COL100: Introduction to Computer Science

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Objectives of Course

- Basic understanding of a computer system
- Algorithmic thinking and problem solving
- Knowledge of the C programming language
- Advanced programming concepts
  - Functions
  - Structures
  - Unions
  - Recursion
- Practical skills
  - Linux

Instructors

- Vinay J. Ribeiro
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  Research Interests: Computer and
  Network Security, Internet of Things
  (IoT), Wireless Networks

- Rahul Garg
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  Research Interests: Brain Imaging and
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    Machine Learning and Big Data Analytics,
    IT for Society

Grading System at IIT Delhi

Letter Grade	Points	Meaning
A	10	Outstanding
A-	9	Excellent
B	8	Very Good
B-	7	Good
C	6	Average
C-	5	Below Average
D	4	Marginal
E	2	Poor
F	0	Very Poor

Allowed to Repeat Major Exam, Conversion to D allowed

Repeat Course

- Grading is not always relative: If all students do well, all can get high grades

Grading Components

Component	Weight %
Minor 1	15
Minor 2	15
Major Exam	30
Surprise Quizzes	10
Programming Assignments and Lab Surprise Exams	30

- Exams: Two minors and one major
- Surprise Quiz: In-class exam conducted without advance notice (don't bunk class)
- Programming assignments: Will have deadlines, upload before deadlines (server will shut off exactly at deadline, plan ahead)
- Lab surprise exam: surprise programming exams in lab session
- Re-exams/quiz: only for those with valid medical certificate from IIT Hospital (unless exceptional circumstances: ex: went home and got sick)

E and F grades

- E grade: Marks between x% and 30% (x usually 20%)

- If awarded E grade, student can write a re-major exam within 1st week of next semester

- If replacing old major marks with re-major marks gives new total > 30%, then grade D awarded. Otherwise E retained

- F grade: less than x% marks

- Note: E and F are both Fail grades and student needs to repeat the course

Exams

- Always come to the minor and major exams, and lab sessions, with your IIT Delhi ID card

- If you are sick and cannot attend, then get a certificate from the IIT Hospital clearly stating that you were not in a position to take the exam

- Certificates from other hospitals not allowed, unless Dean Academics makes an exception

- Do not email the certificate to the instructor (we cannot handle such flood of emails)

- Show up for the re-exam with your original medical certificate

- Dates for re-exams will be announced

- Note: Re-exams will be harder than original exam, since conducted at a later stage (more syllabus covered, more time)

Showing Answer Scripts

- Time(s) and venue for showing answer sheets will be announced

- Student must himself come and check the answer script at any one of the times announced

- Student can point out totaling mistakes

- If asking for a problem to be regraded, student must state clearly by writing on the 1st page of the answer scropt, which problem needs to be regraded and why

- Time and venue for handing out regraded scripts will be announced

- Minor scripts can be retained by students. However, Major scripts will be kept by the instructor

Grading

- Grades will be assigned based on total marks of student
- Cutoffs for successive grades will be decided by instructors after seeing overall performance of the class
- Dean Academics has to approve grades
- Grading will not be purely relative, that is based on class percentile (e.g. top 10% of class get A, next 10% get A- etc.)
- Grading will not be purely absolute, that is based on pre-defined cutoffs (e.g. all above 80% get A, 70 – 80% get A-)

- Remember: You are all outstanding having cracked JEE
- Trap of class position: Note that 50% of students have to be in the bottom half of class! Don't use class position to evaluate your capabilities!
- Rather evaluate how much you have learned from the course. Only that matters in the long run.

Labs

- Location: LH 502-505

	1 – 3pm	3 – 5pm
Monday	G13-14	G7-8
Tuesday	G15-16	G9-10
Wednesday	G17-18	G1-2
Thursday	G19-20	G3-4
Friday	G11-12	G5-6

- Each lab session will have 2 teaching assistants (TAs)
- Assignments for lab sessions will be given
- Some assignments will be only for practice and not graded
- Will use moodle (https://moodle.iitd.ac.in/login/index.php) for posting assignments

Additional Help

- Piazza: Discussion forum for course

- Signup at: piazza.com/iit_delhi/fall2017/col100

- Access code: col100_iitd

- Ask any doubts you have on any topic related to the course on this forum

- Instructors, TAs, or classmates will reply

- TA help in lab: Feel free to ask doubts to TAs in the lab. However, make an attempt to find answers yourself first

- Extra help sessions can be arranged based on the need

- Note: Final year students doing COQ course may offer help sessions as part of the COQ course (details will be announced later)

Communication

- Email List: COL100@courses.iitd.ac.in
- Check your iitd email regularly for course announcements
- Contact your TA by email only, not on their mobiles, for administrative doubts
- For technical doubts about the material in the course, use Piazza

Copying Policy

- Why is copying assignment, exam problem bad?

- Can we find if you have copied? YES

- Tools: Moss (measure of software similarity), turnitin (for other documents)

- If caught copying, both the person who copied and the person whose assignment was copied will get zero, not just for that particular problem, but for entire component

- Example: Two people copy assignment 1. Both will get zero for ENTIRE lab assignment component (30% down the drain)

- Example: Person copies problem #2 in Minor-1. He will get 0 for entire Minor-1 exam (15% loss)

- If person caught copying a second time, he will get an F grade

- Advice: Keep your laptop password protected (especially if on a bathroom break). Don't share any login passwords with friends (or enemies). Excuses such as "he copied although I didn't show" will not be accepted.

Suggested Reference Books

- *How to Solve it by Computer*, R. G. Dromey, Pearson Education India, 1st Edition

- *The C Programming Language*, B. Kernigan & D. Ritchie, 2nd Edition, Pearson Education India

- *Let us C*, Y. Kanetkar, 15th Edition, BPB Publications

- You are encouraged to learn things by browsing the Internet. However, you are not allowed to cut and paste solutions to assignments from the Internet.

- Doubts, Questions??

Example of Algorithm

- Count the number of students in this class

- Step 1: Everyone stand up with number 1 with you
- Step 2: Pair with one other person standing
- Step 3: Exchange your number with your partner and add
- Step 4: Partner with smaller height sits down and relaxes
- Step 5: If there is a person other than you standing
  - then go to step 2
  - else go to step 6
- Step 6: Report your number to the instructor