

BUILDING BLOCKS: Experimenting with digital interventions for behavioural change

Version 1: 22 January 2025

Note: This course manual may be updated during the course. Updates will be communicated via Canvas as well. Make sure you always use the most recent version of this manual. See the final page of this manual for a list of updates.

Title of Course

BUILDING BLOCKS: Experimenting with digital interventions for behavioural change

Course Catalogue Number

738100002Y

Credits

30 EC

Entry Requirements

The entry requirements for the course are specified in the Course Catalogue, available online at <https://studiegids.uva.nl/xmlpages/page/2024-2025-en/search-course/course/122402>.

Instruction Language

English

Time Period(s)

Academic year 2024-2025, semester 2

Location

Please see the UvA schedule webpage <https://rooster.uva.nl/>.

Video Recording of Lectures

None

Examiners

Prof. dr. Theo Araujo
Prof. dr. Thomas Poell

Core Lecturers

Gizem Aktas, MSc (course coordinator)
Dr. Wahideh Achbari
Dr. Steve Pickering

Dr. Koen Wessels
Dr. Rens Wilderom
Dr. Szilvia Zörgő

Course Content

Students will study theories of social and behavioural change, building on the knowledge that was acquired in the Foundation course. They will further extend their theoretical base, studying theories of planned behaviour and human-computer interaction.

A major part of the semester is organised around a group project (theme: climate change or surveillance). Students will work in small project groups to address a real-world problem identified by a CSSci Challenge Partner. In the course of this project, students will:

- Design and maintain a project management tool;
- Design a viable research question, including testable hypotheses;
- Design and conduct a focus group and derive relevant insights;
- Design a survey experiment, and conduct and reflect on a mini-trial;
- Analyse experiment-related data using relevant statistical concepts;
- Design a website applying user experience design principles, through an iterative process with inputs from their research;
- Create the website using relevant web development tools;
- Create professional presentations of their project and its deliverables.

Additionally, there will be five individual assignments to reinforce the key aims of the course:

1. Academic literature review;
2. Statistics portfolio;
3. Database and website development;
4. Project management;
5. Individual contribution to Group Project III.

Teaching Methods/Learning Formats

Teaching and learning take place through a set of formats, including check-ins and check-outs, lectures, workshops, practicals, and group work. You can find additional information on Canvas.

Course Evaluations & Adjustments of the Course

This course was last conducted in Semester 2 of the 2023-2024 academic year. Below is a summary of the key feedback received from formal and informal evaluations, along with the corresponding changes implemented:

- a) **Project Events:** Two project events, the Prototype Party and the Project Closing Event, were held in the second half of the semester. The similar formats and close scheduling of these events limited opportunities for meaningful engagement between project partners and students. To address this, we cancelled the Prototype Party and introduced a required meeting as part of the Group Project Weekly Goal 6. This mid-semester meeting, organized by student teams with their project partners, focuses on discussing Memo's and gathering partner feedback. The Project Closing Event will remain at the end of the semester retaining its previous format as a mandatory component of the Group Project.

- b) **Individual Contribution to Group Project Progress Check:** This assignment previously lacked a Progress Check moment. This didn't enable the opportunity for structured feedback from peers and Core Lecturers during the process. To improve this, we introduced a Progress Check for this assignment during week 5/6 of the semester to ensure students receive timely and constructive Individual Contribution feedback.
- c) **Statistics Content in Research Expertise Workshops:** Both students and Core Lecturers noted that the statistics content felt rushed. In response, we revised the content and schedule of the Research Expertise workshops and lectures for both semester 1 and 2 to ensure further alignment with the Learning Objectives and provide a more comprehensive learning experience.
- d) **Change Making Expertise Assignment:** This assignment previously required the use of a specific project management tool to track the progress of individual projects. However, this constraint limited the potential of the task. This year, we removed the tool specification from the assignment. With this adjustment, we aim to enable students the freedom for self-directed learning and discover the tool and method they personally benefit from the most.

Professional Study Attitude

Computational Social Science is organised along a "just in time learning" approach, which means that the weekly content is directly applicable to the project work at that time. This means that it is crucial to participate in all the sessions (check-in, workshops, lectures, and so on) and all scheduled meetings and events with external partners. Your well-prepared, on-site participation is expected for all learning activities and inherently reflected in the programme's exit qualifications. In the event of a learning activity that you have missed, it is your responsibility to make up for the content that was covered during your absence. In case of absence, you must always inform your Core Lecturer beforehand or as soon as possible.

Requirements

In the Computational Social Science programme, students work together, in student groups and with external partners. You must therefore demonstrate a professional study attitude (the four P's):

1. Present
2. Prepared
3. Participating
4. Proper and clear communication

After all, absence or low-quality participation from one team member will impair the ability of other group members to excel and perform well. Additionally, a student's own learning is inhibited by an insufficient professional study attitude.

Consequences

General lack of participation:

If a student cannot take part in a learning activity, they should inform their Core Lecturer. It is the student's responsibility to catch up on the contents that were covered.

If the Core Lecturer notices patterns of absence or low-quality participation inhibiting a student's learning process, the Core Lecturer will request an explanation from the student. The Core Lecturer will schedule a meeting with the student to determine:

- If the student can still meet the participation requirement.

- Which pattern of professional study attitude the student needs to develop.
- In which timeframe this improvement in performance needs to be sufficiently demonstrated.

The Core Lecturer will make a reasonable attempt to schedule this meeting with the student; should the student be unresponsive, or a time and location cannot be agreed upon in a timely manner, the Core Lecture will instead issue a written warning covering the same points.

A summary of this meeting will be shared with the student via email and counts as a first written warning (if an in-person meeting was unable to be scheduled, the original written warning will serve and no additional summary will be sent). In some cases, the Core Lecturer may refer the student to the programme's Study Adviser to seek guidance.

In case the student has not sufficiently demonstrated improvement in performance during the set timeframe, a second written warning is issued. This email is also shared with the examiners of the semester course, the study adviser and the programme's Examinations Board.

Lack of immediate adequate further improvement of performance or accountability from the student will lead to an 'Unacceptable' result for the individual assignment 'Individual Contribution to Group Project'. As a consequence, the student will not be able to complete the semester course.

Group work:

If, in the informed judgement of the Core Lecturer, the (lack of) participation of a student in a group project is such that the student has not contributed to the project at all stages of its development, that student alone may receive an 'Insufficient' result for the group assignment.

Failure to fulfil the participation requirements, failure to demonstrate professional study attitudes, or continuing and serious disruptive behaviour may also result in a student being removed from their project group or not assigned to new project groups. This student receives an 'Unacceptable' result for the individual assignment 'Individual Contribution to Group Project' and will not be able to complete the semester course.

Lateness Policy

Students, partners and staff participating in scheduled activities are disrupted and distracted when persons arrive after the starting time (late). In case an activity has commenced (e.g. if the door is closed and/or if a person is given instructions or a presentation), a student arriving late should not enter the room or activity. In this case the student will need to wait until the break before entering the room.

Force Majeure

When students are unable to fully participate because of reasons beyond their control, they should notify the Study Adviser and their Core Lecturer as soon as possible. Notification should be given ahead of time if the absence is foreseeable, or as soon as possible in case of unforeseen circumstances such as illness. The programme will make serious efforts to facilitate these students and prevent unnecessary delays. If students are not able to participate in graded assessments due to reasons beyond their control; or they wish to ask for a deadline extension or permission to participate in the resit/repair opportunity without having made **Deadline Extension Request Procedure for Graded Assignments** (see below).

Assessment

In the Computational Social Science programme, assessment is geared towards learning. Most assignments are formative, which means that the students receive a progress check report to further improve and learn, but do not receive a grade. In addition, there are summative and therefore graded assignments. These assignments receive a descriptive grade but - in principle - no feedback beyond an explanation of the grade.

Computational Social Science uses the UvA descriptive grading scheme: Excellent, Good, Satisfactory, Sufficient, Insufficient, and Unacceptable. See:

<https://student.uva.nl/en/topics/assessment-of-your-grade-point-average>

Grades will be determined in no longer than 15 working days.

The main part of each semester is the group work. In addition, each student is assessed on the four learning trajectories Social Science and Humanities Expertise, Changemaking Expertise, Research Expertise, and Digital Expertise. **All students are required to score at least sufficient for these individual assessments to pass the course.**

Students are also individually graded for their contribution to group projects. This assessment is based on roles and responsibilities as specified in a Team Charter, and the student's active and professional participation in group activities.

In case a group receives an insufficient final grade for the project(s), students can compensate this with their individual assignments. This is calculated using the grade points attached to the UvA descriptive grades (see link above) and the weights mentioned in the table below.

All assignments need to be handed in through Canvas. Inspection of the graded work will be possible by appointment with the relevant Core Lecturer in the week following the release of grades. **All assignments must be submitted as static files;** links to online files/storage will only be accepted in extraordinary cases and with preapproval by the Core Lecturer.

TABLE 1: GRADED ASSESSMENTS

Graded Assessments	Date / Deadline	Weight (%)	Sufficient Required (Yes/No)
Individual Assignments			
SSH: Academic Literature Review	Friday, April 11, 2025 (5 p.m.)	10	Yes
RE: Statistics Portfolio	Portfolio Submission: Friday, May 9, 2025 (5 p.m.) Explainer Session: In weeks 15 and 16 (exact dates to be scheduled with the CL) <i>Note: Grades for this assignment will be announced shortly after the Explainer Sessions.</i>	10	Yes
DE: Build an Informative Website	Friday, May 16, 2025 (5 p.m.)	10	Yes
Individual Contribution to Group Project III	Monday, June 2, 2025 (5 p.m.)	10	Yes

CME: Project Management and Written Reflection	Thursday, June 5, 2025 (5 p.m.)	10	Yes
Group Assignment			
Group Project III: Driving Behavioural Change with Digital Tools	Final Deliverable: Wednesday, May 28, 2025 (5 p.m.) Project Closing Event (participation required): Tuesday, June 3, 2025 (2 p.m. - 5 p.m.)	50	No

Rules Regarding Resits

In the case of an 'Insufficient' for a graded assessment following a serious attempt, one resit or repair possibility will be offered before the end of the semester. If no serious attempt has been made by a student, the grade will be registered as 'Unacceptable,' and no resit or repair opportunity will be possible (see the *Serious Attempt* section, below).

Note that there are two weeks reserved before the end of the semester for repairs or resits. The grade for all repair or resit assignments is capped at "Sufficient."

TABLE 2: RESIT ASSESSMENTS

Eligible Graded Assessments	Repair or Resit?	Date / Deadline
SSH: Academic Literature Review	Repair	Friday, June 13, 2025 (5 p.m.)
RE: Statistics Portfolio	Portfolio Submission: Repair	Monday, June 23, 2025 (5 p.m.)
	Explainer Session: Resit	Tuesday, June 24, 2025
DE: Build an Informative Website	Repair	Wednesday, June 25, 2025 (5 p.m.)
CME: Project Management and Written Reflection	Resit: Academic Essay	Wednesday, July 2, 2025 (5 p.m.)
Individual Contribution to Group Project III	Resit: Reflection for Personal Improvement	Wednesday, July 2, 2025 (5 p.m.)

Serious Attempt

Students must make a "serious attempt" to complete every required component of a graded assignment in order to receive a grade for that assignment. A "serious attempt" is the deliberate and sustained attempt to fulfil the requirements of a task or project to the best of one's ability and in a timely manner. A "component" refers to a major aspect of the assignment, such as a Weekly Goal deliverable or a notebook for the RE portfolio. (For example, a single assessment criterion within a larger written work or a single question within a code notebook would not, on its own, be considered a "component.") Required components are indicated in the "Graded Assessment" table in this Course Manual.

The teaching staff will determine if submitted work constitutes a serious attempt, looking at aspects such as (but not restricted to) the scale of the work, depth of work, alignment with stated requirements, utilization of available resources (including Progress Check opportunities), seriousness of revisions, and/or effort at self-reflection. If no serious attempt is made, the student will receive a grade of “unacceptable” on that assignment, be ineligible for repair of that assignment, thus ending their participation in the course.

Failure to submit **any required component** of an assignment is also considered to demonstrate a lack of serious attempt and the student will be given “NAP” (not submitted) for the assignment.

Description of Graded Assignments

Group Project III: Driving Behavioural Change with Digital Tools

Student project teams develop a website to encourage individual behavioural change. A research question will be defined together with an external Challenge Partner. By drawing on focus groups and desk research, the projects will develop a strategy on how to communicate their message most effectively. Moreover, with simulated data, the projects will run an experiment. The insights generated by these methods will inform UX design choices and the website's eventual form. Finally, student project groups present their website to the Challenge Partners and the CSSci community.

Individual Contribution to Group Project III

When participating in a group project, it is important for each individual to contribute effectively to the success of the project. This requires a professional attitude towards one's colleagues in the group, challenge partners and lecturers, as well as commitment to fulfilling the expectations outlined in the Team Charter.

The Team Charter is a document that describes the goals, responsibilities, and expectations of each group member, as well as defines the agreed mode of work in terms of communication and conflict resolution. The Team Charter will be revisited on a regular basis during the check-in meetings to evaluate the performance of the groups; the contents of the Team Charter could be updated during the Semester, if necessary. By behaving professionally and complying to the specifications of the Team Charter, the student will demonstrate their commitment to the success of the group project and help ensure that it is completed to a high standard.

Assessment will be determined by the Core Lecturer by evaluating student's performance over the project against the specifications of the Team Charter; the Core Lecturer will also take into account the feedback provided by other group members and own observations regarding the performance of the student.

The resit opportunity for this assignment includes three components and has a 2-week timeline:

1. Reparations: expected to take ~8 days for an average student to complete.
2. Reflection: expected to take ~1 day for an average student to complete.
3. Plan: expected to take ~1 day for an average student to complete.

Of particular importance is the first, Reparations, component. This is a substantial piece of work, the outlines of which must be agreed on between the student to take the resit and their Core Lecturer before the student begins working on it. It is the student's responsibility to reach out to their Core Lecturer to begin the planning process for this work as early as possible after the need for the resit becomes announced.

Individual Assignment CME: Project Management and Written Reflection

The student will create a project management system using a piece of software of their choice. The system will structure the student's SSH, RE, and DE individual projects and track their current progress through these assignments. Optionally, the system may also include personal learning and development goals. The system must be kept up to date with the student's progress (minimum: update at least weekly). The system will be reviewed after initial set-up and at the conclusion of the semester, and will be spot-checked one time during the semester. At the end of the semester, the student will write a brief reflection on their use of their tool and how it relates to some of the principles of project management as presented in lectures and workshops.

Individual Assignment RE: Statistics Portfolio

The student will complete a portfolio of Python notebooks covering a range of statistical subjects about hypothesis development and testing. After submission of the portfolio, students schedule a 15-minute explainer session with their CL in which they explain and justify the solutions they have given in their portfolio.

Individual Assignment SSH: Academic Literature Review

The student will conduct a literature review where they compare and apply theories on individual behavioural change or diffusion to a relevant topic of their choice, typically the student's project topic. This assignment will consist of two parts. In part A, the student will formulate a research question to investigate the potential of behaviour change through digital interventions regarding a specific climate change or surveillance issue (e.g., related to the group project). They will explain and compare the answers that the different theories presented in the lectures can give on their research question. In part B, the students will update the literature review, focusing on application. There will be a peer review process as part of the assessment.

Individual Assignment DE: Build an Informative Website

The student will build a website aimed at informing its visitors about an aspect of either climate change or surveillance. The website will present a combination of qualitative and quantitative information, supported by publicly available datasets, through textual, numerical, and visual communication. The student will create their own relational database from a couple of selected datasets. They will clean and analyze the data, and present visualizations on the website supporting its purpose. Finally, the student will integrate a user-tracking functionality into their website and reflect on its use and implications.

Assignment Deadlines

Assignment deadlines are strict. **Canvas will not accept submissions after the deadline.** If you miss the deadline for a graded assignment, you will not receive a grade (NAP), you are not eligible for a repair opportunity, and you cannot complete the course. Your Core Lecturer cannot change this. If you are unable to submit your assignment in a timely manner due to extenuating circumstances, contact the coordinating Core Lecturer and send the Core Lecturer your assignment by email immediately.

When submitting an assignment, please allow sufficient time to deal with potential minor technical issues (problems with your computer or internet connection, time required to upload large files, etc.) as they are not considered a valid reason for missing a deadline.

Please be aware that Canvas **does** allow multiple submissions of your non-quiz assignments. If you are concerned about the deadline, we recommend that you first submit your deliverable as soon as you have what you consider to be a serious attempt at the assignment. You may then later - but before the deadline! - resubmit the finished version of your deliverable. The most recent submission of the assignment that is made before the deadline will be graded.

Deadline Extension Request Procedure for Graded Assignments

Deadline extensions are given only in exceptional, unforeseen circumstances. To request an extension of the deadline from the Examinations Board due to extenuating circumstances, such as illness, **please submit your request as soon as you are experiencing the circumstance** (e.g., at the start of the illness). **Do not wait until after you have missed the deadline.**

If the request is sent to the Examinations Board in the five days leading up to the assignment deadline, the board cannot guarantee that your request will be processed before the deadline. If the outcome of your request is still pending on the day of the deadline, please make sure to upload your (incomplete) assignment to ensure that you are eligible for participation in the repair opportunity should your request be denied, and in case of an Insufficient result. In case of extenuating circumstances, it is crucial to communicate clearly and timely about your situation with both the study adviser and your Core Lecturer, and if possible, document your circumstances with the study adviser.

In case of sudden, short and unforeseen emergencies on the day of the deadline, or the day before it, that require an extension of a maximum of three days, students should directly contact their Core Lecturer and the coordinating Core Lecturer for an extension request without submitting a request to the Examinations Board. Students can be asked for documentation to substantiate their request. **Again, please make sure to upload your (incomplete) assignment to ensure that you are eligible for participation in the repair opportunity should your request be denied, and in case of an Insufficient result.**

Academic Integrity

Rules Regarding Fraud and Plagiarism

The provisions of the Regulations Governing Fraud and Plagiarism for UvA Students apply in full. Access this regulation at <https://student.uva.nl/en/topics/plagiarism-and-fraud>.

Plagiarism can take many forms, including (but not limited to!):

- making use of or reproducing another person's texts, data or ideas without complete and correct acknowledgement of the sources;
- presenting the structure or central body of ideas taken from third-party sources as one's own work or ideas, even if a reference to other authors is included;
- submitting a text that has previously been submitted, or is similar to a text that has previously been submitted, in the context of assignments for other courses;
- reproducing the work of fellow students and passing it off as one's own.

If you have not read these regulations before, please do so! Note that plagiarism and fraud is extremely serious. In case of alleged plagiarism and/or fraud, your supervisor is obliged to inform the Examinations Board immediately.

It is important to realize that plagiarism applies to all of your academic output, **including programming code**.

Rules Regarding the Use of Artificial Intelligence Software

As we continue to advance in the digital era, we wholeheartedly embrace the positive contributions that artificial intelligence offers to your learning journey. An example of this is Large Language Models (LLMs), like ChatGPT. These can help adequately phrase ideas that you feed them, summarise texts they are explicitly fed, or help you when you encounter clearly defined issues in coding.

However, we must emphasize that LLMs are no substitutes for your intellectual efforts and critical thinking. Prudentially, they do not rely on any external criterion for truth - this means they may present made-up information as real (even inventing sources), remain vague in their answers and neglect key aspects, or produce buggy code. Ethically, they raise issues of claiming authorship for ideas that are not your own and may undermine responsibility for your own output. Hence, the development of original work remains an essential part of our educational mandate. Remember that LLMs are here to assist, not to replace your creative process.

Please also get acquainted with the UvA general information on the use of ChatGPT and AI tools in your studies: <https://student.uva.nl/en/topics/chatgpt-and-your-studies>.

If a student has made use of ChatGPT or a similar tool for an assignment, this should always be mentioned by the student and the tool should be cited as a source in the bibliography.

Open Research, Data Integrity and Storage

CSSci supports open research. Unless otherwise specified, the results of research conducted with external Challenge Partners will be shared with those partners and may be further distributed by them. CSSci may choose to share student results, reports, data visualizations, or other products for research or educational purposes. If a student objects, they must contact their Core Lecturer as soon as possible to explain why the research should not be made available.

It is therefore of the highest importance that research by students should be conducted responsibly, neatly, and archived for a period of two years. Both during ongoing research and for archiving purposes, all data should be stored with UvA storage facilities (OneDrive or another option approved by your Core Lecturer) and appropriately secured. You **may not** use 3rd party options (Google Drive or Dropbox, for example) to store any data which may contain personal information as per the GDPR.

For the rules, see the “Ethical Guidelines for Students” on the GSSS page: <https://assets-eu-01.kc-usercontent.com/2a7f7854-b38e-015d-c63a-62b2c8fa2017/102d0011-670c-4d57-af37-2d613c2a1821/gsss-ethical-guidelines-for-students-version-2021-22.pdf>

Personal Safety and Security

We want students to be assured they have a positive environment and a safe basis for their studies. We hope you never experience an unsafe situation or undesirable behaviour at the UvA, but should

this occur there are different individuals and institutions you can turn to (such as the study adviser and the programme director). Please see <https://student.uva.nl/en/topics/safe-study-environment>.

Literature and Materials

Readings and additional materials are announced through Canvas.

Date of Final Grade

No later than 15 working days after the last graded assessment.

Programme / Weekly Planning and Deadlines

Weekly schedules can be found in Canvas and on rooster.uva.nl.

Learning Objectives

The activities of this semester together work towards the following learning trajectory objectives:

Social Sciences and Humanities Expertise

- Propose interventions modelled around the active citizen.
- Apply theories of motivation and (self-regulated) learning to develop interventions to change attitudes and behaviour and to promote critical thinking.
- Present theory on planned behaviour, persuasion models, and the innovation diffusion; and apply these to propose digital interventions
- Provide an overview of individual-level interventions, classify these along various dimensions, know in general terms their advantages and disadvantages.
- Apply theories of motivation and (self-regulated) learning to develop interventions aiming at change of attitudes and behaviour and the promotion of critical thinking.
- Reproduce the ideas behind technology enhanced learning and apply these to propose digital interventions.
- Explain the ways in which interventions may shape individual and collective behaviour and yield empowerment as well as their biases and limits impacting the development and diffusion of such interventions.

Change Making Expertise

- Acknowledge and recount diverse stories based on stakeholders perspectives.
- Critically reflect on the strategies and applicability of the presented interventions and tools.
- Reflect on academic expertise and skills and formulate constructive and effective personal learning and development goals.
- Develop and formulate academic-based solutions and problem-solving approaches.
- Approach innovation projects with a prototyping mindset, where iterations, trial and error, and even failure are all part of a valuable, creative learning process.
- Present academic-based solutions and problem-solving approaches.
- Adapt a writing style that is appropriate to the purpose of the text.

- Structure a presentation by building a convincing storyline and use clear visualizations to enhance the story.
- Organize and structure a long-term project (project management skills).
- Compare the strategies and the applicability of the presented interventions and tools.

Research Expertise

- Match research questions to the research methods to answering them.
- Decide on the design of and execute research projects using focus groups / group interviews as a (qualitative) method.
- Decide on the design of and execute research projects using online experiments as a (quantitative) method.
- Analyse data from focus groups in a systematic way using qualitative methods.
- Analyse quantitative data using descriptive statistics.
- Assess and interpret the reliability of experimental designs using the adequate statistical methods.
- Compare groups in quantitative data using inferential statistics.
- Assess the influence of independent variables on dependent variables using inferential statistics.
- Critically reflect on the ethical, legal and social aspects of research designs involving human participants as well as of their underlying assumptions and biases.

Digital Expertise

- Apply the UX principles to prototype a better app
- Use the principles of user design to create the wireframes of an app using an off-the-shelf tool
- Explain the relevance of the components in the web development stack
- Explain the difference between client-side and server-side applications
- Apply basic web development principles to devise a web-based prototype
- Integrate a user-tracking system
- Apply fundamental concepts for the design and implementation of databases, including tasks like data storage, modification, querying, and exporting in different formats
- Apply fundamental techniques of data cleaning (for instance, finding inconsistencies, duplicates, and replacement using regular expressions)

Updates to Course Manual

Version	Date	Changes
1.0	22.01.2025	none

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