THE GLASGOW SCHOOL OF ART

Glasgow School of Art Course Specification
Course Title: Digital Technologies and Urban Innovation

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Please note that this course specification is correct on the date of publication but may be subject to amendment prior to the start of the Academic Year.

Course Code	HECOS Code	Academic Session
	100594 (50%); 100962 (50%)	**2026-2027**

Course Title	Digital Technologies and Urban Innovation
Course Contact	**Isabel Deakin**

Credits	20
SCQF Level	11
When Taught	Stage 2

Associated Programmes	Master of Science in Sustainable Cities Master of Science in Architectural Futures: Practice Based Research
Lead School	Mackintosh School of Architecture
Other Schools	N/A
Date of Approval	Programme Approval September 2025

Course Introduction

The Digital Technologies and Urban Innovation course introduces students to the evolving role of digital tools and data driven approaches in shaping sustainable, resilient, and equitable urban environments. Focusing on the use of digital technologies in urban design and planning, this course equips students with critical insights into how digital innovation is influencing the future of cities.

Through the application of tools such as Geographical Information Systems (GIS), digital mapping, urban simulation and environmental modelling, students will explore how data can be used to understand urban systems, mitigate climate risk, and inform future-proof strategies for urban resilience and regeneration.

The course highlights global case studies to demonstrate how digital platforms are being used to analyse, visualise, and respond to challenges as a result of the climate emergency. Students will be encouraged to critically evaluate both the potentials and limitations of technology in addressing social and environmental inequality in the urban realm.

Teaching is delivered through lectures, seminars and research-led tutorials.

Through this course, students develop applied digital literacy and a future-oriented perspective in relation to urban sustainability, climate adaptation, and technology-led design.

Course Aims

The aims of the course are to:

professionalism: facilitate a student's critical awareness of ethical, environmental and social responsibilities when applying digital technologies to urban design and planning contexts.

design/create: facilitate a student's development of a digitally informed urban strategy that responds to global frameworks and addresses stie-based challenges related to climate resilience, equity and sustainability.

research: facilitate a student's application of digital tools and data-driven methods in addressing urban issues across global contexts.

communication: facilitate a student's communication of the strengths and limitations of digital approaches in urban design and planning through visual and written analysis of case studies.

skills: facilitate a student's use of digital tools and simulations methods to examine urban form and test adaptive responses to projected environmental or demographic scenarios.

knowledge: facilitate a student's critical understanding of how digital technologies intersect with urban policy frameworks.

Course Intended Learning Outcomes

By the end of this course students will be able to **appraise, integrate and articulate**:

professionalism: a critical awareness of ethical, environmental and social responsibilities when applying digital technologies to urban design and planning contexts.

design/create: a digitally informed urban strategy that responds to global frameworks and addresses stie-based challenges related to climate resilience, equity and sustainability.

research: the application of digital tools and data-driven methods in addressing urban issues across global contexts.

communication: the strengths and limitations of digital approaches in urban design and planning through visual and written analysis of case studies.

skills: digital tools and simulations methods to examine urban form and test adaptive responses to projected environmental or demographic scenarios.

knowledge: a critical understanding of how digital technologies intersect with urban policy frameworks.

Indicative Content

This course introduces students to the tools, theories and global applications of digital technologies in urban design, planning and climate-responsive development. Students will critically explore how digital tools are shaping contemporary approaches to resilient, sustainable and equitable cities.

During the course students will:

- Develop a foundational understanding of how digital technologies are applied in urban contexts.

- Explore how data driven design is used to inform planning, infrastructure development and resource management in response to climate change, urban growth and social inequality.

- Analyse case studies from a variety of geographical contexts to understand how digital tools have been used to address critical issues within cities.

- Critically examine the limitations and ethical implications of digital approaches, including concerns around data privacy, surveillance, and algorithmic bias in urban systems.

- Use digital tools to investigate the urban form and model adaptive responses to projected environmental scenarios.

- Engage with international frameworks and policy instruments e.g., UN Sustainable Development Goals, New Urban Agenda and Net Zero Strategies, and consider how technology can support their implementation at the city scale.

Description of Learning and Teaching Methods
Pedagogy: The course is intended to provide students with a deep understanding of the different technologies currently being used to support the analysis and exploration of cities and how these can be used to support future sustainable strategies. **Delivery:** The course is delivered through regular lectures, seminars and research-led tutorials, using a range of learning and teaching activities. **Timetable:** The course is delivered over 10 weeks, 2 hours per week. **Canvas:** The virtual learning environmental tool Canvas is used for the dissemination, discussion, and access to relevant course information, and to signpost students to other relevant teaching and learning platforms used by GSA.

Indicative Contact Hours	**Notional Learning Hours**
20	200

Description of Formative Assessment and Feedback Methods
Formative feedback is delivered during the course following a formative submission in week 6, offering students the opportunity to obtain staff feedback towards their final submission. As such formative feedback provided fosters reflective learning while supporting the summative graded assessment and feedback process, which generally happens at the end of the course.

Description of Summative Assessment arrangements
Summative assessment is undertaken at the end of the course and is designed and delivered to support student learning. Students' work is assessed against the Intended Learning Outcomes (ILOs) for each course. Summative assessment in this course is undertaken through a coursework assignment in the form of a 3,000-word illustrated report. Coursework assignment submissions involve visual and text-based submissions utilising both digital and physical tools and formats. Written feedback is provided on all summative assessments. All submissions will be assessed and moderated in line with the GSA Code of Assessment. Reassessment opportunities where a student has not passed the course are outlined in the GSA Code of Assessment.

Description of Summative Assessment Method	Weight %	Submission week
Illustrated Report Students are required to submit an illustrated report (3000 words) including a selection of case studies which support the development of the Stage 3 independent research project/ dissertation.	100	Semester 2, week 13

Exchange/Study Abroad	
Can this course be taken by Exchange/Study Abroad students?	No
Are all the students on the course taught wholly by distance learning?	No
Does this course represent a work placement or a year of study abroad?	No
Is this course collaborative with any other institutions?	No
If yes, then please provide the names of the other teaching institutions	

Reading and On-line Resources
Supporting the course, an indicative reading and on-line resource list is accessible via Resource Lists. This list will be reviewed and updated annually. Supervisors, tutors and peers will provide further recommendations appropriate to student's chosen research subject.