

Data Structures & Algorithms

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Logistics



- **Web:** www.cse.iitd.ac.in/~subodh/courses/COL106
 - **Also:** moodle.iitd.ac.in
- **Textbook:** Data Structures and Algorithms in Java
 - **by Goodrich & Tamassia**
- **Language:** Java
- **Grading on 100**
 - **Minors 11 each, Major 23**
 - **Six assignments: 30**
 - **Keys to success**
 - Don't cheat
 - Start early, Don't fall behind, Seek help from TA
 - Respond to TA email, Use IITD email
 - **Class participation: 10**
 - **Programming test: 15**
- **TAs:** On course website



Class Participation

- **Daily review questions**
- **Seek assistance and attend classes**
 - 60-75%: 3
 - 75-85%: 4
 - 85+%: 5
- **Extra credit +5**
 - Mentor students that seek assistance
 - Prepare videos

Attendance on Timble

Academic Honesty



- Solve programming assignments entirely on your own.
 - Neither take, nor show, give or otherwise allow others to take your program code, solutions, or other work.
 - If your submission matches something, you are responsible
 - Unless *specifically instructed*, do not to use any line of code from any source (including but not limited to books, the Web, your friends etc). The **only** legitimate code is that you thought of yourself and typed in by hand to a simple text editor.
- Falsifying program output or results is cheating.
- Java environments (jcreator, javabeans..) are prohibited.



Help & Grading

- Office hours of your TA and instructor on course website
- Email your TA
 - Cc: col106admin@cse.iitd.ac.in
 - Emails before 5pm should elicit a response the same day
 - Next day otherwise
- ** Use COL106 in subject in emails to me **
- Assignments to be submitted on *moodle.iitd.ac.in*
 - Duplication checking scripts
 - For all matching submissions:
 - -10 marks; F on second violation
 - Grading scripts (follow instructions exactly)
 - Viva by TA for selected students
 - Respond to call for viva within 24 hours
 - Failure to respond or explain code => 0



Data Structures

Collection of data items and operations

- INSERT
- DELETE
- FETCH
 - FIRST/LAST
 - NEXT/PREVIOUS
 - NORTH-WEST
 - BEST/WORST
- ENQUIRE
 - MORE-STATS

- Types of Data items
- Ways to identify an item
- Relationships between items
- Behavior of Data structure



What you should learn

- **Argue about correctness and efficiency**
- **Data-centric focus**
 - **Efficient data organization and operations**
- **Data abstraction**
 - **Separate behavior and implementation**
 - **Re-use in similar situations**
- **Common algorithms**
 - **Applications**
 - **Build up a bag of tricks**