

Sem 4 + Intern Prep Talk

By CSEA

Semester – IV

Course No	Course Name	L	T	P	C
<u>CS205</u>	Formal Languages, Automata Theory and 3 Computation		0	0	6
<u>CS207</u>	Design and Analysis of Algorithms	3	0	0	6
<u>CS223</u>	Computer Architecture and Organization	3	0	0	6
<u>CS224</u>	Hardware Lab	0	1	4	6
<u>CS245</u>	Database Management Systems	3	0	0	6
<u>CS246</u>	Database Management Systems Lab	0	0	4	4
HS1xx	HSS Elective -I Level-I	3	0	0	6
		15	1	8	40
SA3xx	Students' Activity Course-III	0	0	2	0
	Minor-II	3	0	0	6

CS205 Formal Languages, Automata Theory and Computation

- In this course you all will be taught about fsms, dfa, nfa, e-nfa and turing machines.
- Will be taught how a computer implements them.
- Will also be familiarised with formal definitions of alphabets, grammars, cfg etc.
- This is a proof heavy course.(Like real analysis)
- Not that important unless interested in research or higher studies

CS207 Design and Analysis of Algorithms

- Important Algorithms will be taught in this course. Eg: Kruskal, prims, Dijkstra etc.
- You will be taught how to analyse different types of algorithms. Like how to prove the time complexity, the correctness, the termination of the algorithm etc.
- The above points also help in interviews during algorithm's analysis in various aspects.

CS223 Computer Architecture and Organization

- The second half of the course is of more importance and is also sometimes asked during interviews - IF you mention it and the interviewer is experienced.
- In the next semester you will be studying Operating Systems(important course) and COA acts as a prerequisite for that course.
- Helps in understanding how modern CPU and memory/cache works.
- The structure of the course is well balanced and the provided materials would be sufficient.

CS224 Hardware Lab

- It is a very hands on lab
 - verilog language basics are taught
 - basic problem statements
 - Short duration to code
 - present and explain to TA
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- easy if you pay attention and have theory knowledge
 - exams are short duration and relatively large number of questions
input test cases are acc to your roll num.

CS245 Database Management Systems

- Very straightforward theory
- SQL part is basic and becomes little complex towards the end, so better to pay attention throughout
- Non SQL part is very theoretical in nature and is of high importance at the industry level and interviewers expect that you understand that part clearly.

CS246 Database Management Systems Lab

- Straightforward questions
- Lab duration was 4 hours and usually labs took that long
- Need good grip over SQL

CP

- Directly helps in coding rounds
- You can talk about CP in interviews too - which usually impresses the interviewer

Projects

- Demonstrate that you possess some dev skills
- Proof that you know some specific framework/language
- Topic of conversation in interviews
- Good projects make you stand out and boost your CV

Thank You

All The Best