# WM9QD-15 Ethical Artificial Intelligence Implementation

## 26/27

**Department**
WMG
**Level**
Taught Postgraduate Level
**Module leader**
Awinder Kaur
**Credit value**
15
**Module duration**
4 weeks
**Assessment**
Multiple
**Study location**
University of Warwick main campus, Coventry

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## Description

## Introductory description

This module explores the ethical, legal, and societal challenges surrounding the development and deployment of Artificial Intelligence (AI). With a strong applied focus, students will critically engage with real-world case studies, governance frameworks, and risk mitigation strategies, while exploring issues such as bias, fairness, transparency, accountability, and privacy. Students will examine AI ethics across industries—healthcare, automotive, and financial services—and learn to implement principles such as Privacy by Design and Human-in-the-Loop design.

The module promotes hands-on application of ethical AI frameworks and industry tooling, equipping students to make responsible decisions as future AI practitioners.

## Module aims

The Ethical Artificial Intelligence Implementation module aims to:

1. Equip students with a critical understanding of ethical principles, risks, and responsibilities in AI.

2. Explore the application of legal frameworks, industry governance standards, and contractual risk strategies.
3. Enable practical skills in ethical risk auditing, transparency techniques, and fairness assessments.
4. Encourage inclusive dialogue, collaboration, and ethical deliberation through interactive, role-based debates.
5. Provide domain-specific insight into ethical challenges in AI across key sectors.

## Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

1: Foundations of AI Ethics
Overview of ethical theories (utilitarianism, deontology, virtue ethics)
Historical AI ethics failures and lessons learned
Ethical principles for trustworthy AI (European Union (EU); Institute of Electrical and Electronics Engineers (IEEE) ; Organisation for Economic Co-operation and Development (OECD))

2: Bias, Fairness, Transparency and Privacy
Algorithmic bias, fairness metrics, and lifecycle fairness auditing
Practical explainability: SHapley Additive exPlanations (SHAP), Local Interpretable Model-agnostic Explanations (LIME), model cards
Privacy by Design (PbD), managing Personally Identifiable Information (PII), data residency and cross-border risks

3: Governance, Regulation and Responsibility
UK, EU (AI Act), US policy landscape: comparative analysis
Governance frameworks (e.g. NIST, OECD, ISO standards)
Tooling risk scoring and supplier indemnity strategies
Responsibility and accountability in autonomous systems

4: Ethical AI in Practice: Sectoral Insights & Debates
Case studies: healthcare, autonomous driving, credit scoring
Human-in-the-Loop (HITL) design and AI literacy
Role-based ethical deliberation and scenario analysis
Ethical audits of AI use cases

## Learning outcomes

By the end of the module, students should be able to:

- Critically evaluate ethical theories and apply them to the development and governance of AI systems.
- Analyse and assess AI systems for bias, fairness, transparency, and privacy using appropriate methodologies and tools.

- Formulate and justify ethical guidelines and governance strategies that align with regulatory and legal requirements across jurisdictions.
- Appraise the societal and industry-specific impacts of AI through evidence-based ethical reasoning.
- Synthesise diverse stakeholder perspectives to address complex ethical dilemmas in AI through collaborative debate and communication.

## Indicative reading list

Reading lists can be found in Talis

## International

Topics are of high international demand

## Subject specific skills

Ethical Reasoning
Regulatory Knowledge
Bias Detection and Mitigation
Privacy Protection

## Transferable skills

Critical Thinking
Communication
Collaboration
Problem-Solving

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## Study

## Study time

| Type | Required |
| --- | --- |
| Lectures | 10 sessions of 1 hour (7%) |
| Seminars | 20 sessions of 1 hour (13%) |
| Online learning (independent) | 30 sessions of 1 hour (20%) |
| Private study | 30 hours (20%) |
| Assessment | 60 hours (40%) |
| Total | 150 hours |

## Private study description

Private study will include preparing for lectures and seminars, reviewing lecture notes, and engaging with required readings and multimedia resources

## Costs

No further costs have been identified for this module.

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## Assessment

You must pass all assessment components to pass the module.

### Assessment group A

| | Weighting | Study time | Eligible for self-certification |
|---|---|---|---|
| Group Assessment | 30% | 18 hours | No |
| Stakeholder role-based debate on a real-world ethical AI dilemma, demonstrating collaborative ethical reasoning, societal impact reflection, and communication across diverse perspectives.<br><br>Peer Marking Process will be adopted in this assessment | | | |
| Individual Ethical AI Audit Report | 70% | 42 hours | Yes (extension) |
| An in-depth ethical audit of a selected AI system, addressing bias, fairness, transparency, regulatory alignment, privacy, and sectoral context. Includes evidence of tool use (e.g., SHAP, AI Fairness 360) and governance frameworks. | | | |

### Assessment group R

| | Weighting | Study time | Eligible for self-certification |
|---|---|---|---|
| Individual Presentation with Group Reflection | 30% | | No |
| This assessment involves analysing a real-world case study involving ethical considerations in AI development and deployment. Students are expected to critically engage with the principles of collaborative reasoning by exploring how multi-stakeholder debate might inform or challenge ethical decisions in the chosen case study. Students will prepare and submit a recorded individual presentation. | | | |
| Individual Ethical AI Audit Report | 70% | 42 hours | No |

### Feedback on assessment

Written feedback for group assessment and individual essay.

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## Availability

There is currently no information about the courses for which this module is core or optional.