

Assignment Project Exam Help

CSC301 <https://powcoder.com>

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Introduction to Software Engineering

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“Begin with the end in mind.”

- Stephen R. Covey

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## Instructor (David Jorjani)

- Former Founding Engineer/Team Lead at Kooltra
  - FinTech startup with \$8.9M raised in capital
- Leading product development at Ideal.com
  - AI startup screening millions of resumes monthly
- Teaching CSC301 since 2017

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# Who are you?

- Computer Science students
  - Internship or PEY experience
  - No industry experience
  - Taking the course as a program requirement
- Who else?

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# What will you accomplish in this course?

- You will build a functional software
- Used by real users
- Adding value to a real organization
- With a real customer/partner
- In a “large” team
- To add to your resume and interviews

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# Course Goals

- Learn how to work in a team to build a product
  - Communication with your team and your customers
- Introduce software development life-cycle (SDLC)
  - Tasks, tools, practices and conventions used by software professionals
  - Standard software development framework used in industry
- Get you to think as pragmatic professionals
  - Identify common problems and apply thoughtful solutions
- Learn some new tech skills
- Improve programming skills in the language of your choice

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# Topics

- Version control & Collaboration ([Git](#) & [GitHub](#))
- Software processes & teamwork
  - focusing on [Assignment Project Exam Help](#)
- Product management
  - Articulating [https://powcoder.com](#) *what* we're building, *who* we're building it for and *why* it is [Add WeChat powcoder](#) valuable
- Software design & architecture
  - [Design patterns](#)
  - Code [craftsmanship](#)
- Automated Testing & DevOps
- Application Programming Interfaces (APIs)

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Course Logistics  
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# Resources

- Course website:  
On [Quercus](#)

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- Discussion Board: [Piazza](#)  
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- GitHub organization:  
Details to follow

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On my teaching philosophy  
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# Communication Policy

- Email: [csc301-2021-01@cs.toronto.edu](mailto:csc301-2021-01@cs.toronto.edu)
  - Begin email subject lines with “[CSC301]”
  - If your question is of general interest to the class, please post it on the discussion board (Piazza), instead of sending an email  
<https://powcoder.com>
- Office hours: **Mondays 20:00-21:00**  
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# Teaching Assistants

- Project TAs
    - Adam El-Masri (Head TA)
    - Shashank
  - Assignment TAs
    - Wenzhangzhi Guo
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# Email Policy

- Always include CSC301-A1/A2/D1/D2/D3, etc. in the subject
- Always include your utorid and specific details (e.g., repo link) with your request
- Use the following emails:
  - [csc301-2021-01@cs.toronto.edu](mailto:csc301-2021-01@cs.toronto.edu) for general requests related to the course

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# Prerequisites

- **CSC209** - Software Tools and Systems Programming
  - Implicit prerequisite, **CSC207** - Software Design
  - Basic Object-Oriented programming in Java
  - Comfortable with Unix command line
- **CSC263/CSC265P** (Enriched) Data Structures and Analysis
  - Understand the difference between *data type* (interface) and *data structure* (implementation)
  - Basic data structures and types
  - E.g.: Array, List, Queue, Stack, Map (aka dictionary), Tree, Graph

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# Marking Scheme

2 Programming Assignments	30%
Team Project (3 deliverables throughout the term)	55%
Team Presentation	15%

No exams!

# Assignments

- 2 programming assignments
- Goal is to apply programming concepts and learn new tech and team work

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# Team Project

- ~9 weeks long
- 5-6 students per team
- One TA per team, acting as a “mentor”
- Focus:
  - Defining a product considering users and need
  - Building a prototype/MVP
  - Organizing and working with a team
  - Working in a traceable manner
  - Presenting your work

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# Team Project - What is it?

- Identify a problem, the people it affects, and how you intend to solve it

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- Build a proof-of-concept or “Minimum Viable Product”

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- Evaluating your ability to use a software process to build a

**usable product** **Add WeChat powcoder**

- Facilitated by the TAs during tutorials

# Team Project - Two options(1)

- Partner option:
  - Product defined for a good cause or startups
  - More realistic projects with real clients and users
  - Products can be used after the term
  - Project proposals are available [here](#)

“This is learning as it should be - capable students tasked with a complex project that will make a real difference to many. While our team's understanding of technology was clearly evident, I was even more impressed by their determination, teamwork, resourcefulness, and impressively project management and communication skills. Technology will change but the other skills these students exercised mean they are set for impactful careers. Whatever the challenge. I'm grateful our organisation could be among the lucky ones to benefit. Thank you for taking education in the right direction” - Andrew Whyte, Head of Senior School at Kingsway College School

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“This partnership program is extremely meaningful for both nonprofit/charitable organizations and students alike. All learning that occurs at the student and organizational level begets progress for both parties, which ultimately, moves the needle on solution oriented innovations that are needed to better the lives of vulnerable people and communities. “ -Feeding Canadian Kids

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# Team Project - Two options(2)

- Self-directed option:
  - Related to United Nations Sustainable Development Goals  
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  - Product defined by you  
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    - You can request to pitch your ideas in the tutorial and on Piazza

# Team Project - Process

- Document your own team process
  - You will learn how to do this
- Improve your process over the course of the semester to become a more efficient team

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# Team Project - Product

- Building an application that solves a problem
- Use any tools you choose
  - We will teach you the basics of some
- Browser extension, mobile apps, etc.
- Make something useful!

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# Team Project - Next steps and tips

- Next few tutorials: we'll facilitate the creation of teams
  - Have a solid understanding of the tools you're comfortable with as well as your learning goals
  - Know your schedule
  - Pitch and listen to ideas
  - Create a team, pick a time slot and attend tutorials
- Follow your TA's advice and feedback

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# Team Project

- 55% - Four deliverables
  - Concise deliverables presenting your work
  - Meant to be useful, not to add extra work
  - Evaluated by the TAs
  - Consistent individual contribution is **very important**
    - You are expected to contribute valuable work regularly
    - Your grade will also depend on this!
- 15% - Final demo
  - During the last week(s) of the term
  - Evaluated by the instructor
- Note: We will have peer evaluations! (Details to follow)

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# Fair grading exercise

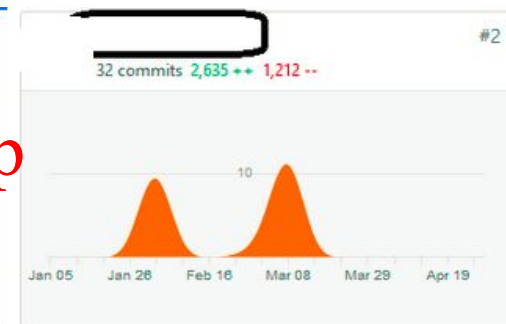
Given a team mark of 80, what do you think is a fair grade for each student?

- A) All equal
- B) 80+ for the first two and 70 for the last two
- C) All varied by their commit counts
- D) Other

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# Cheating

- Don't cheat! (It can have severe implications)
- Feel free to discuss ideas with others, but don't share code with others
- You can use available resources with proper references
- When in doubt, ask your instructor or TA

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# Getting Help

- Lots of new concepts
- Therefore, if you don't understand something, you should ask
  - During office hours, on the discussion board or in class
- University-wide resources available to learn how to **write better**
  - Explore [English Language Learning](https://powcoder.com)

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# Bottomline

- 301 is not about one technology or tool. It is about how to think, **learn** and work like a professional software engineer
- In this course you practice learning, the essential skill for professionals in tech

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# FAQ

- I can learn all these things in my internship or PEY. Do I really need 301?
- I have already done an internship. I already know everything here, right?
- I don't know my team. Will I have a bad experience?
- Is it a good idea to work with my friends?
- I don't know web programming or databases. Should I still take the course?

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Please keep in mind that CSC301 is a hands-on course!

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In other words a lot of fun! But also a lot of work.

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**Stay in the course only if you are ready to do the work**