Design·AI Education

Principles & Practices for the Classroom

A framework for engaging AI thoughtfully — grounded in human intelligence, ethical judgement, and the power to create.

DIVE

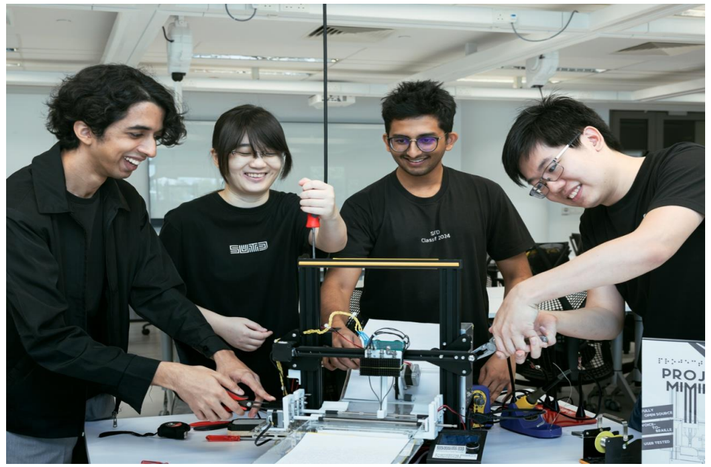
Design·AI Innovation & Venture Exploration

Human-Centred

Future-Work Ready

SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

SUTD is the world's first Design•AI University.
Our graduates are **trilingual**: design innovators who are fluent across Design, AI, and their Domain.



- **Design** — human-centred thinking to frame problems and evaluate AI outputs.
- **AI** — knowing when AI is Tool, Teammate, or Neither* (TTN).
- **Domain** — deep expertise to steer AI, catch hallucinations, place human-centred safeguards, and know when to override.

*Human agency to decide when ***not*** to use AI is a critical element of our SUTD **Design•AI narrative**

OUR VISION

Trailblazing a Better World by Design.

Design·AI aligns with this vision by putting **human and society first** in how we design, innovate, build, and apply AI*.

Human-Centred

Ethically Grounded

Impact-Driven

* knowing when AI is Tool, Teammate, or Neither* (TTN).

PREAMBLE

Still Technically Grounded.

SUTD continues to produce technically excellent leaders who understand human values, contexts, consequences, and when not to act.

SUTD graduates remain technically grounded — across engineering, computing, sciences, design, humanities, arts and the social sciences.

This disciplinary foundation, combined with interdisciplinary breadth, gives them the credibility and capability to lead, innovate, and apply their expertise with judgement.

Design•AI does not replace technical rigour. Instead it **enhances, redefines, and deepens human intelligence with wisdom and societal purpose.**

Two-Lane Approach to Design•AI Education

Engaging AI thoughtfully

LANE 1

Maximizing Human (Student) Potential

Building human intelligence, capabilities, and judgement — anchored in ethics, cultural wisdom, and societal understanding.

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LANE 2

Maximizing Societal & Economic Value

Translating capability into products, services, and societal or economic impact — know how to build deployable and scalable solutions that create value to the society or industry.

Converging in INNOVATION — to create novel, human-centred solutions that drive real-world impact.

Three Principles for Teaching · Two Contexts · One Objective

	PRINCIPLES	CLASSROOM	DIVE — BEYOND THE CLASSROOM
01	**Human Judgement, Critical Thinking & Ethical Reasoning**	Apply critical thinking and ethical reasoning, anchored in discipline knowledge, to evaluate AI's implications and make responsible decisions in class assignments.	Apply discipline knowledge, human judgement, and ethical reasoning to navigate real-world implications in real projects.
02	**Responsible Use, Teaming & Shaping AI**	Use, team with, and extend AI systems responsibly and ethically – including knowing when not to use AI – grounded human-centred principles, data privacy and accountability.	Deploy and extend AI responsibly and ethically on real projects – knowing when not to use AI – with accountability and respect for the industries and communities they affect.
03	**Innovation & Creation for Real Impact (DIVE Principle)**	Conceive and create prototype solutions, insights or analyses, with societal and economic impact in mind.	Build and deploy real solutions that create societal and economic value responsibly.

Both contexts develop **Knowledge, Skills and Creation**.

The Classroom Context

PRINCIPLES FOR TEACHING IN THE CLASSROOM

01

Human Judgement, Critical Thinking & Ethical Reasoning

Apply critical thinking and ethical reasoning, anchored in discipline knowledge, to evaluate AI's implications and make responsible decisions in class assignments.

***Think* critically and ethically**

02

Responsible Use, Teaming & Shaping AI

Use, team with, and extend AI systems responsibly and ethically — including knowing when not to use AI — grounded in human-centred principles, data privacy, and accountability.

***Act* responsibly with AI**

03

Innovation & Creation for Real Impact (DIVE Principle)

Conceive and create prototype solutions, insights, or analyses, with societal and economic impact in mind.

***Create* with societal and economic impact**

LEARNING & ASSESSMENT IN THE CLASSROOM

01

Assessment Methods

Assessments span a spectrum— some invite AI collaboration; others require independent work without AI. Human judgment always in the loop.

02

Process-Based Learning & Application

From product to process — drafts, decisions, critiques — link learning outcomes to real-world applications and industry-relevant skills.

03

Human–AI Teaming

Students bring discipline knowledge and human insights to guide, challenge, and improve working with AI.

04

Mastery of Creation

From mastery of knowledge, to mastery of skill, to **mastery of creation** — what can a student build, design or innovate that only a human can conceive?

Assessment spectrum: process-based learning · AI-augmentation with human judgement · mastery of creation as the highest bar

Applying the Principles Across SUTD Pillars and Clusters

How this could come alive for EPD · ESD · CSD · ASD · SMT · DAI · HASS

EPD ESD CSD ASD SMT DAI HASS

EPD · Engineering Product Development

Focus: physical–digital product innovation | mechatronics | manufacturing | human-centred design

01 Human Judgement, Critical Thinking & Ethical Reasoning

FACULTY

Design briefs where students steer an AI generation: optimisation loop, rejecting or modifying candidates that fail physical constraints. The student's role is loop operator, not one-shot critic. Design is judgement under constraint.

STUDENTS

Run multiple AI-generated design candidates through physics evaluation. For each iteration, identify the constraint that forced rejection or modification and steer the next generation accordingly. AI proposes; physical reality decides; the student operates the loop.

02 Responsible Use, Teaming & Shaping AI

FACULTY

Embed AI tools into engineering tasks — ideation, simulation, code generation — to accelerate design and exploration while preserving physical rigour.

STUDENTS

Use AI tools to generate, simulate, and refine designs faster; validate outputs against real material, mechanical, and sensor constraints.

03 Innovation & Creation for Real Impact (DIVE Principle)

FACULTY

Deploy AI-enabled physical systems against an engineering brief, assess on system performance, test validation, and honest acknowledgement of design limits.

STUDENTS

Deliver a working physical system with embedded AI — performance tested and validated against engineering metrics, with design limitations explicitly identified and explained.

Assessment lens: TTN decision logs · iterative prototype reviews · final working prototype + reflective portfolio

EPD COURSE EXAMPLE

30.007 Engineering Design Innovation

Context: Students design and prototype a novel consumer product, integrating user research, mechanical engineering and digital fabrication over 13 weeks.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students may use generative AI tools — LLMs and text-to-CAD — for early design ideation, treating outputs as hypotheses to be tested, not solutions to be accepted. Identifying where the AI's assumptions break against physical reality.

02 Responsible Use, Teaming & Shaping AI

AI assists ideation and FEA simulation interpretation — students document accepted, modified or rejected AI suggestion with engineering justification. Students build a sensing-to-decision pipeline: physical sensors feed real-time data into an AI/ML component driving an actuation decision or physical output.

03 Innovation & Creation for Real Impact (DIVE Principle)

A working prototype assessed on originality, engineering validity and human-centred fit.

Assessment: *TTN decision log (20%) · Iterative prototype review (40%) · Final working prototype + portfolio (40%)*

ESD · Engineering Systems and Design

Focus: data and business analytics / optimisation / manufacturing and service operations / systems modeling and simulation / operations research

01 Human Judgement, Critical Thinking & Ethical Reasoning

FACULTY

Require students to leverage, but question and supervise AI-generated outputs in various course elements. Understand the theory to discriminate what to use/reject. AI outputs are to be evaluated with full "supervision" and not blindly. AI can be a force/productivity multiplier.

STUDENTS

Apply domain knowledge in logistics, healthcare or energy systems to interrogate AI recommendations — identifying where model assumptions break against real-world issues and complexity.

02 Responsible Use, Teaming & Shaping AI

FACULTY

Embed AI tools into live system design tasks — students use ML for demand forecasting and simulation, documenting every AI-assisted decision with a systems justification.

STUDENTS

Use, team with, and extend AI systems — composing decision pipelines that handle real uncertainty across supply chains, urban transportation, or healthcare operations.

03 Innovation & Creation for Real Impact (DIVE Principle)

FACULTY

Leverage AI to enhance creativity and generation and critique of alternatives in systems design

STUDENTS

Deliver a deployable system design or policy proposal — decisions are enhanced/augmented by AI but owned by the student's critique.

Assessment lens: model validity reports · system simulation reviews · policy design portfolio

ESD COURSE EXAMPLE

40.002 Optimization

Context: Students learn fundamental optimization methodologies, including linear programming, mixed-integer linear programming, and dynamic programming, with emphasis on modelling, algorithms, and real-world applications over a 13-week course.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students critically assess modelling assumptions, solution validity, and limitations. They learn to interpret solutions, perform sensitivity analysis, and understand when models fail to capture real-world complexity

02 Responsible Use, Teaming & Shaping AI

Students learn to use AI tools (e.g., LLMs) to support modelling and solution processes. Emphasis is placed on verifying correctness of AI-generated formulations and solutions, understanding solver outputs, and integrating AI responsibly into optimization workflows.

03 Innovation & Creation for Real Impact (DIVE Principle)

Students move beyond standard formulations to design new models and solution approaches for complex systems. They learn to translate real-world problems into optimization frameworks while incorporating practical considerations such as robustness, stochasticity, and fairness.

Assessment: *Mid-term evaluation (30%), project (20%), assignments (20%) , final-term evaluation (30%)*

ESD COURSE EXAMPLE

40.260 Supply Chain Management

Context: Students learn quantitative models for supply chain design and operation — covering demand forecasting, inventory management, network and logistics planning, revenue management, and supply chain contracts across a 13-week course.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students do not mechanically apply formulas. They critique industry cases, interrogate modelling assumptions, and — in the supply chain simulation games — make live judgement calls on network and inventory decisions where no single model has all the answers.

02 Responsible Use, Teaming & Shaping AI

Students learn to use AI as a structured preparation tool for supply chain simulation games — building demand forecasts, sizing inventory policies, and stress-testing factory and warehouse decisions before the game clock starts. Emphasis is on verifying AI outputs and treating AI as structured pre-game analysis, not a shortcut.

03 Innovation & Creation for Real Impact (DIVE Principle)

Students go beyond textbook solutions to devise original supply chain strategies — in the simulation games, they design multi-region factory and warehouse networks from scratch, adapt them mid-game, and apply SCM frameworks to industries and scenarios not covered in class.

Assessment: *Homework (25%) · Game 1 presentation (20%) · Game 2 presentation (25%) · Transportation case report (20%) · Class participation (10%)*

ESD COURSE EXAMPLE

40.017 Probability and Statistics

Context: Students design and prototype a novel consumer product, integrating user research, mechanical engineering and digital fabrication over 13 weeks.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students do not blindly apply formulas, instead, they should question everything. This is about knowing when models, assumptions, and conclusions are valid for statistics analysis.

02 Responsible Use, Teaming & Shaping AI

Students learn to use AI to help them enhance the learning experience, not a shortcut. This includes knowing what AI is good at (for prob & stats), verifying outputs, and guiding it effectively.

03 Innovation & Creation for Real Impact (DIVE Principle)

Students move beyond applying known methods to designing models, creating new approaches, and applying statistics to novel problems

Assessment: *TTN decision log (20%) · Iterative prototype review (40%) · Final working prototype + portfolio (40%)*

CSD · Computer Science and Design (ISTD)

Focus: software engineering | AI/ML systems | cybersecurity | human–computer interaction

01 Human Judgement, Critical Thinking & Ethical Reasoning

FACULTY

Assign AI generated code or test cases for students to critique, evaluate, test and verify. Assign grading components on process of evaluating these outputs instead of just final code.

STUDENTS

Apply algorithms, complexity theory, security and design patterns expertise to refactor AI-generated code. Identify hallucinations, logic errors and vulnerabilities AI misses

02 Responsible Use, Teaming & Shaping AI

FACULTY

Design learning activities where students' interaction with AI increases quality and productivity — using industry-based workflows for human-AI collaboration in software engineering. Assessments focus on designing AI-powered solutions, evaluating AI models, verifying bias, and measuring impact, with feedback loops for continuous improvement.

STUDENTS

Produce initial specification and design for AI to generate. Create guardrails and context from human expertise for AI agent. Build AI models and AI-powered applications (intelligent interfaces, ML pipelines, AI agents) that demonstrate end-to-end ownership and design of system architecture.

03 Innovation & Creation for Real Impact (DIVE Principle)

FACULTY

Design open-ended project and studio work for students to work on innovating solutions for real-world problem through AI-powered solution and design.

STUDENTS

Conceive, design and deploy an AI-enabled system: problem framing, architecture, deployment and evaluation with workflow and practices improved through collaborating with AI.

Assessment lens: TTN decision logs · iterative prototype reviews · final working prototype + reflective portfolio

CSD COURSE EXAMPLE

50.003 Elements of Software Construction

Context: Students design and implement an enterprise-level software product, integrating user research, system design, development, testing and deployment over 13 weeks.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students apply software engineering judgement to critically evaluate AI-generated artefacts such as requirements, test cases, and documentation, validating them against system constraints, edge cases, stakeholder needs, and architectural correctness before integration, with human decision-making remaining the final authority.

02 Responsible Use, Teaming & Shaping AI

Students iteratively work with AI tools across the software development lifecycle — for ideation, prototyping, testing, and documentation — while designing and integrating AI components into system solutions, defining their roles within the architecture, and applying formal evaluation frameworks to assess effectiveness, correctness, and suitability. Human feedback remains the source of truth throughout.

03 Innovation & Creation for Real Impact (DIVE Principle)

Innovation is demonstrated through system-level redesign, where students creatively integrate AI and existing technologies to re-architect workflows, enhance efficiency, and address user pain points, using AI to accelerate exploration and prototyping while focusing on meaningful value creation.

Assessment: code review + AI critique reports (20%) · architecture documentation (40%) · Final product + testing artefact (40%)

ASD · Architecture and Sustainable Design

Focus: spatial design | sustainability | built environment | digital fabrication

01 Human Judgement, Critical Thinking & Ethical Reasoning

FACULTY

Require students to justify every AI-generated spatial or structural output against environmental, cultural, and material constraints. AI-generated forms must be tested against physical and human realities.

STUDENTS

Apply architectural and sustainability knowledge to evaluate AI design outputs — identifying where generative tools miss cultural context, material limits, or human-scale needs.

02 Responsible Use, Teaming & Shaping AI

FACULTY

Integrate generative AI and parametric tools into design studios — students use, team with, and extend AI for spatial optimisation, documenting design decisions with architectural reasoning.

STUDENTS

Use, team with, and extend AI generative tools to explore sustainable design solutions — composing spatial systems grounded in climate, community, and material constraints.

03 Innovation & Creation for Real Impact (DIVE Principle)

FACULTY

Assess built or fabricated artefacts against a real-world brief — scored on spatial quality, sustainability impact, and the student's ability to go beyond what AI alone could conceive.

STUDENTS

Deliver a fabricated prototype or design proposal addressing a real environmental or community challenge — the student's creative vision leads, AI is a tool not the author.

Assessment lens: design process journals · crits with AI-use declaration · final fabricated artefact

ASD COURSE EXAMPLE

20.318 Creative Machine Learning

Context: Students speculate, design and prototype a creative architectural design application, integrating design intent, expressing personal sensibility, steering design edit precision, and iteratively evaluating outputs over 13 weeks.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students first ground their epistemic literacy of architecture through assigned critical readings on AI and Architecture as well as critique sessions with instructors. Aligning intent formulation with design speculation proceeds hand-in-hand dynamically during the rapid creative AI app prototyping. Students account for their AI-generated (e.g., vibe-coded) codebase in relation to their design intent input and design app outputs / artefacts.

02 Responsible Use, Teaming & Shaping AI

Students direct and orchestrate distribution of work and autonomy among their own human and non-human teammates, taking into account human-centred consideration of social-technical application of AI in the actual design process. Students work across different modes of AI services/tools/models and steer their design processes strategically for optimal design outcomes.

03 Innovation & Creation for Real Impact (DIVE Principle)

A working prototype assessed on conceptual novelty, architectural relevance, precision of design intent alignment (form + function), and immediate/near future industry use cases.

Assessment: *TTN decision log (20%) · Iterative prototype review (40%) · Final working prototype + portfolio (40%)*

DAI · Design and Artificial Intelligence

Focus: design thinking | AI systems | human-centred innovation | holistic design

01 Human Judgement, Critical Thinking & Ethical Reasoning

FACULTY

Require students to critically evaluate AI-generated design concepts against human needs, cultural context, and ethical implications — distinguishing AI-assisted ideation from genuine design insight.

STUDENTS

Apply design thinking and AI literacy to interrogate generative outputs — identifying where AI misses the human story, the cultural nuance, or the ethical consequence.

02 Responsible Use, Teaming & Shaping AI

FACULTY

Embed AI tools across the design process — students use, team with other students, and extend AI for user research, prototyping and testing, documenting every AI-assisted decision with a design rationale.

STUDENTS

Use, team with fellow students, and extend AI systems across the full design process — from intelligent user research tools to generative prototyping — grounded in human-centred principles and domain expertise.

03 Innovation & Creation for Real Impact (DIVE Principle)

FACULTY

Assess design prototypes against a real human or societal challenge — scored on innovation depth, ethical grounding, and the student's ability to conceive solutions AI alone could not produce.

STUDENTS

Deliver a deployable design prototype or service concept — the creative vision is the student's own, with AI contributions declared and critically reflected upon.

Assessment lens: design process documentation · AI ethics reflection · final design prototype + deployment brief

DAI COURSE EXAMPLE

60.002 AI Applications in Design

Context: Students use AI for data driven design analysis and design synthesis.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students to justify the data sources used, the decisions made in finalizing the solutions, the sensitivity of the results, and the limitations of the work done.

02 Responsible Use, Teaming & Shaping AI

For Design Analysis, students use a mixture of AI tools to collect data off the internet to formulate design requirements for new product versions.
For Design Synthesis, students use Autodesk Fusion 360 (Generative Design) to generate solution alternatives based on sustainability considerations.

03 Innovation & Creation for Real Impact (DIVE Principle)

The provision of an AI partner that can generate sets of design requirements for new products, and the provision of a 3D physical solution that addresses sustainability considerations.

Assessment: *Peer contribution (10%) · Continuous Assessment (10%) · Design Analysis (40%) · Design Synthesis (40%)*

DAI 2.0 COURSE EXAMPLE

60.xxx Mind, Machines & Design (NEW)

Context: A new core course that brings together psychology, philosophy, and design in relation to AI systems and processes.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students analyze key theories and evidence from psychology, philosophy, and design to explain human and machine intelligence; critically evaluate claims about how AI simulates, supports, or challenges human thinking and creativity; and apply insights to make informed judgments about the design and use of AI.

02 Responsible Use, Teaming & Shaping AI

Students use selected AI tools in guided exercises to examine human–AI interaction in practice, reflect critically on their assumptions and responses, and evaluate the strengths, limits, and implications of these systems.

03 Innovation & Creation for Real Impact (DIVE Principle)

Design perspectives equip students to frame problems, generate ideas, and develop innovative responses, while philosophical and psychological perspectives support critical judgment about when and how AI can be used appropriately in the creation of new solutions.

Assessment: *Presentation (20%) · Guided exercises (40%) · Final exam (40%)*

SMT · Science, Mathematics and Technology

Focus: mathematics | physics | computational science | quantitative reasoning

01 Human Judgement, Critical Thinking & Ethical Reasoning

FACULTY

Develop AI design capability beyond tool usage by redesigning hands-on activities into both AI-enabled and AI-less learning experiences that demand explicit reasoning, critical analysis, and human judgment..

STUDENTS

Evaluate AI outputs against theory and data, making explicit assumptions and trade-offs, and grounding decisions in quantitative and disciplinary reasoning.

02 Responsible Use, Teaming & Shaping AI

FACULTY

Integrate AI applications into scientific inquiry through problem-centred assignments and projects, while leveraging AI to streamline course preparation and administrative workflows.

STUDENTS

Use, team with, and extend AI applications for problem-solving, requiring explicit quantitative justification of assumptions and methods, critical interrogation of outputs, and avoidance of black-box reasoning.

03 Innovation & Creation for Real Impact (DIVE Principle)

FACULTY

Lead innovation by developing AI-enabled learning initiatives that generate new pedagogical prototypes and methodologies informed by DesignAI practice and experimentation.

STUDENTS

Demonstrate innovation by creating new prototypes and approaches, integrating design thinking, domain knowledge, and iterative experimentation informed by DesignAI.

Assessment lens: proof and derivation logs · computational experiment reports · mathematical modelling portfolio

DES COURSE EXAMPLE

Designing Energy Systems: AI-Augmented Solar Food Dehydrator

Context: Students design, build, and optimise a solar-powered food dehydrator, then build a Python-based AI agent in one day (~4.5 hrs) that analyses sensor data, diagnoses performance bottlenecks, and recommends design improvements using a local LLM (Ollama). An optional bonus phase closes the control loop via servo-driven vents, crossing into Physical AI.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students interpret sensor data (temperature, humidity, mass, solar irradiance, fan power) to diagnose dehydrator performance, treating AI outputs as hypotheses to be validated against physical observations. They critically evaluate every AI recommendation—deciding whether to follow it, modify it, or reject it—based on engineering reasoning, data limitations, and real-world constraints of their prototype

02 Responsible Use, Teaming & Shaping AI

Students design and build a Python AI agent that structures sensor data into prompts, calls a local LLM (Ollama), and produces structured engineering analysis. They learn to shape AI behaviour through prompt design, iteratively refining instructions to improve output quality. AI is treated as a design teammate—students learn to team with it effectively while maintaining engineering judgement over its recommendations.

03 Innovation & Creation for Real Impact (DIVE Principle)

Students deliver a working AI agent that diagnoses dehydrator performance and suggests design improvements, supported by reproducible code, computed engineering metrics, and clear documentation. Advanced teams close the control loop—the agent sends servo commands to physical vents, creating a novel Physical AI system that senses, reasons, acts, and learns from outcomes

Assessment: *TTN decision log (20%) · Iterative prototype review (40%) · Final working prototype + portfolio (40%)*

SMT COURSE EXAMPLE

01.116 Artificial Intelligence for Healthcare

Context: Students design and prototype an AI-enabled healthcare solution over 13 weeks, integrating domain knowledge, data analysis, modelling, and system implementation with real-world constraints.

01 Human Judgement, Critical Thinking & Ethical Reasoning

Students frame the healthcare problem by interpreting clinical definitions of lookalike medication, analysing stakeholder needs and constraints, and treating AI outputs as hypotheses to be validated against domain knowledge, data limitations, and real-world conditions.

02 Responsible Use, Teaming & Shaping AI

Students design and implement AI models for image-based medication identification, explicitly justifying model choices, ground-truth labelling, and evaluation metrics. AI is iteratively refined through experimentation, generalization tests, and critical analysis of performance.

03 Innovation & Creation for Real Impact (DIVE Principle)

Students deliver a working AI prototype that reliably distinguishes lookalike medications under varied conditions, supported by reproducible code, sound experimental results, and clear documentation demonstrating practical relevance to healthcare practice.

Assessment: *TTN decision log (20%) · Iterative prototype review (40%) · Final working prototype + portfolio (40%)*

HASS · Humanities, Arts and Social Sciences

Focus: critical inquiry | ethics | social analysis | culture & communication | human-centred design

01 Human Judgement, Critical Thinking & Ethical Reasoning

FACULTY

Require students to critically evaluate AI-generated arguments and narratives for bias, cultural assumptions, and epistemic gaps — AI cannot replace the human act of interpretation.

STUDENTS

Apply humanistic and social science frameworks to interrogate AI systems and outputs — identifying where algorithmic reasoning misses historical context, power dynamics, or ethical complexity; examining the societal impact of AI on work, politics, and life

02 Responsible Use, Teaming & Shaping AI

FACULTY

Integrate AI writing and research tools into analytical tasks — students use, team with, and extend AI while documenting every editorial decision with a scholarly justification.

STUDENTS

Use, team with, and extend AI research tools to compose richer analyses — synthesising sources, surfacing patterns, and constructing arguments that go beyond what either AI or human can generate alone

03 Innovation & Creation for Real Impact (DIVE Principle)

FACULTY

Assess original essays, research projects, or creative works making a genuine intellectual contribution — scored on depth of argument, originality, and ethical use of AI.

STUDENTS

Deliver an original piece of research, writing, or creative work — AI expands the scope of ideation and depth of knowledge, but the student's voice and intellectual contribution leads

Assessment lens: annotated AI-use logs · argumentative essays · oral presentations · original research or creative project

HASS COURSE EXAMPLE

02.181HT AI & Society

Context: A HASS elective exploring how AI systems shape — and are shaped by — political economy, ethics, culture and law. Students analyse real AI deployments and design policy interventions.

01 Human Judgement, Critical Thinking & Ethical Reasoning

HASS expertise (critical theory, ethics, sociology) equips students with the analytical vocabulary to identify and interrogate underlying assumptions in AI design that technical metrics alone cannot reveal.

02 Responsible Use, Teaming & Shaping AI

Students learn to use AI while critically reflecting on and contextualizing AI outputs rather than accept them as pregiven. They also become sensitized to how AI systems are built and deployed responsibly, understanding the labor, policy instruments, and power relations behind real deployments.

03 Innovation & Creation for Real Impact (DIVE Principle)

Each student produces an original research proposal— a real AI case, applying HASS theory showing how social insights can guide creative, context-aware AI innovation.

***Assessment** : AI use reflection journal (20%) · Sociotechnical case analysis (30%) · Speculative design (50%)*

SUTD is not just adapting to AI – we are defining what it means to educate with Design•AI

Design•AI Innovation

Exercising AI agency through design thinking, domain expertise and the drive to create.

Human-centred

Safeguarding critical thinking, ethical reasoning, responsible use — for student flourishing and societal trust.

Future-work Ready

Graduating innovators who move from mastery of knowledge, to mastery of skills, to mastery of creation — leading responsibly in an AI-transformed world.

THANK YOU