

JC3506: Software Design and Implementation (2025-2026)

Assessment: Individual Study

(This assessment accounts for 20% the total mark of the course)

Course Code	JC3506
Academic Year	2025-26
Session	Second Half Session
Study Programme	Undergraduate
Level	3
Credit Points	30 Credits (15 ECTS)

This is the first assessment of the two coursework assignments, and it is individually assessed (no teamwork).

Learning Outcomes

On successful completion of this assignment, the student will demonstrate the ability to:

- Apply effective written communication skills.
- Analyse current software design trends and practices.
- Understand key elements of developing a software-centric system.

Overview

This individual study project is designed to deepen your understanding of contemporary trends in software design. You will choose one of the following topics for your research:

- Microservices Architecture
- Containerization in Software Design and Deployment
- Rapid Application Development and Prototyping
- AI-Driven Software Design
- User Experience (UX)–Driven Design
- Accessibility and Inclusive Design
- Software System Design with Agentic AI

Your task is to conduct a thorough systematic literature survey on the selected topic. You will search and select a minimum of 10 and a maximum of 15 scholarly papers from the specified databases. Please note that the papers must have been published after 2015 to ensure the relevance and recent development in the field. You can also select 5 additional references from other sources like technical blogs and related platforms.

Scholarly Databases

The following are the strongly recommended scholarly databases for your research:

IEEE Xplore, ACM Digital Library, ScienceDirect, SpringerLink, Scopus, Web of Science, JSTOR, Google Scholar, ArXiv, CNKI, and ERIC.

Report Instructions

Selection of Papers: Carefully choose papers that are most relevant to your topic. Prioritize high-quality, peer-reviewed journal articles and conference proceedings.

Organizing Your Research:

- Begin with an introduction to your chosen topic, explaining its significance in the field of software design.
- Group the findings from your literature survey into thematic areas or trends to provide a structured overview.
- Discuss each finding in detail, focusing on methodologies, outcomes, and how they contribute to the field.

Critical Analysis:

- Critically analyse the developments in your chosen area. Highlight the advancements, challenges, and any gaps in the research.
- Compare and contrast different approaches or solutions proposed in your selected papers.

Future Directions:

- Based on your analysis, suggest potential future research directions.
- Discuss the implications of these findings for the field of software design.

Conclusion:

- Summarize the key insights gained from your literature survey.
- Reflect on how this research has expanded your understanding of the topic.

References:

- Include a complete list of the papers you have reviewed, formatted according to the APA7 or IEEE Referencing Style.

Report Length

There is no specific template. The report should be a minimum of 5 pages and a maximum of 10 pages, including references and figures/diagrams/tables.

Evaluation Criteria

The report will be evaluated holistically without a specific mark distribution, guided by the following criteria:

- Relevance and quality of selected papers.
- Clarity and organization of the literature survey.
- Depth of critical analysis and insight.
- Originality of thought and potential future research directions suggested.
- Adherence to report length, formatting, and citation guidelines.

Information for Plagiarism and Conduct

Your submitted report may be submitted for plagiarism check (e.g., Turnitin). Note that GenAI tools such as ChatGPT to generate material for work submitted for assessment, without any form of editing or acknowledgement, will be investigated as a plagiarism offence. Please also read the following guide developed by the university to understand what academic misconduct means, how you can avoid it, and what the penalties are should you be found to be responsible for committing academic misconduct.

<https://www.abdn.ac.uk/students/academic-life/academic-integrity.php>

Use of AI-Assisted Tools

The use of AI-assisted tools is permitted **only as a supplementary aid** and must not replace your own investigation and drafting effort. Any use of such tools **must be explicitly acknowledged** in the relevant section.

AI tools should be used responsibly and only where they clearly add value. The use of AI must not undermine your own understanding, learning outcomes, or academic integrity. You remain fully responsible for the submitted work.

Late Submission

Unauthorized late submissions may incur penalties, which will substantially reduce your overall CGS points, according to the university policy. You are advised to check the latest policy in this regard, available in the Course Information folder on MyAberdeen (Blackboard).

Submission Instructions

- You should submit a PDF version of your report using the appropriate submission point on Blackboard.
- The name of the PDF file should have the form “JC3506_A1_< your Surname>_<your first name>_<Your Student ID>”. For instance, “JC3506_A1_Smith_John_4568985.pdf”, where 4568985 is your student ID.
- Please try to make your submission file less than 20MB as you may have issues when uploading large files to MyAberdeen.

Questions

Any questions pertaining to any aspects of this assessment, please address them to the course coordinator Dr. Riazul Islam via Blackboard’s Message function available on MyAberdeen’s course site or via email riazul.islam@abdn.ac.uk.