

# CS-230 Software Engineering Assignment Overview (2022/2023)

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The assessment of CS-230 involves the design and production of a software product as a team. This is broken down into two group-based assignments:

- Assignment 1 – Design.

Each group develops an object-oriented design for the software product.

- Assignment 2 – Implementation.

Each group implements the software product following the design.

**You must be available until the end of term as part of the demonstration of Assignment 2.**

CS-235 students (i.e., Software Engineering students) will continue the development in the second semester. For example: by adding missing features, re-engineering, and extending another group's design and implementation.

## 1 The Groups

The groups will be allocated by the Department. Whilst we appreciate that you might prefer to work with friends, we require you to work in allocated groups because:

- In a real-world software development team, you will have to work with people you do not initially know. We try to make the group project work as realistic as possible.
- We create groups that are balanced in terms of academic performance. We carefully analyse everyone's first-year marks and create groups such that several factors are balanced:
  - The average mark of each group (i.e., first-year marks with programming weighted more heavily) is approximately equal.

- We split Computer Science students and Software Engineering students. This means the Software Engineers can keep their groups in CS-235.

We will not consider requests to swap groups.

## 2 Working in Groups

When working in groups, we expect all members to be professional - CS-130 and CS-135 have both already covered many elements of professionalism. Being professional means different things, but some of the more obvious are:

- Contributing to the work.
- Discussing ideas, providing constructive feedback and participating in the current activities.
- Where disagreements occur, and they will, listening to all sides, being open for discussion and helping choose the best path forward for the group and project.
- Creating an open and safe environment. Everyone should feel they can air their opinions. Never criticise a person. If an idea is flawed, then explain why the idea is flawed, but do not criticise the person who suggested the idea. Criticise the idea, not the individual.

## 3 Marking

Each assignment will be marked by the teaching staff and will produce a single group mark. During each assignment, you will reflect on the efforts and contributions of each of your teammates and produce weekly Contribution Breakdowns (see below). These breakdowns will be averaged together at the end of the assignment to create individual contribution weightings. The group mark will then be weighed against these to inform the academic staff

member's decisions about each individual's mark for the assignment.

Academic staff can overrule marks and change the process of peer assessment for a group in conjunction with the Year Head in atypical situations.

## 4 Contribution Breakdown

The purpose of Contribution Breakdowns is to allow each group to show how much effort and contribution each individual group member has made each week. It is our view that this allocation should be even, i.e., all students should contribute the same each week. However, if a group member has gone above and beyond what was expected then these Contribution Breakdowns allow you to record this; likewise, if a group member has not contributed as much as they should then these Contribution Breakdowns allow you to recognise that as well.

At the **end of each week** of each assignment, the team must submit a **single Contribution Breakdown Spreadsheet** or **Conflict Contribution Spreadsheet**.

Each team has “£100” to divide amongst the team members based on contribution levels during the past week. At the end of each week, the team must meet and discuss the allocation. The team should come up with an agreed allocation. You will need to discuss the effort of each member over the week, discuss what went well and what could have been improved. **Exactly £100 must be allocated in full.**

Example 1: Ideal situation. In this situation, all 6 group members pull their weight and at the weekly group meetings everyone agrees to this. The team records an even distribution of contribution by entering “£16.67” for each person. Each person signs the sheet and then it is submitted.

Unequal breakdowns can be agreed upon by the group as a whole through honest discussion. When this happens, it is important that the minutes of the meeting reflect why this has happened and there is a clear understanding – that is also documented in the minutes – of what members with low payments can do next week to return to the expected equal division.

Example 2: Realistic situation. If it is agreed that Team Member 1's contribution was a little lacking this week, but Team Member 2 provided more than what was expected then their allocation may be adjusted accordingly. The team agrees:

- Team Member 1 gets £14.50.
- Team Member 2 gets £18.82.
- Team Members 3,4,5,6 each get £16.67.

Team Members agree to this allocation because they know Team Member 2's work is raising the total group mark, so everyone benefits and they encourage Team Member 2 to keep working hard. Team Member 1 knows their efforts have been lacking this week but has agreed that they can help Team Member 2 next week, which will bring everyone back to an expected equal division. Note that the above sums to £100.

In the event that discussion alone cannot resolve differences, the group must complete the **Conflict Contribution Breakdown**. Each individual will privately decide their own contribution breakdown allocating exactly £100 to the other team members. Note that you will not pay yourself, so the averages will be different (for example, in a team of 6, you will divide exactly £100 between the 5 other members - £20.00 in the event of equal contribution). The Secretary of the group will collate these in the **Conflict Contribution Breakdown Spreadsheet** which will then calculate the average breakdown. This will be discussed with minutes taken. The Conflict Contribution Breakdown is submitted.

Example 3: Conflict. There is serious disagreement about how much contribution individuals have made and discussion is at a deadlock. It is not possible to agree on the division of the £100. In this case the **Conflict Contribution Breakdown** must be used. Each individual produces their own row in the breakdown and the mathematical average of these is calculated.

## 5 Contribution Breakdown Meeting

The following process must be followed at the end of each week.

1. Organise a meeting that you are all able to attend 1 week in advance.
2. Someone must take minutes of the meeting.
3. Without initially going into numbers, the group as a whole discusses each other's contributions and tries to come to an overall agreement. You may use the Contribution Breakdown spreadsheets to find appropriate numbers to reflect contributions.
4. Once agreed, the Contribution Breakdown Spreadsheet can be completed and submitted.
5. **If an agreement is not possible:**
  - Each person, without discussion, comes up with a Contribution Allocation for other members and gives it to the group Secretary.
  - The Secretary enters their own individual Contribution Allocation into the Conflict Contribution Breakdown Spreadsheet first then enters everyone else's.
  - The averages in the Conflict Contribution Breakdown should be discussed by the group.
  - Individuals who scored others low must explain to them what they can do differently in the following week to return to an even distribution. This must be documented in the minutes.
  - The Conflict Contribution Breakdown Spreadsheet should be verified by each member of the team and then submitted.
6. The group should agree on when they will meet next week and include this in the minutes.

### 5.1 Absence from Contribution Meeting

In the event that a group member misses a meeting for any reason, their absence should be noted in the minutes along with any apologies they might have

given. They should have their contribution marked by the other members of the group.

If a Conflict Contribution Report needs to be completed, the Secretary will enter an even mark for all group members in the absent student's row.

**We recommend that as a group you agree to a fixed penalty to contribution for missing a meeting without some form of notification at the start of the Assignment.**

## 6 Submission of Contribution Breakdowns

Submission of contribution breakdowns is by an online form or email, (depending on the type of submission) using your Swansea University account. One group member on behalf of the whole group must submit one of the following files each week using this **exact** specified format:

- Contribution Breakdown Spreadsheet - this should be named as: "*GroupGN-yyyy-mm-dd-breakdown.xlsx*"
- Conflict Contribution Breakdown Spreadsheet - this should be named as: "*GroupGN-yyyy-mm-dd-conflict.xlsx*"

where *GN* is replaced by your group number and *yyyy-mm-dd* is replaced by the calendar date of the deadline for the minutes (with *yyyy* replaced by the year, *mm* with the month, and *dd* by the day), e.g., *Group03-2020-10-12-breakdown.xlsx*, *Group15-2020-10-19-conflict.xlsx*, etc...

Submission of Contribution Breakdown Spreadsheets will be through an online form. One group member must complete this form fastidiously, ensuring that both the spreadsheet and details required on the form are accurate. Once you have submitted the form you will receive an email either confirming or rejecting your submission. If a submission is rejected, read the email carefully, understand why it was rejected and re-submit. If you need to re-submit (i.e. to replace a previously accepted submission) then you will need to email Stewart Powell ([s.w.powell@swansea.ac.uk](mailto:s.w.powell@swansea.ac.uk)) to rectify it.

For A1 you should submit your Contribution Breakdown Spreadsheets to:

**[tc1.me/cs230-a1-contribution](https://tc1.me/cs230-a1-contribution)**

For A2 you should submit your Contribution Breakdown Spreadsheets to:

**tc1.me/cs230-a2-contribution**

Submission of Conflict Contribution Breakdown Spreadsheets is by email (instead of the online form). This email must be sent to Stewart Powell (s.w.powell@swansea.ac.uk) with your whole group CC'ed along with your Academic Mentor. This is to prevent foul play and ensures every group member can see what has been submitted. If a group member is not CC'ed it may not be counted as a submission.

## 7 Matters Outside of Scope of Contribution Breakdowns

Some issues are not dealt with by the group but by staff members as they are outside of the groups remit, such as:

- Bullying or harassment.
- Academic misconduct.
- Extenuating circumstances and illness.

### 7.1 Bullying or Harassment

Bullying or harassment is academic misconduct and may result in you being asked to leave the University. You will receive zero for the assessment if you are found to have bullied other group members and will be referred to the academic misconduct board. Bullying and harassment can include but are not limited to:

- Using abusive or threatening language.
- Raising your voice at other group members or repeatedly talking over them.
- Insulting group members when they are not present.
- Giving dishonest scores in Contribution Breakdowns.
- Coordinating with another group member to undermine someone else's contribution.
- Sending inappropriate messages.

In the event that you think you witness or experience bullying you should get in touch with your

Academic Mentor straight away and explain the issue to them.

### 7.2 Academic Integrity and Academic Misconduct

By submitting coursework, electronically and/or hardcopy, you state that you fully understand and are complying with the University's policy on Academic Integrity and Academic Misconduct. The policy can be found at <https://myuni.swansea.ac.uk/academic-life/academic-misconduct>.

In the event that you think you witness plagiarism you should get in touch with your Academic Mentor straight away and explain the issue to them.

### 7.3 Extenuating circumstances and illness

If a group member has extenuating circumstances the group will mark their contributions still giving 0's (zeros) if they contribute no work. The academic team will handle the final marks for this individual.

If you are unwell or experience extenuating circumstances, you must follow normal departmental procedure and contact [studentsupport-scienceengineering@swansea.ac.uk](mailto:studentsupport-scienceengineering@swansea.ac.uk). If you are able to, please email apologies to your group Secretary as well for meetings you cannot attend.