



INTRODUCTION TO ICT (IC101)

Duration: 120 min (15:00 – 17:00 hrs.)

Autumn Semester 2021-22

Total Marks: 50

Mid-sem Exam (3 January, 2022)

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This is a story of a family of four, Shreya who is 19 years old, her parents and her 16 years old younger brother. They live in Saket, New Delhi. COVID-19 pandemic has made their life miserable. Despite getting vaccinated it is advised not to go out unless it is too important. Work-from-home (WFH) has been put in practice effectively for last 2 years.

Shreya is a student of BTech (ICT) in DA-IICT, Gandhinagar. She has been attending her regular engineering classes from home. Her brother studies in DPS R.K. Puram school. He has also been taking online classes. Her father works for an MNC company in Gurugram. He heads the marketing operations of the company. Unfortunately because of his senior and quite responsible position he cannot avoid travel. Occasionally he air-travels to attend some Board Meetings. Despite taking so much precautions all four of this family got infected in May 2021 during 2nd wave of this pandemic. Thankfully all got cured in due time except Shreya's father had to get admitted in the hospital for over 10 days. Shreya's mother does not like her husband's air travels, but at the same time cannot force him to strictly stay at home.

Shreya being an upcoming engineer understands this tricky and risky situation. So she decided to give a solution to the problem. She has asked her father to promise not to sit in the waiting lounge of the airport among the crowd at the boarding gate. She has enforced a very strict social-distancing rule for her father and asked him to carry his own chair with him whenever he travels. This is quite funny!

Now think as an engineer.

Shreya has designed an attachment in the trolley briefcase of her father which will become a chair if extended and can be folded back in normal situation. Meaning, when her father walks-in to enter the airport, it is perfectly a normal trolley bag. After check-in and passing through the security gate, when he should wait for the boarding to start, he goes to a corner area, unfolds the extension designed and attached to the bag by Shreya, a chair type extension comes out of the trolley bag, he sits on that while waiting for the boarding announcement. On the announcement, he folds it back, and carries the bag just as a normal trolley bag and moves in the aircraft.

This is how he keeps himself safe even on journey. Shreya's family is happy and tension-free, so far. Touch wood!

This is how Shreya has used her learning in practical way.

Question: Assume that you are Shreya. Design a 3D model of this Trolley Bag using AutoCAD indicating all necessary dimensions with appropriate unit.

Hint (you are supposed to submit the answer in two parts):

PART 1

TIME LIMIT: 45 MIN

1. Draw the first image of this Trolley Bag that emerged in your mind immediately after reading this story above. Output should be a rough sketch of this Bag. Obviously there should be two drawings:
 - a. Trolley Bag in folded (or normal) condition, the bag with which Shreya's father enters the airport
 - b. Trolley Bag in un-folded condition on which her father sits while waiting at the airport near boarding gate
2. Now draw a final sketch of the proto-design (I suggest to use pencil and paper for this) of this folded and un-folded Trolley Bag (refer 1a and 1b, respectively) placing all necessary parts of this designer bag which you can best visualize what Shreya has designed and fabricated for her father. You have to ultimately draw it in your final 3D model in AutoCAD.
3. Write the explanation for all these "necessary parts" and their placement in the final sketch in a word file or in a text file, step-by-step. While doing so you may find it necessary to change the sketch that you have drawn (in step #2). You are allowed or rather encouraged to make those modifications in this sketch.
4. Write those modifications also in the above .doc or .txt file (of step #3) which you have done in the first version of the sketch.
5. Now name your file of step #3 as <YOURID>.doc or <YOURID>.txt. For example, if your ID is 202101007, the name of the file MUST be 202101007.doc or 202101007.txt.
6. Switch ON your mobile phone (if it is not already ON), take the picture/photo of your sketch of **step #2 (take picture of both the sketches, i.e., a) folded and b) un-folded Trolley Bag; as a single image)** and transfer it to your laptop using the data cable that you are asked to keep as an accessory. Or by any other means, whichever is convenient, such as emailing it to yourself.
7. Now name this transferred image of the sketch (it must strictly be a hand drawn sketch with all components and dimensions shown properly) as <YOURID>.jpg or <YOURID>.png (whichever format your phone produces). For example, if your ID is 202101007, the name of the file MUST be 202101007.jpg or 202101007.png.
8. **Submit these two files, i) <YOURID>.doc or <YOURID>.txt & ii) <YOURID>.jpg or <YOURID>.png to the MOODLE folder's location created for the exam submission. This location is "Mid-Sem Exam Submission-Part 1".**
9. There will be two warnings for the submission time, first will be after 30 min, and second will be after 40 min.

PART 2

TIME LIMIT: 60 MIN

1. After submission of Part-1 (submission permission shall automatically close at 3:50 PM), you start your AutoCAD.
2. Draw the sketch that you have submitted just now using the same dimensions, placing of parts etc. As far as possible your final drawing file should be a replica of the sketch that you submitted.
3. **Marks will be deducted if both differ from each other.**
4. While drawing on AutoCAD, you may realize that you could design this Trolley Bag better if allowed to modify the sketch. I encourage you to make those modifications. But you have to again mention those modifications in a new .doc or .txt file. Give proper reason and logic why you are modifying and what is the modification.
5. Once you are done, name your AutoCAD generated drawing file as <YOURID>.dwg and the new .doc or .txt file as <YOURID-1>.doc or <YOURID-1>.txt file. For example, if your ID is 202101007, the name of the file MUST be 202101007.dwg and 202101007-1.doc or 202101007-1.txt.
10. **Submit these two files on MOODLE folder with name "Mid-Sem Exam Submission-Part 2".**
11. Note: The second file, i.e., <YOURID-1>.doc or <YOURID-1>.txt, is necessary only in case you have modified your hand drawn sketch of Part-1 while drawing the design in AutoCAD. Else it is not required.
12. Submission shall close automatically at 4:50 PM.

Hope you have enjoyed this exam.

No answer is a wrong answer. You will be graded for your imagination and effort to give your imagination a shape.