CS101: Computer Programming and Utilization, Spring 2023

Language taught: C/C++ (mostly C, with basics of C++)
  - No background knowledge in programming assumed

Team:
  - Instructor: Mythili Vutukuru (mythili@cse.iitb.ac.in)
  - Course managers:
    - Firuza Karmali (firuza@cse.iitb.ac.in)
    - Nagesh Karmali (nags@cse.iitb.ac.in)
  - TAs (UG and PG students)
SYLLABUS

- Introduction to C programming
- Variables and Operators
- Structured Programming (if-else, while, for, switch, ..)
- Functions
- Arrays
- Pointers and strings
- Structures (time permitting)
- Basics of C++ and classes (time permitting)
SCHEDULE

- **Lectures:**
  - Section D1: Wed/Fri 11:05-12:30, LA 202
  - Section D2: Tue/Fri 2:00-3:25, LA 202

- **Labs:**
  - Section D1: Thu 8:30-10:30pm, SL1, SL2, SL3, Basement lab (New CSE Bldg)
  - Section D2: Tue 8:30-10:30pm, SL1, SL2, SL3, Basement lab (New CSE Bldg)
  - Minor changes in a couple of lab slots due to public holidays (see detailed schedule)

- **Help sessions:**
  - Help session by TAs: Mondays 5:30-7:30 pm, SL3
  - Help session by Firuza and Nagesh: Wednesdays 5:30-6:30pm, CC 215 (New CSE Bldg)
  - Instructor office hours: immediately after lecture slot, or by appointment

- **Exams:**
  - Quizzes on Saturdays or during midsem/endsem week
  - Lab quizzes Mon/Tue/Thu/Fri 8:30-10:30 pm during lab quiz week
GRADING

- **Weekly Labs: 10%**
  - Many practice problems released every week, solve and submit any 2 programs
  - Marks assigned based on attendance and light-weight grading based on self-certification
  - Mainly for programming practice with TA help
  - Can work on your own laptops or the lab machines

- **3 lab quizzes (one every 4 weeks): 30%**
  - Proctored programming tests on the lab machines (no network connectivity)
  - Grading based on demo and viva with TA

- **4 pen-and-paper quizzes (one every 3 weeks): 60%**
  - 2nd quiz during midsem week, 4th quiz during endsem week

- All exams are **cumulative** (covers all concepts taught up to that point)

- One **makeup exam** at the end of semester for theory and lab, only for valid reasons
MOODLE FOR COURSE MANAGEMENT

- All **study material** related to the course will be on Moodle
  - Lecture slides and sample code discussed in class
  - Practice problems for weekly labs and exams

- All **logistics and related information** will be on Moodle
  - Student to TA mapping, lab seating arrangement
  - Seating plans and other instructions for all exams

- All **course grading** will be done via Moodle
  - Code in lab quizzes to be uploaded on Moodle
  - All marks and feedback for all exams via Moodle

- **Announcements:** all course announcements will come via Moodle

- **Discussion forum:** ask doubts on discussion forum, respond to others doubts
  - No individual emails to instructor or TAs for doubts about course content
  - For confidential matters, please email instructor
TEXTBOOK

- “C How to Program: With an introduction to C++” by Deitel and Deitel
- Course will follow textbook very closely
  - Lectures, code examples discussed in class
  - All practice programming questions for weekly labs
- All code from the book is here (also on Moodle) https://github.com/pdeitel/CHowToProgram8e/archive/master.zip
ROLE OF THE TA

- One PG TA assigned for every 14 students, one UG TA for every 28 students
  - Some TAs as backup to cover for TAs on leave

- Weekly lab sessions (one per week)
  - Help students with practicing programming questions
  - Clear any other doubts in the course content
  - Update attendance-based grade on Moodle for weekly labs

- Grading lab quizzes
  - Conduct demo and viva after lab quizzes (during subsequent regular lab hours)
  - Upload marks and feedback on Moodle

- Informal help session to clear doubts from lectures every week (3-4 TAs per week)

- Invigilation and grading of pen-and-paper quizzes, handling “cribs”
ROLE OF THE INSTRUCTOR

- Lectures: main point of contact with instructor
  - Please ask questions during/after class

- Weekly labs:
  - TA is main point of contact, but instructor will be available briefly

- All exams: instructor is available, but avoid asking for clarifications

- Moodle discussion forum: available to clear doubts online

- Office hours: come by for one-on-one discussions

- Email: only for personal/confidential/emergency/serious issues

- Please do not hesitate to reach out to instructor any time
ROLE OF COURSE MANAGERS

- CS101 Course Managers: Firuza and Nagesh
- TA management
  - Main point of contact for all TAs in the course
  - Maintain TA-student mapping, seating arrangement for labs
  - Tracking TA attendance and availability
- Handling all logistics of the course
  - Ensuring smooth conduct of all lectures, labs and exams
- Helping instructor with course content, exams, grading
- Helping students with course content via office hours, Moodle discussion forum
YOUR ROLE AS A STUDENT

- Attend all lectures and follow along, ask questions, be proactive
- Attend your weekly lab session
  - Ask TA for help if you are facing difficulties
  - Help others in your group/lab, especially if you have prior programming experience
  - Discussions encouraged during weekly labs
- Attend help sessions and office hours as required
- No copying code or any other unfair means during exams
  - Cheating will be dealt with strictly
  - Exams should be easy to attempt if you follow lectures and labs sincerely
- Group with best aggregate performance will get a surprise gift at the end
  - Please help your peers learn!
Students and TAs to always ensure marks on Moodle are correct and consistent

All quizzes will be for $2 \times W$ marks, where $W$ is weightage of quiz in final grade
- Lab quizzes will be for 20 marks each
- Pen-and-paper quizzes will be for 30 marks each
- Please ensure that marks updated on Moodle immediately after any changes/cribs
- Your final course total is simply $(\text{total marks on Moodle} / 2)$

Each weekly lab will be for 2 marks each
- Students can attempt the lab questions beforehand, but mandatory to attend lab session once a week
- Upload code on Moodle for at least 2 programs per week, and self-certify to TA that lab is complete before you leave (you can leave early if you are done)
- TA will assign grade of 0, 1 or 2 for lab submissions based on checking student code at high level
- If absent due to unavoidable reasons, contact TA over email and show progress later (before next week)
- Total weekly lab marks on Moodle = 2 marks for each of 9 weekly labs + 2 marks bonus for those with full lab attendance = 20 marks = 10% weightage in final grade
**Semester Starts**

- **Holi**

**Gudi Padwa**

**D2 Lecture**

**D2 Lab**

**D1 Lecture**

**D1 Lab**

**D2 Lab**

**QUIZ 1**

**LAB QUIZ 1 (MON, TUE, THU, FRI)**

- **D1 Lecture:** 11:05-12:30
- **D2 Lecture:** 2-3:25pm
- All lectures in LA202

- **All labs:** 8:30-10:30pm
- Labs in new CSE Bldg
<table>
<thead>
<tr>
<th>SUN</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4 Mahavir Jayanti</td>
<td>5D1 Lec D2 Lab</td>
<td>6</td>
<td>7 Good Friday</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11 D2 Lec D2 Lab</td>
<td>12 D1 Lec</td>
<td>13 D1 Lab</td>
<td>14 D1 Lec D2 Lec</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>17 D2 Lec (Tue)</td>
<td>18 Midsem Start</td>
<td>19 Midsem Start</td>
<td>20</td>
<td>21</td>
<td>22 Id-ul-Fitr</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25 Midsem End</td>
<td>26 QUIZ 2 (in midsem week)</td>
<td>27</td>
<td>28 D1 Lec D2 Lec</td>
<td>29</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

www.free-printable-calendar.com
<table>
<thead>
<tr>
<th>SUN</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2 D2 Lec</td>
<td>3 D1 Lec</td>
<td>4 D1 Lab</td>
<td>5 Buddha Purnima</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9 D2 Lec</td>
<td>10 D1 Lec</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td></td>
<td>13</td>
<td></td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>28</td>
<td>29</td>
<td>30 D2 Lec</td>
<td>31 D1 Lec</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2023 MAY

www.free-printable-calendar.com
<table>
<thead>
<tr>
<th>SUN</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2 Lec</td>
<td>D1 Lec</td>
<td></td>
<td>D1 Lec</td>
<td>D2 Lec</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Endsem Start</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Endsem End</td>
<td></td>
<td></td>
<td>Makeup quiz (theory, lab)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grading Deadline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LAB QUIZ 3 (MON, TUE, THU, FRI)

QUIZ 4 (in endsem week)

Makeup quiz (theory, lab)