Guideline for CSE 1002- A quick reference- Winter 2019-20

OBJECTIVES OF THE COURSE

- To introduce the essential skills for a logical thinking to solve the problems
- To introduce the essential skills in programming for solving the problems using computers.

A TYPICAL LAB SESSION

Every Lab session will stress on the process of Problem Solving using computers, along with the required coding, which includes all the stages involved in the process, right from the description of the problem till the attainment of the required output from the computer.

Introducing the concept/construct in a programming language through a problem.

- Step 1 : Description of the problem
- Step 2 : Understanding the problem
- Step 3 : Analysing the different approaches to solve the problem
- Step 4 : Choosing an appropriate approach
- Step 5 : Writing the required pseudocode/flowcharts
- Step 6 : Test for sample inputs

- Step 7 : Write the relevant Code with suitable constructs with proper syntax and semantics
- Step 8 : Compile and debug
- Step 9 : Validate the test cases
- Step 10: Execute and arrive at the solution.

All the slots will have a minimum of 42 lab sessions.

Category of Lab Sessions	No.
Practice Sessions	38
Consolidated Assessment Test (CAT)	02
Final Assessment Test(FAT)	02
Total sessions	42

PRACTICE SESSIONS

- The usual lab session is called as a Practice Session
- In every practice session, the teacher will explain the concepts of Problem-solving by taking a problem and the constructs of the programming by briefing the ways in which we code for that problem
- Every practice session will be a hands-on session.
- Teachers will be illustrating the problem along with the concepts required to program for that problem and help the students to code that problem.
- In other words, students will be solving one problem with the help of the teacher during the lab session.
- Based on this practice, the student is expected to solve atleast one or two problems on their own in the subsequent sessions.
- While practicing, students can get the doubts cleared while solving the problems inside the lab.

CONTINUOUS ASSESSMENT PROCESS(CAP)

Component	Number per item	Max.Marks per item	Weight per item in CAP	Total Weight in the CAP
Periodic Assessment Test (PAT)	04	10	8 %	32 %
Consolidated Assessment Test (CAT) (CAT)	2	50	14 %	28 %
Final Assessment Test (FAT)	2	50	20 %	40 %
Bonus Assessment Test (BAT)	1	100	10%	10%

After giving a hands-on session on certain concepts of problem-solving and the related constructs of the programming language during the practice sessions, to test whether the students have understood that concept/construct, teachers will load a problem in the portal, to be attempted by the students independently.

- The IPS questions which the teachers upload for their slot, can be of any type such as code-test, debugging, Multiple-choice questions, any other method of testing or a combination of all these etc.

- The IPS questions will cover the concepts of Problem solving skill and the syntax/semantic of the constructs of the programming language, as mentioned in the session plan

- The purpose of customising IPS to the requirements of the class is to create an interest as well as confidence initially, among the students to take up the problems of higher level of difficulty further.
- Duration of IPS will be 30 minutes . Teachers can extend the duration of IPS based on the questions posed by them.
- Problems of IPS will be loaded in the portal by the respective teachers for their slot.
- Ten In-lab Practice Sessions (IPS) are planned in the session plan. The concepts which are to be tested in each IPS is mentioned in the Session plan of cse 1002-Winter2020. Week during which the respective IPS has to be conducted is given in the later part of this 'quick reference'.

- Of the ten IPS, if the teachers wish, they can combine a few IPS, such that a minimum of six IPS is conducted in the semester.
- Teachers can combine the IPS in a such a way that the order of IPS is not changed.
- If a student misses the IPS for some valid reasons, teachers can fix a date/time for all the missed-out students and conduct the IPS inside the lab itself, but before the corresponding PAT.
- IPS should be submitted in the presence of the teachers only.
- The main aim of IPS is to make the students practice, during which students can refer any materials, discuss with the teachers etc. Hence, no marks are awarded for the IPS.

- All the teachers are expected to conduct a minimum of six IPS and a maximum of 10 IPS.
- Every PAT is preceded by a few IPS.
- A minimum of one IPS should be conducted before PAT1. Similarly, A minimum of one IPS during the periods: PAT1-PAT2 (ie., the period after PAT1 and before PAT2), PAT2-PAT3, PAT3-PAT4
- A minimum of one IPS should be conducted after PAT4
- In total, a minimum of six IPS should be conducted during the semester.
- If the teachers wish, they can combine two or three IPSs that precedes a specific PAT,and conduct as one IPS. For example, If a teacher combines IPS1 & IPS2, the combined IPS (IPS1-2) shall be conducted during the week in which IPS2 is scheduled. If IPS3&4&5 is combined and the combined IPS (IPS3-4-5) shall be conducted during the schedule of IPS5

PERIODIC ASSESSMENT TEST (PAT)

- The concepts practiced in IPS will be tested in Periodic Assessment Test. Teachers will upload the questions for PAT for their slots.
- There will be a total of FOUR PATs; Time duration of PAT is 30 minutes; Max marks for each PAT is 10 marks; Weight of each PAT in the over all score is 8%. Hence, there will be a 32% weight for all the four PATs.
- PAT is like an examination only; Teachers will play the role of invigilators during the PAT.
- Schedule of PAT will be given in advance. All the teachers are requested to conduct the PAT, during any lab session in the scheduled week.

- Problems given for any IPS should not be given for PAT. Students taking PAT should be exposed to a new problem, which they have not encountered during the semester.
- PAT will not be conducted again for the students who have missed it(for valid or invalid reasons).
- Those missed-out students can make use of the Bonus Assessment Test in which one can top-up the score to a maximum of 10%

CONSOLIDATED ASSESSMENT TEST (CAT)

- There will be a total of two Consolidated Assessment Test (CAT1, CAT2). Weight for each CAT is 14%
- In the CAT, students will log in to the portal, download the problems, solve the problem, by following all the processes involved in the 'Problem Solving Process'
- Accordingly, the student will submit the solution, within the 100 minutes of the lab sessions.

- Problems will be based on the concepts covered in the IPS that just precedes the CAT. The details of the concepts covered can be had from the Session Plan.
- Without practicing the problems of the Practice Sheet, it will be difficult for the student to attempt the questions of the assessment sessions.
- Questions for the CAT shall include Multiple choice questions (10 marks) debugging (10 marks) , code test (a maximum of two problems : one easy level , one difficult level- 30 marks)

- Problems will be from from a centralized pool, with different problems for different students.
- No discussions are allowed during the CAT.
- Teachers will play the role of invigilators.
- Exact Dates of the conduct of CAT will be announced within three weeks of the commencement of the course.
- CAT will not be conducted again for the students who have missed it(for valid or invalid reasons)
- Those missed-out students can make use of the Bonus Assessment Test in which one can top-up the score to a maximum of 10%

- There will be two Final Assessment Tests - FAT1 & FAT2
- FAT2 will be conducted in the last lab session of the semester
- FAT1 will be conducted in the penultimate lab session (lab session just before the last lab session)of the semester.
- Duration of each FAT is 100 minutes; Maximum Marks for each FAT is 50.
- Weight for each FAT in the total assessment is 20% - Total weight for FAT is 40%

- Student will be posed with a problem related to engineering/social domains, which requires a good amount of problem solving skill as well as the coding skill.
- In each FAT, a single problem has to be solved and submitted with in the lab session itself.
- FAT will not be conducted again for the students who have missed it(for valid or invalid reasons)
- Those missed-out students can make use of the Bonus Assessment Test in which one can top-up the score to a maximum of 10%

PRACTICE PROBLEM SHEET

- Practice Problem Sheet (PPS) is a list of problems to be practiced by the students, which will be uploaded in the portal in the first week of the semester . It will be available till the end of the semester.
- There will be a total of eight Practice Problem Sheet (PPS).
- Every PPS will contain a set of problems, covering the concepts as mentioned in the session plan.
- Based on the practice sessions inside the lab, student is expected to work on the problems of the PPS off the lab session and submit them electronically.
- In case of any difficulty in solving the problems, the students are encouraged to discuss with the teachers.
- The teachers will evaluate the submissions and give the feedback to the students through the the remark column available in the evaluation page of the portal.

- Solving the PPS independently will give more confidence to the students to take up the problems of CAT/FAT
- Scores obtained in the PPS will not form part of the Continuous Assessment Process.
- Solving the PPS will help a lot, in attempting the problems of CAT/FAT.
- In one way, problems in PPS will serve the purpose of the so called 'model/sample problems' for CAT/FAT.

BONUS ASSESSMENT TEST (BAT)

- If a student misses out any PAT/CAT/FAT for any reason (valid or invalid), the missed out PAT/CAT/FAT will not be conducted again.
- Bonus Assessment Test is a process to compensate the loss due to the missed out test.
- A problem sheet (with 10 problems) called 'Bonus Problem Sheet' will be uploaded in the portal three weeks before the end of the semester.
- Bonus problem sheet will be a unique one for every student. No two student will get the same 'Bonus Problem Sheet'.
- Students will solve the problem in the portal and submit the code before the last instruction day of the semester (10th April 2020). Total weight in the continuous assessment process for BAT is 10%.
- Through BAT, students can score to the level of 10% in the continuous assessment process

SCHEDULE OF IPS/PAT/CAT

Week	Name of the component
Dec 16- 20	IPS I
Jan 6 - 10	IPS II
Jan 13- 17	PAT I
Jan 27-31	CAT I
Feb 3- 7	IPS III
Feb 10-14	IPS IV
Feb 17-21	IPS V, PAT II
Feb 24 - 28	IPS VI
Mar 7-11	IPS VII, PAT III
Mar 16-20	IPS VIII
	Upload of BAT
Mar 23-27	IPS IX, PAT IV
Mar 30-April 3	IPS X
April 6-10	CAT II, FAT I, FAT II
April 10	Last date for
11.59 PM	BAT Submission

- Actual date of IPS will be intimated to the students by the respective teachers.
- PAT I/PAT II/PAT III/PAT IV /CAT I will be conducted in the last lab session of the week in which those are scheduled.
- CAT II will be conducted in the first lab session of the week April 6-10.
- FAT I will be conducted in the penultimate lab session of the semester (That is, in the second lab session of the week April 6 -10).
- FAT II will be conducted in the last lab session of the semester (That is, in the third lab session in the week April 6-10).

ELIGIBILITY FOR FAT I & FAT II

A minimum of 75% of attendance at the end of April 3, 2020.