminationofstoolforadultworms, ova,cysts,larvae.
4. Visittohospitalfordemonstrationofbiomedicalwastemanagement.
5. Demonstrationofcommon serologicaltests usedforthediagnosis ofviralandparasiticinfection.
6. Demonstrationofmalarialparasitesinbloodandbonemarrow.
7. Demonstrationofleishmaniainbloodfilm.
8. Concentrationtechniquesforintestinalparasitesin stool.

## Recommendedbooks:

* + Sherris MedicalMicrobiology:AnIntroductiontoInfectiousDiseases.Ryan,K.J.,Ray,C.G.,4thed.

McGraw-Hill,2003.

* + ClinicalMicrobiology MadeRidiculouslySimple. Gladwin,M.,&Trattler,B.,3rded.MedMaster, 2004.
  + MedicalMicrobiologyandInfectionataGlance. Gillespie,S.,H.,Bamford,K.,B.,4thed. Wiley- Blackwell,2012.
  + MedicalMicrobiology,Kayser,F.,H.,&Bienz,K.,A.,Thieme,2005.
  + ReviewofMedicalMicrobiologyandImmunology.Levinson,W.,10thed.McGrawHillProfessional, 2008.
  + Jawetz,Melnick,&Adelberg'sMedicalMicrobiology.Brooks,G.,Carroll,K.,C.,Butel,J.,& Morse, S.,26th ed.McGraw-HillMedical,2012.

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## PMS-619 BehavioralSciences CreditHours:2(2+0)

**CourseObjectives:**

* + ToConductthediagnosticinterviews
  + ToFormulatingandclarifyingdiagnosticfindingsandtreatmentrecommendations
  + Documentingevaluationandtreatmentprocedures,involvingduties suchasrecordingresults of diagnostic interviews,lab studies,and/ortreatmentplansinatimelywayaccordingtothe medicalrecords protocols ofthe rotationsite

## CourseContents:

IntroductiontoBehavioralSciences anditsimportanceinhealth: Bio-Psycho-Social ModelofHealthCareand theSystemsApproach,NormalityvsAbnormality,ImportanceofBehavioralsciencesinhealth,Desirable AttitudesinHealthProfessionals Understanding Behavior:Sensationand senseorgans,Perception,Attention andconcentration,Memory,Thinking,Communication,IndividualDifferences: Personality,Intelligence, Emotions,Motivation,Learning,Stress andStressors,Life Events,Stress,Management,Interviewing/ PsychosocialHistoryTaking,AlliedHealthEthics-Hippocraticoath,CultureandAlliedHealthpractice, Psychologicalreactions,BreakingBadNews,Pain,Sleep,Consciousness.

## RecommendedBooks:

* + BehavioralSciences by M.HRana2007,edition5th
  + SociologyinaChangingWorldbyWilliamKornblum8thedition2007
  + ChangingBehavior:ImmediatelyTransformYourRelationshipswithEasy-to-Learn,Proven CommunicationSkillsbyGeorgianaDonadio2011,edition5th

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## ECT-602 Medical Emergency-II CreditHours:3(2+1)

**Courseobjectives:**

* + Toequipthestudentwithprofessionalknowledge,skill,techniques &ethicalvalues toenablethemto applytheiracquiredexpertise.
  + Studentwillbeabletoprovidepatientcareinmedicalemergency,includingtheawareness ofsupport services availableandknowingwhentoactivatethem.
  + Todeliverefficientcaretoacutelyillpatientinmedicalemergency.

## Coursecontents:

**Renalemergencies:**AcuteRenalfailure,AcuteUrinaryretention,Renal Colic,Hematuria,UTI. **Endocrineemergencies:**Diabetes (type-I,II),Diabeticketoacidosis,Hypo&Hyperthyroidism,Malignant Hyperthermia,Hypo&Hyperglycemia,HHS(hyperosmolar Hyperglycemicstate)

**Hematologicalemergencies:**Bloodtransfusionreaction,Pathophysiologyandmanagementof Anaphylaxis

**Psychiatryemergencies:**Acuteconfusion,Hysteria,dealingwithviolentpatient,Acute Psychosis.

## Practical:

1. UsageofInfusionpumps
2. UsageofAnalyzers
3. UsageofDefibrillators
4. UsageofPatientmonitors
5. UsageofBloodPressureAccessories
6. Ambulancestretcher
7. PreparationofMedicinetrolley
8. PrimarySurvey

## Recommendedbooks:

* + EMERGENCYMedicinemanual.O.John.2005
  + Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
  + Oxfordbookofemergencymedicine.
  + Oxfordhandbookofacutemedicines
  + Firstaidfor emergencyboard
  + CriticalCareEmergency Medicine.

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## RAD- 610 Diagnostic Imaging CreditHours:2(1+1)

**Courseobjectives:**

* + Toequipthestudentwithprofessionalknowledge,skill,techniques &ethicalvalues toenablethem toapplytheiracquiredexpertiseindiagnosticimaging.
  + Studentwillbeabletoprovidepatientcareinimagingdiagnosticstudy.
  + Todeliver theefficientcaretoacuteandchronicallyillpatientinimaginganddiagnosticstudy.

## Coursecontents:

NormalchestX-ray,Normalanatomy,BasicphysicsofX-rayandassessmentoffilmquality,cardiac configuration,Lungfieldandairway,OptimumpositionofET-NG-CENTRALLINE,AbnormalX-ray, Identificationof(Trauma,Hemothorax,Pneumothorax,Lungcontusion)onX-Rayfilm.

Pulmonaryedema,CardiacDeviation,ARDS,Pneumonia,(Bronchopneumonia,Lobarpneumonia,Aspiration pneumonia).

## Practical:

1. IdentificationoftheStructuresofdifferentorgans
2. RadiologicalPresentation&PathologicalFindings onRadiographs
3. Films demonstratingAnatomy

## Recommendedbooks:

* + DiagnosticImagingbyPeterArmstrongMartinWastieAndreaG Rockall6thEdition.
  + ClinicalRadiology Maderidiculouslysimple.

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# 5thSEMERTERCOURSES:

1. **TraumaEmergency-I**
2. **SurgicalEmergency-I**
3. **Burns&Toxicology**
4. **BasicandAdvance lifesupport**
5. **CriticalCareLaboratoryDiagnostics**
6. **AnesthesiaEquipment**

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### ECT -603 TraumaEmergency-I CreditHours:3(2+1)

**Courseobjectives:**

* + Toequipthestudentwithprofessionalknowledge,skill,techniques&ethicalvalues toenable

themtoapplytheiracquiredexpertiseintraumasituations.

* + Toconfidentlyhandlecrisis situations safelyandaccuratelyperformallbasicandadvanced lifesupportprocedures.
  + Todeliver efficientcaretoacutelyilltraumaticallyinjuredpatientintraumacenters.

### Coursecontents:

Introductiontotrauma,traumatypes,types ofwound,biomechanics oftrauma,pre-hospitaltraumacare,triage, mass &multiplecasualty,primary survey&resuscitation,adjunctstoprimarysurvey,secondary survey& physicalexam,airway&ventilatorymanagement,difficult airwaymanagement,traumaflowsheet,trauma scores,injuryprevention,thoracictrauma,headtrauma&TBI,facialandoculartrauma.

### Practical:

1. Recognizetraumaemergency,assessthesituation,obtainabasichistoryandphysicalexamination, manageemergencycare,and,ifneeded,extricatethepatient.
2. BloodPressureRecording
3. PeripheralVenous Access
4. CentralVenous Access
5. CardiopulmonaryResuscitation
6. ECG
7. Infusionpumps
8. Defibrillator

### Recommendedbooks:

* + ATLSbyAmericancollegeofsurgeons9thedition.
  + Rosen’s emergencymedicine;concepts &clinicalpracticeJohn.AMarx.200
  + ABC ofmajortrauma
  + Currenttherapyoftrauma& surgicalcareby JuanA.Asensio,DonaldD.Trunkey

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**ECT-604 Surgical Emergency-I CreditHours:3(2+1)**

**Courseobjectives:**

* + Tosavepatientfromsecondaryinjuryandenablestudenttodeliverefficentcaretoacutelyill patient insurgicalemergency.
  + Toacquirecommon sense,attentiontodetailpritorizingskills andanticipationofpotentialproblem in surgicalemergency.
  + Togiveanypatientrequiringaninjectionorhavingacontagious diseaseoroperativeprocedure thestudentwillmaintainasepsisinallcases.

## Coursecontents:

peripheralvenousaccess,indicationsandcomplications of centralvenousline,venouscutdown&intraosseous accessindehydratedpatient,indication,procedure&complicationsoftracheostomytube,Advanceairway management,chesttubeindication,procedure,careandcomplications,feedingtubeapplications,arterialand pulmonaryarterycatheter,urinarycatheterization,suturingmaterial,suturingtechnique,managementof abrasions,bruisesandlaceration,hemorrhagecontrol,hemmorghicshock,applicationofsplintingandback slabs,IGTN(ingrowingtoenail),managementofsofttissuesinfections&abscessdrainage,wound dehiscence,

## Practical:

1. Usage of Enteral feedingpumps
2. Usage of Bloodgas andelectrolyteanalyzer
3. Resuscitation&airwayteachinglearningsimulators
4. Airwaydevices-laryngoscopes,tubechangers,percutaneoustracheostomy,bronchoscopesets.
5. Hemodialysismachine
6. CardiopulmonaryResuscitation
7. ECGtakingandmonitoring
8. BloodPressureRecordings

## Recommendedbooks:

* + Baily&loveshortpracticeofsurgery28thedition
  + Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005.
  + CriticalcarecaremedicineAtAGlance.RichardLeasch.
  + Oh;smanualofintensivecarebyAndrewbersten.
  + Churchill,spocketbookofintensivecarebysimon M.whitely.
  + QuickcriticalcarerefrencebySusanB Stillwell.

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## ECT-605 Burns&Toxicology CreditHours:3(2+1)

**Courseobjectives:**

* + Studentwillbeabletoanalyzetheburn surfaceareadepth&assess the situation,obtainabasichistory anddophysicalexamination,manageburncare,and,ifneeded,extricatethepatient.
  + ToConfidentlyhandlecrisis situations andsafelyandaccuratelyperformallbasicandadvancedlife supportprocedures.

## Coursecontents:

### Burns

Introductionandepidemiology,PathophysiologyofBurn,Classification& Burntypes,ImmediateCareofBurn

patients (preandinHospital),Assessmentofburnwound,Fluidresuscitationinburnspatients,Surgicaland Pharmacologicaltreatmentofburns,Dressingofburns wound,Energybalanceandnutritionoftheburn patients,additionalaspectoftreatingburnpatient,Non-thermalburninjury(electrical,chemical,cold&ionizingradiationinjuries),

### Toxicology

basicdefinitions oftoxicology,poisonandpoisoning,RouteofExposure,

Toxidrome,GeneralapproachandPrincipalsofdecontamination,drugoverdoseandantidotes,

Management ofAnticonvulsantandantipsychoticdrugspoisoning,Aspirintoxicity,Benzodiazepinepoisoning,

Betablockersandcalciumchannelblockerstoxicity,Cyanides andOrganophosphatetoxicity,NSAIDs and Alcoholtoxicity,recreationaldrugs toxicity, managementofsnake&scorpionbite

## Practical:

1. Applicationofruleofnineforestimationoftotalburn surfacearea.
2. Fluidinput&outputRecording&measurement.
3. ECGtakingandmonitoring
4. BloodPressureRecording
5. PeripheralVenous Access
6. CentralVenous Access
7. Intraosseous Access
8. Externalcardiac resuscitation
9. MonitoringArterialPulseOximetry
10. Urinary&GastricCatheterization

11.Usageofinternal& externalfeedingpumps.

## Recommendedbooks:

* + Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
  + Oxfordhandbookofacutemedicines
  + Firstaidfor emergencyboard
  + CriticalCareEmergency Medicine.
  + Baily&loves shortpracticeof surgery28thEdition.
  + ClinicalemergencymedicinebyscottC. sheirman.

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## ECT-606 Basic &AdvanceLifeSupport CreditHours:3(2+1)

**CourseObjectives:**

* + Toenablethestudenttoperformaccurate&effectiveCardioPulmonaryResuscitationtosecurelifein timewithoutanypermanentloss.
  + Togainexperienceintheanalysis ofdataandmanagementofhemodynamicandelectrolyteinstability, particularlyincardiacarrestandcardiacdiseasestates

## Coursecontents:

Basiclifesupport,Advancecardiaclifesupport,Basictraumalifesupport,Advancetraumalifesupport, Newbornlifesupport,pediatriclifesupport,Cardiopulmonaryresuscitation.

## Practical:

1. Useof AutomatedExternalDefibrillator
2. UseofConventionalDefibrillatorandMonitors 3.Measurementofcentralvenous pressure 4.Insertionofarterialline
3. ECGtakingandmonitoring
4. EndotrachealIntubation&Laryngeal MaskAirway 7.Lungventilationand/oradministeringoxygen 8.CPR onthesimulators

## Recommendedbooks:

* + EMERGENCYMedicinemanual.O.John.2005
  + Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
  + Oxfordbookofemergencymedicine.
  + CriticalcarecaremedicineAtaGlance.RichardLeasch.
  + Oh;smanualofintensivecarebyAndrewbersten.
  + The ICUbookofpaullmarino.
  + Churchill,s pocketbookofintensivecarebysimonM.whitely.
  + QuickcriticalcarerefrencebySusanB Stillwell

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## ICT-604 Criticalcare Laboratory Diagnostics CreditHours3(2+1)

### OBJECTIVES:

Attheendofsemesterstudentshould:

* Todevelopthebasic understandingof commondisease inintensivecareunit.
* Tointerpretedvarioustestsessentialforthediagnosisof differentdiseasesinintensivecareunit

### Coursecontents

**LIVERFUNCTION TESTS:**InterpretationandimportanceinHemolyticanemia,Hepatitis andcholestasis. **RENAL FUNCTIONTESTS**:SerumBloodureanitrogenandcreatenine,Basicpathophysiologyof azotemia, Createnineclearanceanditsimportance,Urinanalysis.

**CARDIACBIOMARKERS:**Markersofcardiaccelldamageincludingcardiactroponins andcreatinekinase.

**PANCREATICFUNCTION TESTS:**Importanceofserumamylaseandlipase.

**STOOL EXAMINATION:**Importanceofmacroscopicstoolexamination,SignificanceofWBCs andRBCsin

microscopicexaminationof stools,Examinationofstoolsforovaandparasites.

**COMPLETE BLOODCOUNT ANDPEREPHERALSMEAR:**Importanceofalterationindifferentblood

indices,SignificanceofchangesinRBC shapeandsize,Significanceofblastcellsinperipheralsmear.

**ABGs:**indication,interpretation,and significanceinmetabolicandrespiratorydisorders**.**

### PRACTICAL:

ABGs performing. Venoussamplingcollection

TakingbloodfromCentrallines Takingbronchial sample

### ROCOMMENDEDBOOKS

* DistrictLaboratoryPracticeinTropicalCountriesby MonicaCheesbrough
* ClinicalLaboratoryMedicine***LippincottWilliams&Wilkins(LWW)***
* ICUBookPaulmerino
* EKGbook,Daleanddubbin.

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## ANE-606 AnesthesiaEquipments CreditHours3(2+1)

**Courseobjectives:**

* Toexplorehis/hercognitionaboutdifferentinstrument,workingprinciples&its importancefor safeanesthesiapracticein the healthcaresystem.
* Tomanagetechnical faultduringanesthesia
* Tomakesurecorrectcalibrationof differentinstrument.

## Coursecontents:

Anesthesiamachineitsdifferentparts &workingprinciple,Medicalgassupplydevices,Laryngoscope,

BreathingcurcitsFacemasks,Anesthesiaventilatorsworkingprinciples,Monitoringdevices,ManualResusitationbag, Defibrillator,LMA,ETT,S,Airwaysoral&nasal,Suctionmachine,Stethoscope,Spinalneedles,Epiduralneedls&Catheres,MagillForcep,BloodgasAnalyzer

**Practical:**

* Ventilatorssettings accordingpatientweightage&disease.
* SterilizationofAnesthesiaequipments.
* Applicationof variousbreathingcircuits.Venturimasks
* Applicationof Face masks
* ApplicationofEpidural Anesthesia.
* Settingof airwaymanagementdevices.

## Recommendedbooks:

1. ClinicalAnesthesiologybyMorgan&MikhailFifthEdition.
2. Essentialof AnesthesiaEquipments byBahal–al–Sakaih&SimonStacey3rdedition.

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# 6thSEMERTERCOURSES:

1. **TraumaEmergency-II**
2. **SurgicalEmergency-II**
3. **Neonatal&PediatricEmergency**
4. **CardiovascularEmergency**
5. **NeurologicalEmergency**
6. **FundamentalOfEmergencyCare**

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## ECT-607 Trauma Emergency-II CreditHours3(2+1)

### Courseobjectives:

* Toequipthestudentwithprofessionalknowledge,skill,techniques&ethicalvalues enable

themtoapplytheiracquiredexpertiseintraumasituations.

* ToConfidentlyhandlecrisissituations safelyandaccuratelyperformallbasicandadvanced lifesupportprocedures.
* Todeliver efficientcaretoacutelyilltraumaticallyinjuredpatientintraumacenters.

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### Coursecontents:

Necktrauma,Abdominaltrauma,pelvictrauma,spine& spinalcordtrauma,musculoskeletaltrauma,traumain pregnancy,pediatrictrauma,geriatrictrauma, thermal&coldinjuries,neardrowning,logrollofatrauma patient, transportofatraumaticpatient,psychosocialtrauma.Bombblastinjuries,

### Practical:

1. UsagePatientmonitors
2. UsageofBloodPressureAccessories
3. PortableSuction
4. PortableVitalSigns Monitor
5. Patienttransfertrolleys
6. Ambulancestretcher
7. PreparationofMedicinetrolley
8. PreparationDressingtrolley
9. Traumaflowsheet
10. Logrolling

### Recommendedbooks:

* ATLSbyAmericancollegeofsurgeons9thedition.
* Rosen’s emergencymedicine;concepts &clinicalpracticeJohn.AMarx.200
* ABC ofmajortrauma
* Currenttherapyoftrauma& surgicalcareby JuanA.Asensio,DonaldD.Trunkey

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## ECT-608 SurgicalEmergency-II CreditHours:3(2+1)

**Courseobjectives:**

* Tosavepatientfromsecondaryinjury.
* Toacquirecommon sense,attentiontodetailpritorizingskills andanticipationofpotentialproblem in surgicalemergency.
* Togiveanypatientrequiringaninjectionorhavingacontagious diseaseoroperativeprocedure thestudentwillmaintainasepsisinallsuchcases tothestandardsmaintained,

bytheaffiliated hospitals.

## Coursecontents:

Managementofairwaybleeding,airwayobstruction,pneumothorax&tensionpneumothorax,hemothorax, hydrothorax,chylothorax,pleuraleffusion,cardiactamponade&pericardiocentesis,managementof upper&

lowerGIbleed,acutepancreatitis,cholelithiasis,acutecholecystitis, appendicitis,hernias,bowelobstruction, uretericobstruction,testiculartorsion,priapism,management,care&complications ofhemorrhoids,

paracentesis (ascitictap), abdominalaorticaneurysm,hepaticcoma,epistaxismanagement,air/gas embolism.

## Practical:

1. UsageofEnteral feedingpumps
2. UsageofBlood gas andelectrolyteanalyzer
3. Resuscitation&airwayteachinglearning simulators
4. Airwaydevices-laryngoscopes,tubechangers,percutaneoustracheostomy,bronchoscopesets.
5. Hemodialysismachine
6. CardiopulmonaryResuscitation
7. takingandmonitoring
8. BloodPressureRecording

## Recommendedbooks:

* EMERGENCYMedicinemanual.O.John.2005
* Rosensemergencymedicine;concepts &clinicalpracticeJohn.A Marx.2005
* Oxfordbookofemergencymedicine.
* CriticalcarecaremedicineAtAGlance.RichardLeasch.
* Oh;smanualofintensivecarebyAndrewbersten.
* The ICUbookofpaullmarino.
* Churchill,s pocketbookofintensivecarebysimonM.whitely.
* QuickcriticalcarerefrencebySusanB Stillwell.

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## ECT-609 Neonatal&Pediatric CriticalCare CreditHours:3(2+1)

**CourseObjectives:**

* Todeveloptheknowledge,skills andattitudes necessarytobeclinicallyproficientinthecareofthe acutelyillorinjuredchild.
* To recognizeaneonatal/pediatricemergency,assessthesituation, obtainabasichistoryandphysical examination,manageemergencycare,and,ifneeded,extricatethepatient.

## Coursecontents:

Structuralapproachtowardsaseriousillorinjuredchild,Childwithbreathingdifficulty,Asthma,Childwith abnormalpulse rateandrhythms,Convulsingchild,childin shock,Shocktypes anditsmanagement,Childwith bumsandScald,Childwithdecreaseconsciouslevel,ChildwithabdominalTrauma,Acutechesttrauma,Child withacutespinalcordinjury,Childwithheadinjuryanditsmanagement, NearDrowning.

## Practical:

1. UsageofBloodgas andelectrolyteanalyzer
2. Resuscitation&airwayteachinglearning simulators
3. UsageofPortableSuction
4. UsageofPortableVitalSigns Monitor
5. UsageofTransportIncubators
6. AdvancePediatriclifesupport
7. Neonatallifesupport
8. Logrolling.

## Recommendedbooks:

* NelsonTextBookofPediatrics20thedition.
* TextBookofPediatricsbyProfDrAzamKhan.
* EMERGENCYMedicinemanual.O.John.2005
* Rosensemergencymedicine; concepts &clinicalpracticeJohn.AMarx.2005
* Oxfordbookofemergencymedicine.
* Oh;smanualofintensivecarebyAndrewbersten.
* The ICUbookofpaullmarino.

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## ECT-610 CardiovascularEmergency CreditHours:3(2+1)

**CourseObjectives:**

* Studentwillbeabletorecognizethecardiovascularemergencywiththeawarenessofsupportservices availableandknowingwhen toactivatethem.
* Todeliver efficientandcompetentcaretoacuteandchronicallyillpatient.

## Coursecontents:

Basic ECG,Acutechestpain,anginapectoris,acutecoronarysyndrome(stableangina,unstableangina,acute

myocardialinfarction)cardiogenicshock,syncope,congestiveheartfailure&its complications,pulseless electricalactivity,cardiogenicpulmonaryedema,acutepericarditis,acutemyocarditis,pericardialeffusion, systemicandpulmonaryhypertension,aorticdissection,aorticaneurysm,heartblocks,cardiactamponade, managementofarrhythmias(atrialflutter&fibrillation,ventricularflutter&fibrillation,supraventricular tachycardia&fibrillation) bradyarrhythmia&indicationsforcardiacpacing.

## Practical:

1. Externalcardiac resuscitation
2. Manualdefibrillation&cardioversion
3. UseofTranscutaneous PacingDevices
4. EndotrachealIntubation&Laryngeal MaskAirway
5. Urinary&GastricCatheterization
6. Resuscitation&airwayteachinglearningsimulators
7. Airwaydevices-laryngoscopes,tubechangers,percutaneoustracheostomy,bronchoscopesets.

## Recommendedbooks:

* EMERGENCYMedicinemanual.O.John.2005
* Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
* Oxfordbookofemergencymedicine.
* CriticalcarecaremedicineAtAGlance.RichardLeasch.
* Oh;smanualofintensivecarebyAndrewbersten.
* The ICUbookofpaullmarino.
* Churchill,s pocketbookofintensivecarebysimonM.whitely.
* QuickcriticalcarerefrencebySusanB Stillwell.

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## ECT-611 NeurologicalEmergency CreditHours:3(2+1)

**COURSEOBJECTIVES:**

* Studentwillbeabletorecognizetheneurologicemergencytimelytopreventfromsecondaryinsult.
* Toconfidentlyhandlecrisissituations safelyandaccuratelyperformallbasicandadvancedlife supportprocedures.

## COURSECONTENTS:

NeurologicalexaminationintheE.D (myotomes,dermatomes,spinalnervedistribution,reflexes,AVPUscale) Headache,itstypes&facialpain,trigeminalneuralgia,ischemicstroke&TIA,hemorrhagicstroke,epidural haematoma,subduralhaematoma,intracranialbleed,alteredmentalstatusandcoma,vertigo&dizziness, seizure,epilepsyandstatusepilepticus,CNS &spinal infections(viral,bacterialandfungalmeningitis, encephalitis,brainabscess),lumbarpuncture&itscomplications,neuromuscularrespiratoryfailure,mystheniccrises,tetanus,braindeathassessment,cerebralvenous thrombosis,trigeminalneuralgia,botulism,GBS,sciatic pain,cerebraledema,spinalcordcompression,neurolepticmalignant syndrome,spinalshock,spinalcord syndromes,GCSassessment.

## PRACTICAL:

* MeasurementofGlasgowcomascale.
* Assessmentofbraindeath.
* Usageofglucometer
* Usageofpulseoximeter
* CardiopulmonaryResuscitation
* EndotrachealIntubation& Laryngeal MaskAirway
* Lungventilationand/oradministeringoxygen
* Use ofEndTidal C02MeasuringDevices
* MonitoringArterialPulseOximetry
* Urinary&GastricCatheterization
* UsageofEnteralfeedingpumps
* UsageofBloodgas andelectrolyteanalyzer
* Resuscitation&airwayteachinglearning simulators

## RECOMMENDEDBOOKS:

* EMERGENCYMedicinemanual.O.John.2005
* Rosen’s emergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
* Oxfordbookofemergencymedicine.
* Oh;smanualofintensivecarebyAndrewbersten.
* The ICUbookofpaullmarino.
* Churchill,s pocketbookofintensivecarebysimonM.whitely.
* Quickcriticalcare referencebySusanB Stillwell.

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## ECT-612 FundamentalOfEmergency Care CreditHours:2(1+1)

**CourseObjectives:**

At theendofthe semesterstudentwillbeableto:

* Recognize criticalcarepriorities,design,role ofmedicaltechnologist andotherprofessionals understand

criticalcarepatients.

* RecognizebasicEmergencycareequipmentandinstrumentsandtherapies ontechnicalManagementof

commonor importantproblem in Emergencycare settings.

## Coursecontents:

* 1. OrientationofEmergencycare:Physicaldesign of emergencycaresetting, Dailyrolesincriticalcare,Personalandprofessionalrelationship, Understandingcriticalcarepatients, Hazards andsafetyprecautions
  2. Patientassessmentprocedures: Comprehensivehistoryofpatients,Physicalexamination(cardiopulmonary)
  3. Solution,bodyfluid,andelectrolyte,Principlesoffluidtherapy,acidbase balance, Body fluids and electrolytes,Disordersofpotassium balances,Disordersofdivalent ions
  4. Bloodtransfusion

1. Feedingtubeplacement:Essentialdiagnostictestandprocedure, Determiningthemostappropriate tubetype,siteandplacementtechniques
2. Monitoringofpatient:invasivepressuremonitoring,noninvasivecardiovascularmonitoring, hemodynamicmonitoring:temperaturemonitoringbloodvolumemeasurementinemergencyroom,

Earlywarning system,Scoring system.

### PRACTICAL

* Knowthebasicandfundamentalconcepts aboutemergencycare
* Examineinterpretpatientcomplaints, signsandsymptomstodeterminepatientConsiderationandanticipatechangesincondition
* Calculatecalorie,andfluidrequirementsforthepatient
* GatherinformationforEmergencycaretransport
* ManageandperformassessmentsrequiredforEmergency caretransport

### RecommendedBOOKS:

Egan’s fundamentals ofrespiratorycareCivetta,Taylor,&Kirby's:CriticalCare.

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# 7thSEMERTERCOURSES:

1. **ObstetricalCriticalCare-I**
2. **DisasterManagement**
3. **ResearchMethodology**
4. **Biostatistics**
5. **Epidemiology**
6. **FundamentalsofInfectionControl**

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## ECT-613 ObstetricalCritical Care-I CreditHours:3(2+1)

### CourseObjectives:

* Togainexperienceintheanalysis ofdataandmanagementofhemodynamicandelectrolyteinstability, particularlyshock,cardiacdiseasestates,obstetricalemergencies andothermedicalandsurgicalcrisis.
* ToConfidentlyhandlecrisissituationsandsafelyandaccuratelyperformallbasicandadvancedlife supportprocedures

### Coursecontents:

Introductiontoobstetricsand gynecology.physiologicalchangesinpregnancy.pre-pregnancyandantenatal care.stagesoflabor.Motherwithcomplicationoflabor.Fetaldistress,Obstructedlabor,Shouldereddystocia,

prolapsedcord,uterineinversion,ruptureuterus,malposition&presentation,lithotomyposition,permortem caesariansection,Portogram,ventousedelivery,caesariansection,Episiotomy.Pregnancyinduced hypertension,pre-Eclampsia,Eclampsia,HELLPsyndrome,EmergencyRelatingtoPregnancy,Motherwith severeabdomenpain,Ectopicpregnancy,Miscarriage&Abortion.Motherwithsevereabdomenpaininlater pregnancy,Motherwithlargeantepartumhemorrhage,Motherwithlargepostpartumhemorrhage.

## Practical:

1. Externalcardiac resuscitation
2. UseofAutomatedExternalDefibrillator
3. UseofConventionalDefibrillatorandMonitors
4. UseofTranscutaneous PacingDevice
5. EndotrachealIntubation& LaryngealMaskAirway
6. Lungventilationand/oradministeringoxygen
7. Use ofEndTidalC02MeasuringDevices
8. MonitoringArterialPulseOximetry
9. Urinary&GastricCatheterization

## Recommendedbooks:

* EMERGENCYMedicinemanual.O.John.2005
* Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
* Oxfordbookofemergencymedicine.
* CriticalcarecaremedicineAtaGlance.RichardLeasch.
* Oh;smanualofintensivecarebyAndrewbersten.
* The ICUbookofpaullmarino.
* Churchill,spocketbookofintensivecarebysimonM.whitely.
* QuickcriticalcarerefrencebySusanB Stillwell.

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## ECT-614 DisasterManagement CreditHours:2(1+1)

**Courseobjectives:**

* Toacquireknowledgeandclinical competenceinperformingtriagemultipletasks ofemergency medicine,trauma,disastermanagement.
* Todemonstrateknowledgeofhuman structure,function,anddiseaseprocess.

## Coursecontents:

Disastermanagement,types ofdisaster,preparationfordisaster,transfers todefinitivecare,LogRolling&transferhours,Triage&levels oftriage,CommunityMedicine,Immunization,Vaccination,Communicable&NonCommunicabledisease, ModeofInfection&transmission,DiseasePrevention.

## Practical:

1. Preparationofrescueambulanceequippedwithallemergencydrugs andinstrumentation.
2. UsageofPortableSuction
3. UsageofPortableVitalSigns Monitor
4. UsageofTransportIncubators
5. AdvancePediatriclifesupport
6. Logrolling.

## Recommendedbooks:

* HYNDMAN,DonaldandHyndman,David(2010)NaturalHazards and Disasters.BrooksCole,3rdRevisedEdition,Stamford,Connecticut,USA.
* KREBS,RobertE.(2003)TheBasics ofEarthScience.Greenwood, Westport, Connecticut,USA.
* STRAHLER,AlanH.andStrahler,Arthur(2004)PhysicalGeography: ScienceandSystems oftheHumanEnvironment.JohnWiley&Sons, 3rdEdition,Hoboken,NewJersey,USA.

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## PMS-621 ResearchMethodology CreditHours:3(2+1)

### CourseObjectives:

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

* Recognize the basic concepts of research and the research process.
* Develop understanding on various kinds of research, objectives of doing research, research designs and sampling.
* Conduct research work and formulating research synopsis and report.

### CourseContents:

Introductionto research(insimpletermandascientificterm),conceptofresearch,whydoneed research,advantageandscopeofresearch,identificationofresearchneedsanditsqualities,Typesof research;Qualitative,Quantitativeandtheirsubtypes,ResearchprocessIntroduction(Deciding, formulatingresearchquestions,planning,conductofstudy,datacollection,processingandanalysis, Researchwritingandreporting),Literaturereview(What,why,wherefrom,howandqualitiesofgood literatureanditsuse),Writingaresearchproblem/questionandselectionofthetitleofstudy, Identificationofvariousresearchvariables,Hypothesisitstypes,formulationandtestingofhypothesis, Researchstudydesignsusedinqualitativeandquantitativestudies,Designingofdatacollection tools/questionnaires,Selectionofappropriatesamplingtechniqueinvariousstudydesigns,Conceptof validityandreliability,Researchproposalwriting,EthicalprinciplesofResearchandtheirexamplesto applythoseprinciples,Datacollectionandprocessing/displayingtechniques,Writingofresearchreport (Chaptersinresearchreport/thesis,Outline/Abstractofresearch,Referencingand Bibliography0

### PracticalWork:

* + LiteratureSearch
  + Surveyconduct
  + CitationandReferencing
  + Proposalwriting
  + Datacollectionanddisplaying

### Recommended Books:

* ResearchMethodologybyRanjitKumar3rdEdition
* FoundationofClinicalResearchbyPortneyLG WalkaisMP in1993, Publisher byAppleton andlaugeUSA
* Aguide toResearchMethodology, Biostatistics and Medicalwriting bycollege ofphysicians andsurgeons PakistanbyWHOcollaborationcenter
* HealthsystemresearchprojectbyCorlienM Varkerisser,IndraPathmanathan,AnnBrownlee in 1993 byInternationalDevelopment ResearchCenter inNew Dehli,Singapore.

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## PMS-622 Biostatistics CreditHours:3(2+1)

### Courseobjectives:

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

* State the principal concepts about biostatistics; collect data relating to variable/variables.
* Examine and calculate descriptive statistics from collected data.
* Interpret data via binomial distribution and the concept of sampling.
* Apply hypothesis testing via some of the statistical distributions.

### CourseContents:

Introductionto Biostatisticsanditstypes;Descriptiveandinferentialstatistics,Measureofcentral tendency,Measureofdispersion,Statisticaldata,PresentationofDatabyGraphs,Dataanditstypes, Datacollectiontools,DataanalysistoolsHealthRelatedData,Presentationofquantitativedata**,**The conceptofsampling,typesandmethodsofsample,sampledistribution,errorofsampling,Variableand itstypes,Testsusedinbiostatisticstheiruseandinterpretation(t-tests,Chi-squareANOVA,Regression andcorrelation)Hypothesisformulationandtestingonthebasisofstatisticsandstatisticaltests,Sample andpopulation,Basicconsiderationsinsampling,randomsampling,stratifiedrandomsampling,cluster sampling,systematicsampling,determinationofsamplesize,eliminationofsamplingbias**,**twotypes of errors,acceptanceandrejectionRegions,Towsidedandonesidedtests,generalstepsinhypothesis testing,testaboutmeans,confidenceintervalformean,Preparingdataanalysisbyvarioussoftware,Use ofSPSS

### PracticalWork:

* ManualcalculationrelatedtomeasureofcentraltendencyandmeasureofDispersion
* DefiningvariablesinSPSS
* EntryofdatainSPSS
* Analysis ofdatainSPSS

### Recommended Books:

* + Aquidetoresearchmethodology,biostatistics andmedicalwritingbycollegeofphysicians and

surgeons PakistanbyWHOcollaborationcenter

* + Readingunderstandingmultivanantstatisticsgiimm LGYardADPR,publisherAmerican Psychologicalassociation
  + IlyasAnsari’s communitymedicine (TextBook)byIlyas andAnsari2003publishedby Medical divisionUrduBazzarKarachi

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## PMS-623 Epidemiology CreditHours:3(2+1)

### Courseobjectives:

Afterstudyingthis coursethestudents willbeableto:

* + - Explainepidemiologicalterminologies
    - Applytheknowledgetocalculatediseaserisk,prevalenceandincidence
    - Selectandchooseanappropriatestudydesigninresearch
    - Explainconfoundingand Biasesinstudies
* AppraiseSWOTanalysis

### CourseContents:

IntroductiontoEpidemiologyandbasictermsusedinEpidemiology,MeasuresofDiseaseOccurrence; IncidenceandPrevalence,Incidence,Ratesanditstypes,Dynamicsofdiseasetransmission, Measurementofdiseasefrequency,risk,rateandproportion,Calculationof:Prevalence,Incidence, Duration,MortalityandMorbidity,StudyDesignOptions,ResearchstudyDesigns,CaseControlStudy, CohortStudy,ExperimentalStudy,RCT,Meta-analysisandsystematicreview,TheCross-Sectional Study,Case-Reports,SourcesofError;ConfoundingandBiases,Oddsratioandrelativerisk,SWOT analysis,Reliabilityoftests byusingSensitivityandspecificity

### Recommended Books:

* CalculationofSensitivityandspecificity
* CalculationofIncidenceandprevalence
* Findingriskofdisease,rateandfrequency
* SWOTanalysis
* An\_Introduction\_to\_Epidemiology\_for\_Health\_Professionals
* Epidemiologyby LeonGordis5thEdition

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## PMS-624 FundamentalsofInfectionscontrol CreditHours:3(2+1)

**CourseObjectives:**

* Tointroducethestudents withbasicconceptsininfectioncontrol.
* Tointroducethestudents withinfectioncontrolprinciples andpractices.
* Tointroducethestudents withimportanceofimmunizationandhandhygieneininfectioncontrol.
* Tointroducethestudents withthe roleofclinicallaboratoryininfectioncontrol.

## Coursecontents:

Introductiontoinfectioncontrol,principleofinfectioncontrol,sourceandtransmissionofinfection,infectionin thehospitalenvironment,immunizationprophylaxes,exposureprophylaxes,sterilization, disinfectionand antisepsis,practicaldisinfection,epidemiologyofinfectious disease,antimicrobialagents,antibioticandtheir uses (prophylactic,empirical,andtherapeutic),antibiotic resistanceandpolicy,principles oflaboratory diagnosis ofinfectious diseases,biomedicalwastemanagement,biosafetylevels,handhygiene,standard precautions andPPE.

## Practical:

1. Demonstrationofhandwashingandhandrubbingtechnique.
2. Preparationofdifferentdisinfectionandantisepticsolutions.
3. Demonstrationofbiomedicalwastemanagements inhospitals.
4. Demonstrationofcleaninganddisinfectionofworkingpremises.
5. Demonstrationofhowtohandlespills andaseptichandling.
6. Demonstrationofstandardprecautions andPPE.

## Recommendedbooks:

* + Fundamentals ofInfectionPreventionandControl:TheoryandPractice.Weston,D., Wiley-Blackwell, 2013.
  + Sherris MedicalMicrobiology:An IntroductiontoInfectious Diseases.Ryan,K.J.,Ray,C.G.,4thed.

McGraw-Hill,2003.

* + DistrictLaboratoryPracticeinTropicalCountries,Part1&Part2.Cheesbrough,M.,2nded.

CambridgeUniversityPress,2006.

* + MedicalMicrobiologyandInfectionataGlance. Gillespie,S.,H.,Bamford,K.,B.,4thed. Wiley- Blackwell,2012.

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# 8thSEMERTERCOURSES:

1. **ObstetricalCriticalCare -II**
2. **Ambulanceoperation andmanagement**
3. **BIOETHICS**
4. **ResearchProject.**

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## ECT-615 ObstetricalCritical Care-II CreditHours:3(2+1)

**Course Objectives:**

* To gainexperience in the analysis of data and management of hemodynamic and electrolyte instability, particularlyshock,cardiac diseasestates,obstetricalemergencies andothermedicalandsurgical crisis.
* ToConfidentlyhandlecrisissituationsandsafelyandaccuratelyperformallbasicandadvancedlifesupport procedures

**Course contents:**

Medicalemergencyduringpregnancy,MotherwithBreathingdifficulty,Severebronchialasthma,pneumoniain pregnancy,heartdiseaseinpregnancy.Anemia,Sicklecelldisease,Managementofdiabeticketoacidosis,Anaphylaxis management,pulmonaryembolism,SevereDehydration,Motherwithseveregastroenteritis,motherwithacuterenal failure,motherin comaconvulsion,HIVinpregnancy.Motherwithdangerousfeverduringpregnancy andlabor,Lossof fetalmovementafter22weekofgestation,severepuerperalsepsis,Rh incompatibility,Emnioticfluid embolism, infectioninpregnancy,Dysmenorrhea,Amenorrhea,

## Practical:

1. CardiopulmonaryResuscitation
2. ECGtakingandmonitoring
3. BloodPressureRecording
4. PeripheralVenous Access
5. CentralVenous Access
6. Intraosseous Access
7. Externalcardiac resuscitation
8. UseofAutomatedExternalDefibrillator
9. UseofConventionalDefibrillatorandMonitors

## Recommendedbooks:-

* 1. EMERGENCYMedicinemanual.O.John.2005
  2. Rosensemergencymedicine;concepts &clinicalpracticeJohn.AMarx.2005
  3. Oxfordbookofemergencymedicine.
  4. CriticalcarecaremedicineAtaGlance.RichardLeasch.
  5. Oh;smanualofintensivecarebyAndrewbersten.
  6. TheICUbookofpaullmarino.
  7. Churchill,s pocketbookofintensivecarebysimonM.whitely.

8. QuickcriticalcarerefrencebySusanB Stillwell.

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## ECT-616 Ambulanceoperationand management CreditHours:3(2+1)

**CourseObjectives:**

* To Directandcoordinatethe transportofthepatient byselectingthebest available method(s) in conjunctionwithmedicalcommandauthority/protocol.
* ToRecordinwritingthedetails relatedtothepatient’s emergencycareandtheincident.
* ToCommunicatewiththemedicalcarefacilityreceivingthepatientaboutthepatient’s condition,status, andarrivaltime

### Coursecontents

**Introduction:**UnderstandingtheManagementof AmbulanceServices.

**LegalandEthicalPrinciplesofEmergencyCare**

**Ambulance Equipmentrequirement** - Airway and ventilation equipment - Immobilization devices - Bandages - Communications-ObstetricalKit,Injurypreventionequipment-Miscellaneous,VascularAccess,Cardiac-Infection

control&Personalprotectiveequipment,otheradvanceequipment-Medications,**Managinganincident–**actionatan emergency,traffic incident,Fire,ElectricalIncident,waterincident,majorincident,**Principlesoftransport,**

Hazardcontrol-Types ofHazardous material,dealingwithdifferenttypes ofhazardous material-EMT

safety**Extrication**;Definition,Purposeandscope,Devices,StagesofextricationPreparation-Arrivalandscenesize- up,**PrinciplesofLifting,Moving,andPositioningofPatients**98,**Selectionandtransportationofpatienttothe**

**properproviderinstitute(destination)**decisionmaking-documentationofthedecision,Managingpatienthandoverto

theproviderinstitute,Guidelinesoncommunicatingwithindividuals-Guidelinesonmaintainingconfidentialityand respectingneedforprivacy–Handlingofstressfulorriskysituations,**Actwithinthelimitsofone’scompetenceand authority**Knowingone’sjobroles andresponsibilities-recordingandreporting,

## Practical:

* Resuscitation&airwayteachinglearningsimulators
* Usage of PortableSuction
* Usage of Portable VitalSignsMonitor
* Usage of Patienttransfertrolleys
* Ambulancestretcher
* Preparationof Medicinetrolley
* PreparationDressingtrolley
* Usage of infusionpumps

## Recommendedbooks:

1. EMERGENCYMedicinemanual.O.John.2005
2. Rosensemergencymedicine;concepts&clinicalpracticeJohn.AMarx.2005
3. Oxfordbookofemergencymedicine.
4. CriticalcarecaremedicineAtaGlance.RichardLeasch.
5. Oh;smanualofintensivecarebyAndrewbersten.
6. TheICUbookofpaullmarino.
7. Churchill,spocketbookofintensivecarebysimonM.whitely.
8. QuickcriticalcarerefrencebySusanBStillwell.

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### PMS-625 BIOETHICS CreditHours 2(2+0) CourseObjectives:

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

* Identify ethical issues in medicine, health care and life sciences.
* Describe rational justification for ethical decisions.
* Practice the ethical principles of the Universal Declaration on Bioethics and Human Rights.
* Recognize and distinguish an ethical issue from other issues..

### CourseContents:

Introductiontobioethics,ethicalprinciples,autonomy,informedconsent,intentionalnon-disclosure,patient self-determinationact,thehealthinsuranceportabilityandaccountabilityactof1996(HIPAA)privacyand securityrules,non-maleficence,slipperyslopearguments,beneficence,paternalism,justice,socialjustice,the patientprotectionandaffordablecareact,professionalpatientrelationship,unavoidabletrust,humandignity, patientadvocacy,moralsuffering,ethicaldilemmas.

### Recommended Books:

Introductiontobioethics andethicaldecisionmakingbyKaren L.Rich(chapter2)2015



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## PMS-626 ResearchProject CreditHours:6(0+6)

**CourseObjectives:**

* The student will learn some basic research methodology, gain knowledge of the specific area of radiology being researched and have the opportunity for more extensive one-on-one interaction with a member of the radiological staff. It will hopefully result in some form of presentation or publication for the student. This is most suitable for students planning to enter radiology as a career.

## Coursecontents:

Duringlastyeareachstudentshouldselectatopicofresearchreportwithconsultationofhis/hersupervisorand shallprepareandsubmitresearch reporttoKhyberMedicalUniversitybytheendoflastyear.

## Practical:

* Ahardcopyofresearchprojectshouldsubmittoexaminationfordegree requirements fulfillment

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