



# M.Tech.(CDS) Admissions 2018

## Pre-interview Familiarization

8 May 18



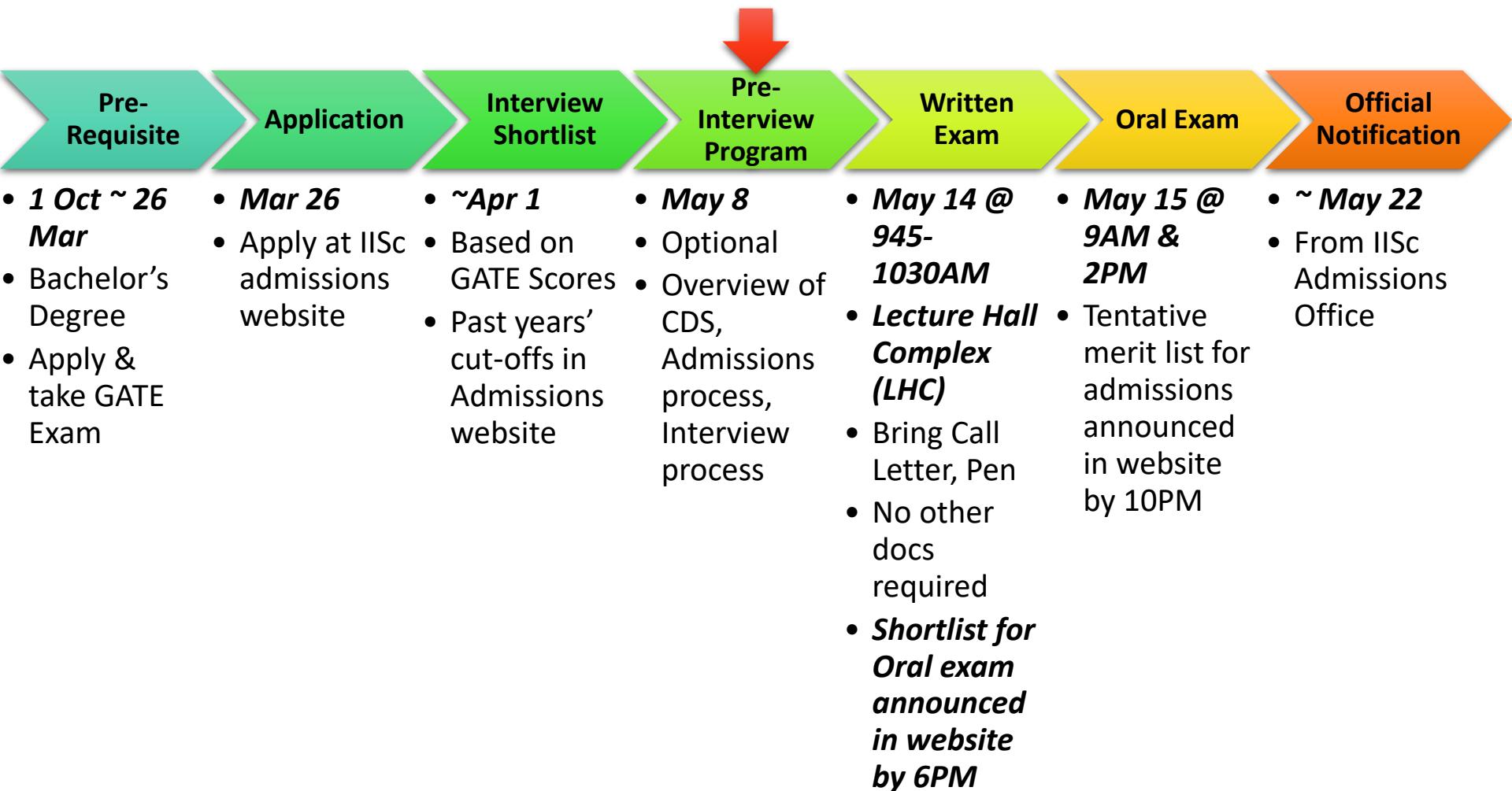
# Website has up to date Info.

- <http://cds.iisc.ac.in/admissions/course-degrees/>

The screenshot shows the CDS website with the following details:

- Header:** CDS.IISc.ac.in | DEPARTMENT OF COMPUTATIONAL AND DATA SCIENCES | INDIAN INSTITUTE OF SCIENCE, BANGALORE
- Navigation:** ACADEMICS, COURSES, RESEARCH, PEOPLE, ADMISSIONS, OPPORTUNITIES, RESOURCES
- News Ticker:** [ 3 Mar 18 ] Prime Minister's Research Fellowship (PMRF) scheme @ CDS
- Breadcrumbs:** Home > Admissions > Course Degree Admissions
- Section:** Course Degree Admissions
- Section Title:** M.Tech. (Computational & Data Science) Admissions, 2018
- Links:** Program Flyer, Sponsored Fellowships Available, Download Admissions Brochure [PDF]
- Section:** Important Dates:
- List:**
  - Applications Opening: **1 February, 2018** (Online at <http://www.iisc.ac.in/admissions/>)
  - Application Deadline: **26 March, 2018** (Online at <http://www.iisc.ac.in/admissions/>)
  - **Pre-interview Familiarization/orientation towards MTech(CDS):** Optional session, open to everyone.
    - **Date & Time:** May 8, 2018 (12 PM). **Venue:** Seminar Hall (102) of CDS, IISc, Bangalore.
    - **Written Test:** **14 May, 2018** (Time: 9:45 AM - 10:30 AM **Venue:** Central Lecture Hall Complex, IISc, Bangalore)
      - Results of candidates selected for Oral Interview to be posted in this webpage by **14 May, 2018, 6PM**
    - **Oral Interview:** **15 May, 2018** starting at 9AM at CDS, IISc, Bangalore
    - **Tentative Merit List will be posted here on 15 May, 2018, 10PM**
- Right Sidebar:** RECENT NEWS (Pre-Interview Familiarization Program for Admissions, 2018; Interview call letters for those applied to CDS programs; M.Tech. (Computational & Data Science) Admission Brochure – 2018 (interview procedure/details); CDS Computational Science (CP) Research Admissions)

# Admissions Process





# Written & Oral Exam Syllabus

- Tests ability to perform well in our inter-disciplinary degree program
- **Foundations**
  - ▶ Engineering Mathematics at Undergraduate level
    - *e.g. Calculus, Geometry, etc.*
  - ▶ Linear Algebra & Matrices
    - *e.g. Matrix operations, Eigen values, etc.*
  - ▶ Probability and Combinatorics
    - *e.g. Permutation & Combinations, Conditional Probability, etc.*
- **Programming**
  - ▶ Basic Programming
    - *e.g. Loops, Control flow, conditions, ordering, etc.*
  - ▶ Data Structures (arrays, matrices, etc.)
    - *e.g. Array and matrix operations, etc.*



# Written Exam

- 10 questions, 45 minutes
- Short answer types
  - ▶ Brief final answers in front page
  - ▶ Rough work to be attached in separate sheets
- Bring your pen
- Use of Calculators, Phones, etc. not allowed



# Written Exam

## ■ Sample Questions from Past

Combinatorics

A pair of friends attend a party with  $n$  people, where all of them sit around a round table for a dinner. Assuming that all seating configurations are equally likely, what is the probability that the friends sit adjacent to each other.

If the relationship of  $y$  with respect to  $x$  is  $y = ax^3 + bx^2 + cx + d$ , what are the values of  $a, b, c$  and  $d$ ?

Engineering  
Math.

$y$	6	11	18	27	38
$x$	1	2	3	4	5

Given that the area of a triangle is  $\sqrt{3}$ , what is the minimum value of its perimeter?

Determine the expected output of the following part of a program operating on a square matrix  $A$  of dimension  $n$ .

```
for (i = 1, i++, i ≤ n) do
  for (j = 1, j++, j ≤ n) do
    A[i,j]=A[j,i];
  end
end
```

Programming



# Written Exam

- **Monday May 8**
- Reporting time **9:30AM**
- Venue: Central Lecture Hall Complex (LHC)
  - ▶ <https://goo.gl/maps/ps6WdtpcF542>
- Exam held between **9:30-10:45AM** for **45 mins**
- Written exam results posted on CDS M.Tech. admissions website by **6PM**



# Oral Exam

- Students shortlisted or oral exam based on written exam performance
- Same syllabus as written exam, but more in-depth
- ***Also has questions from subjects in UG major***
  - ▶ E.g. Algorithms form Computer Science UG, Fluid Mechanics for Mechanical Engineering UG
- ~3-4 questions, ~15-25 mins
- Detailed *viva voce* in front of a faculty panel
  - ▶ Use whiteboard to explain your answers
  - ▶ Evaluates your ability to think, Not memorize!



# Oral Exam

- **Tuesday May 15**
- **Two sessions**
  - ▶ Forenoon: **9AM-1PM**
  - ▶ Afternoon: **2PM-530PM**
  - ▶ Shortlisted students from written exam will be asked to report to **one** of these oral exam sessions
- **Two panels**
  - ▶ **CDS Room 308**
  - ▶ **CDS Room 309**
  - ▶ Shortlisted students will be asked to report to **one** of these panels
- **Tentative merit list for admissions posted by 6PM on website**



# Takeaways

- Be curious, be pro-active
  - ▶ Post-graduate program
  - ▶ Self-learning, online resources
  - ▶ Talk to seniors, peers, discuss
- Think research
  - ▶ Top University in India! *Competitive!*
  - ▶ Pick project dissertation topic early
  - ▶ Consider upgrading to Ph.D. program