B. Sc. General in Computer Science

Programme Specific Outcome (PSO)

By the end of the program B. Sc. General in Computer Science, the student will be able to:

- Develop problem-solving abilities using computer.
- Design the application using programming languages.
- Ability to understand the principles and development methodologies of computersystems.
- To help students build-up a successful career in Computer Science and to produceentrepreneurs who can innovate and develop software products.
- To build the necessary skill set and analytical abilities for developing computer basedsolutions for real life problems.
- Apply knowledge of computing and mathematics appropriate to the discipline.

Course Outcome (CO)

COSGCC01: Problem Solving using Computers

Outcomes: Thecourseis designedforto providingknowledgeof Python.Students willbe able todevelop logicswhichwill help themto create programs,applications.
Afterthe completionofthiscourse,thestudentswillbeableto knowthefollowing:

- Understandbasic planning of the computer program.
- Fundamentalsof Pythonlanguage.
- LoopControlStructures,Functions.
- Basic syntax of Python language.
- Iterations and Recursion.
- Lists,Strings, Dictionary.
- Object oriented programming using python.
- Searching and sorting.
- Abilityto read, writeanddebugprograms.

COSGCC01: Problem Solving using Computers Lab.

Outcomes: Studentswillabletoknowthefollowing:

- Understandthe conceptofdatatypes,loops,functions,lists,string.
- Analyseproblems,errors andexceptions.
- Applyprogramming concepts to compile anddebugpythonprograms to find solutions.
- Understandthevarious objectorientedprogramming.

COSGCC02: Database Management System

Outcomes:

This course is intended to provide you with an understanding of the currenttheory and practice of database management systems.To help you more fully appreciate theirnature,thecourseprovidesasolidtechnicaloverviewofdatabasemanagementsystems, using a current database product as a case study.In addition to technical concerns, more general issuesare emphasized.These include data independence, integrity, security, recovery, performance,databasedesign principles, anddatabaseadministration.
Atthecompletion ofthis course,students shouldbeabletodo thefollowing:

- Understandtheroleofadatabase managementsystem inanorganization.
- Understandbasicdatabaseconcepts,includingthestructureandoperationofthere lationaldatamodel.
- ConstructsimpleandmoderatelyadvanceddatabasequeriesusingStructuredQuery Language (SQL).
- Understand and successfully apply logical database design principles, including E-Rdiagramsand databasenormalization up to BCNF.
- DesignandimplementasmalldatabaseprojectusingSQL.
- Understandtheconceptofadatabasetransactionandrelateddatabasefacilities,includ ing concurrency control, journaling, backup and recovery, and data object lockingandprotocols.

COSGCC02: Database Management System Lab

Outcome: Students will able to know
StructuredQuery Language

- CreatingaDat
  abaseCreatin
  gaTable
  SpecifyingRelationalDataT
  ypesSpecifyingConstraints
  CreatingIndexes

- TableandRecordHan
  dlingINSERTstateme
  nt
  Using SELECT and INSERT
  togetherDELETE,UPDATE,TRUNCA
  TEstatementsDROP,ALTER statements

3. RetrievingDatafromaData
   baseTheSELECT
   statement
   Usingthe WHERE clause
   UsingLogicalOperatorsintheWHEREclause
   UsingIN,BETWEEN,LIKE,ORDERBY,GROUPBYandHAVINGClause

COSGCC03: Operating System

Outcomes: After completionofthecourse,studentswilllearnthefollowing:

- Thebasicsofoperatingsystemslike kernel,shell,types and viewsofoperatingsystems.
- DescribethevariousCPUschedulingalgorithmsandremovedeadlocks.
- Explainvariousmemorymanagementtechniques andconcept ofthrashing.
- Usediskmanagementanddiskschedulingalgorithmsforbetterutilizationofexternal memory.
- Recognizefilesysteminterface, protectionandsecuritymechanisms.
- Explainthevariousfeatures ofOSlikeUNIX,Linux,windowsetc.
- Thebasicof cloudcomputingonLinuxsystem.
- Policymechanism,Authentication,Internal accessAuthorization.

COSGCC03: Operating System Lab
Outcomes:

- Demonstratetheinstallationprocessofvariousoperatingsystems.
- ImplementvirtualizationbyinstallingVirtualMachinesoftware.
- ApplyUNIX/LINUXoperatingsystem commands.
- Implementvarioustype ofschedulingalgorithms.
- Implementationsofvarioussystemcalls.

- UnderstanddifferentUNIX/LINUXshellscriptsandexecutevariousshellprograms.

COSGSEC-1:HTML Programming

Outcomes:

Student will learn HTML is the standard markup language for Web pages.WithHTMLyoucan createyourown Website.

- Useknowledgeof HTMLand CSScodeandanHTMLeditortocreate personaland/orbusinesswebsites followingcurrent professional and/orindustrystandards.

- Usecriticalthinkingskillstodesignandcreatewebsites.
- Useastand-alone FTPprogramto uploadfilestoawebserver.

COSGSEC-1:HTMLProgramming(Lab)

Outcomes:

- Completionofamulti-page website
- Useknowledgeof HTMLand CSScodeandanHTMLeditortocreate personaland/orbusinesswebsitesfollowingcurrent professional and/orindustrystandards.
- Usecriticalthinkingskillstodesignandcreatewebsites.
- Useastand-alone FTPprogramto uploadfilestoawebserver.

COSGCC-04:Computer System Architecture

Outcomes: Studentswillabletoknowthefollowing

- Computerarchitecturehelpstounderstandthebasic conceptsandstructureofcomputers.
- Aftercompletionofthecourse,studentswilllearnthefollowing:
- Understandthetheoryandarchitectureofcentralprocessingunit.
- Analysesomeofthedesignissuesin termsofspeed,technology,cost,performance.
- DesignasimpleCPU withapplyingthetheoryconcepts.
- Useappropriatetoolstodesignverifyandtestthe CPU architecture.
- Learntheconceptsofparallelprocessing,pipeliningandinter-processor communication.
- Understandthe architectureandfunctionalityof centralprocessingunit.
- Exemplifyin a betterwaytheI/Oand memoryorganization.
- Definedifferentnumbersystems,binaryaddition.

COSGCC-04: Computer System Architecture (Practical)

Outcomes:

- MinimizetheBooleanalgebraanddesignitusinglogic gates.
- Analyseanddesigncombinationalcircuit.
- Realizegivenfunctionusingcombinationalcircuit.
- Design anddevelopsequentialcircuits
- Studentswillabletounderstandthe organizationalconceptofaCPU anditscomponents.
- Studentswill ableto usethe concept of registers set,counters and manymemoryelementswith theapplication ofmemoryorganization.
- Studentswillabletolearntheconceptofaddressing,instructionsets,machinecycle,C

PUto memoryfetching, bus organization etc.

- Studentswillabletolearnabouttheinstructionformatandinstructionmodule.
- Studentswillabletounderstand theoverallconceptofCPUand itsessentialcomponentsmainlyALU, Registers, CU and theirsub components.

COSGSEC-2: PHP Programming

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

- Write PHP scripts to handle HTML forms.
- Write regular expressions including modifiers, operators, and Metacharacters.
- Create PHP programs that use various PHP library functions, and that manipulate files and directories.
- Analyze and solve various database tasks using the PHP language.
- Analyze and solve common Web application tasks by writing PHP programs.

COSGDSE-01: Programming in Java

Outcomes: Javaisthemostfamousplatform,whichisusedtodevelopseveralapplications for the systems as well as embedded devices like mobile, laptops, tablets and manymore. It is an object oriented programming language. There is huge scope for this programminglanguage.

Aftercompletionofthe course, students willabletounderstandthefollowing:

- Ableto understandtheuseofOOPs concepts.
- Ableto solve real worldproblems usingOOP techniques.
- Ableto understand theuseof abstraction.
- AbletounderstandtheuseofPackagesandInterfacein java.
- Abletodevelopandunderstandexceptionhandling,multithreadedapplicationswithsynchronization.

COSGDSE-01:ProgramminginJava (Practical)

Outcomes: Studentswillabletoknow thefollowing:

- ImplementObjectOrientedprogrammingconcept usingbasicsyntaxesofcontrolStructures,stringsandfunctionfordevelopingskillsoflogicbuildingactivity.
- Identify classes, objects, members of a class and the relationships among them needed forafindingthe solution to specificproblem.
- Demonstrateshowtoachievereusabilityusinginheritance, interfacesandpackagesanddescribesfasterapplication development can beachieved.
- Demonstrate understanding and use of different exception handling mechanisms andconceptofmultithreadingforrobustfaster andefficientapplication development.
- Identifyand describecommon abstract userinterface components to designGUIinJavausingApplet&AWT alongwith response to events.
- Identify,Design&developcomplexGraphicaluserinterfacesusingprincipalJavaSwingclassesbased on MVC architecture.

COSGDSE-02: E-Commerce Technologies
Outcomes: After successfully completing this course, students should be able to:

- Demonstrate an understanding of the foundations and importance of eCommerce
- Demonstrate an understanding of the impact of eCommerce on business models and strategy
- Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational.
- Describe the infrastructure for eCommerce
- Demonstrate an understanding of eCommerce related programming, database, and networking issues.
- Recognize legal, global, privacy, security and risk management issues in eCommerce