

Chapter 1: Respect for Ethical Rules and Integrity

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Chapter 1: Respect for Ethical Rules and Integrity

1.1. Introduction

The contemporary university is no longer limited to the transmission of disciplinary knowledge or technical expertise. It plays a central role in shaping **critical thinking, ethical awareness, professional responsibility, and civic values**. In modern societies characterized by rapid technological innovation, digital transformation, and increasing societal expectations, universities are required to ensure not only technical excellence but also ethical reliability.

Ethics and integrity have thus become **structural pillars** of higher education. The credibility of academic degrees, the trustworthiness of scientific publications, and public confidence in engineers and researchers depend directly on compliance with ethical principles. A technically competent engineer who lacks ethical judgment may cause serious harm, including unsafe designs, environmental damage, or loss of public trust.

Ethics refers to a reflective process concerning the values that guide human behavior, such as honesty, fairness, responsibility, and respect. Deontology, on the other hand, translates these values into **explicit rules, codes, and obligations** governing professional and academic practices. In the university context, ethics and deontology are inseparable: ethical reflection gives meaning to rules, while rules provide concrete guidance for ethical behavior.

All academic activities; learning, examinations, research projects, laboratory work, internships, and thesis preparation, are conducted within a **normative ethical framework**. Violating this framework undermines not only individual credibility but also the integrity of the entire academic institution.

This chapter aims to establish a solid ethical foundation by clarifying core principles, responsibilities, and risks related to unethical behavior. It prepares students to adopt a **responsible academic posture**, which is essential for their future role as engineers, researchers, and decision-makers.

1.2. Consultation of the University Code of Ethics and Professional Conduct

The **University Code of Ethics and Professional Conduct** is the primary reference document governing ethical behavior within higher education institutions. Adopted by the Ministry of Higher Education and Scientific Research, it defines a shared framework applicable to all members of the academic community.

Consulting this code is not a formal or symbolic act; it is a **professional obligation**. Familiarity with the code enables students to:

- Clearly understand acceptable and unacceptable behaviors;
- Prevent unintentional academic misconduct;
- Protect themselves in situations involving disputes, evaluation conflicts, or ethical dilemmas.

Regular consultation is particularly important in situations involving:

- Group projects and shared authorship;
- Use of digital resources and online platforms;
- Research data management;
- Academic evaluations and examinations.

The availability of the code in **French, English, and Arabic** ensures inclusiveness and accessibility, reflecting the university's commitment to transparency and fairness. To ensure accessibility for all, the code is made available by the Ministry in three languages:

1.2.1. English Version (02/08/2023)

University Charter of Deontology and Ethics



[https://services.mesrs.dz/cned/download/UNIVERSITY_CHARTER_OF_DEONTOLOGY AND ETHICS-2-8-2023.pdf](https://services.mesrs.dz/cned/download/UNIVERSITY_CHARTER_OF_DEONTOLOGY_AND_ETHICS-2-8-2023.pdf)

1.2.2. French Version (02/08/2023)

University Code of Ethics and Professional Conduct

↪ <https://services.mesrs.dz/cned/download/Charte du Conseil-02-08-2023.pdf>

1.2.3. Arabic Version (02/08/2023)

ميثاق الآداب والأخلاقيات الجامعية

↪ <https://services.mesrs.dz/cned/download/Charte du Conseil-02-08-2023-ar.pdf>

1.2.4. Pedagogical Recommendation

Students are strongly encouraged to:

- Read the code at the beginning of each academic year;
- Highlight articles related to plagiarism, fraud, sanctions, and students' rights;
- Discuss ambiguous situations with supervisors or academic advisors before acting.

Example:

If a student is unsure whether reusing parts of a previous report is allowed, consulting the code can prevent unintentional self-plagiarism.

1.3. The University Code of Ethics and Professional Conduct

The **University code (Charter) of Ethics and Professional Conduct** constitutes the fundamental reference document governing the values, principles, and rules of conduct within Algerian universities. Developed and regularly updated under the authority of the **Ministry of Higher Education and Scientific Research**, this Charter applies to all members of the academic community, including students, teacher-researchers, researchers, as well as administrative and technical staff.

The primary objective of the Charter is to establish an institutional culture based on **integrity, responsibility, and mutual respect**. It defines a common normative framework aimed at harmonizing individual and collective behaviors while ensuring the credibility of higher education and scientific research. In this respect, the Charter goes beyond a simple declaration of principles and constitutes a genuine regulatory instrument governing university life.

The Charter is founded on several essential ethical principles, including **academic freedom, commitment to scientific truth, objectivity, critical thinking, intellectual integrity, fairness, and respect for human dignity**. These principles guide teaching practices, student assessment, research activities, and professional relationships within the university. Their observance is indispensable to maintaining a climate of trust and serenity conducive to learning and knowledge production.

Furthermore, the Charter explicitly defines the **rights and duties** of each category of academic stakeholders. It emphasizes that the rights granted are necessarily accompanied by obligations, including compliance with regulations,

prevention of conflicts of interest, the fight against fraud and plagiarism, and the rejection of all forms of discrimination, harassment, or violence. This approach aims to promote individual accountability and foster sustainable ethical behavior within the academic community.

Finally, the University Charter of Ethics and Professional Conduct specifies the **offenses and sanctions** applicable in the event of non-compliance with the established rules. These sanctions may be pedagogical, administrative, or criminal in nature, depending on the severity of the violations. This disciplinary dimension highlights the binding nature of the Charter and reinforces its role in safeguarding academic and institutional integrity.

Thus, the University Charter of Ethics and Professional Conduct constitutes an indispensable foundation for understanding and applying the rules of ethics and integrity in the academic environment. Knowledge of and compliance with this Charter are essential to ensuring high-quality education and preparing students for responsible professional practice aligned with societal values.

1.3.1. Objectives and Scope of the Charter

At this level of education (**first-year Master's degree**), the Charter assumes particular importance, as students are no longer merely recipients of knowledge but become active participants in **scientific research, technological innovation, and, ultimately, the industrial sector**. The Charter is therefore intended to guide this transition toward increased academic and professional responsibility.

The Charter pursues several essential objectives:

- To establish a culture of integrity and responsibility;
- To guarantee the credibility of academic degrees and scientific work;
- To prevent ethical misconduct in teaching, research, and assessment;
- To strengthen trust between the university and society.

It is not limited to moral recommendations but constitutes an official normative document, the violation of which may result in disciplinary, administrative, or even criminal sanctions.

Example:

A Master's thesis based on falsified experimental results may not only be invalidated

but may also compromise the student's future doctoral enrollment or industrial recruitment.

1.3.2. Fundamental Ethical Principles Stated in the code

The Charter is based on a set of structuring principles that guide academic and scientific practice.

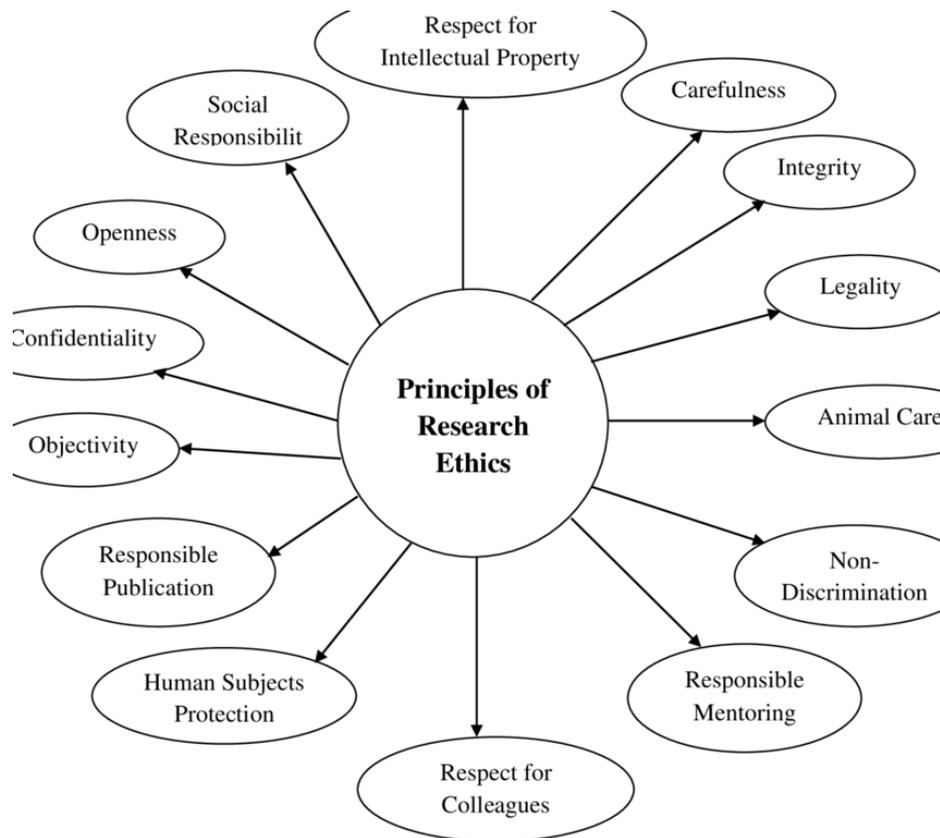


Figure 1 Principles of research Ethics in the code

1.3.2.1. Academic Freedom and Responsibility

Academic freedom guarantees the right to choose research topics, propose innovative models or methods, and present scientific results, even when they challenge established assumptions. However, this freedom is inseparable from **scientific responsibility**, which prohibits any deviation toward unfounded opinions or unverified results.

Example:

A student may propose a new permanent magnet electrical machine model, provided that all assumptions are rigorously justified and the results are validated through simulation or experimentation.

1.3.2.2. Commitment to Scientific Truth, Objectivity, and Critical Thinking

The Charter requires research to be based on:

- The accuracy and reliability of data;
- Objectivity in analysis;
- Critical assessment of one's own results.

Example:

When a simulated machine efficiency appears abnormally high, the student must investigate potential causes—such as simplifying assumptions, parameter errors, or neglected losses—rather than presenting the result as definitive.

1.3.2.3. Integrity and Intellectual Honesty

Integrity implies:

- Prohibition of plagiarism;
- Proper acknowledgment of others' work;
- Absence of data manipulation or result distortion.

Example:

Reproducing a machine diagram or mathematical model from an IEEE article without proper citation constitutes a direct violation of the Charter, even if the remainder of the work is original.

1.3.2.4. Mutual Respect and Non-Discrimination

This principle is fundamental in research laboratories and collaborative projects. The Charter prohibits all forms of:

- Discrimination;
- Moral or sexual harassment;
- Abuse of authority.

Example:

In a group project on vector control of induction machines, excluding a student from technical decisions or failing to acknowledge their contribution constitutes an ethical violation.

1.3.3. Rights and Duties of Master's-Level Students

The Charter emphasizes that students are entitled to fundamental rights, including:

- The right to high-quality scientific supervision;
- The right to fair and transparent assessment;
- The right to respect and dignity.

In return, Master's students have enhanced obligations:

- To comply with the rules of scientific research;
- To avoid all forms of fraud and plagiarism;
- To adopt responsible behavior in the use of equipment and data.

1.3.4. Sanctions for Non-Compliance with the Charter

The Charter specifies that any violation of ethical rules may result in:

- **Pedagogical sanctions** (cancellation of work, failing grades);
- **Disciplinary sanctions** (warning, temporary or permanent exclusion);
- **Criminal sanctions**, depending on the severity of the misconduct (fraud, corruption, compromise of examination integrity).

Example:

The dissemination of examination questions or solutions through digital means is subject to criminal prosecution in addition to university sanctions.

1.3.5. Role of the Charter in Engineering Education

Compliance with the Charter prepares students to operate in demanding industrial environments where **technical reliability, safety, transparency, and accountability** are essential. For Master's students, the Charter serves as:

- A guide for scientific conduct;
- A foundation for professional ethics;
- A cornerstone for a career built on credibility and responsibility.

1.4. Ethical and Responsible Research

Scientific research constitutes one of the fundamental pillars of the university, alongside teaching and service to society. At the Master's level, and particularly in the field of **electrical engineering**, students are progressively required to produce new

knowledge through **modeling, numerical simulation, laboratory experimentation, and the analysis of industrial systems.**

In this context, **ethical and responsible research is not an option but a fundamental requirement.** It guarantees the **reliability of results**, the **reproducibility of scientific work**, and the **credibility of the future engineer or researcher.** Any deviation from ethical research practices may compromise not only academic integrity but also industrial safety and public trust.

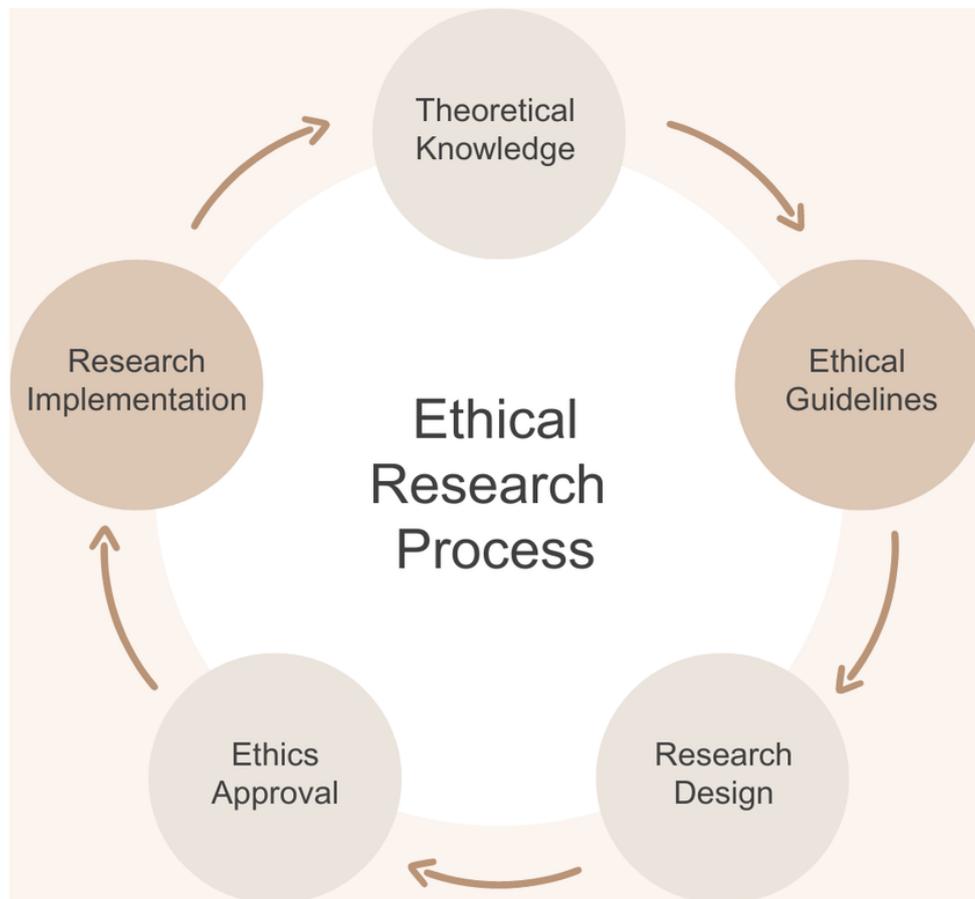


Figure 2 Ethical research process

1.4.1. Respect for Ethical Principles in Teaching and Research

Respect for ethics in teaching and research is based on a set of **universal scientific principles** that govern all processes of knowledge production. These principles include:

- **Scientific rigor**, which requires a clear, coherent, and well-justified methodology;
- **Objectivity**, which prohibits any manipulation of results to confirm preconceived hypotheses;

- **Transparency**, particularly in the description of methods, parameters, assumptions, and experimental conditions;
- **Intellectual honesty**, which involves acknowledging the limitations of one's work and properly recognizing the contributions of others.

Example:

When modeling a synchronous or induction machine, the student must clearly state the adopted assumptions (e.g., magnetic circuit linearity, neglected losses, operating conditions). Presenting simulation results without explicitly mentioning these assumptions constitutes a breach of scientific ethics.

In teaching, these principles also translate into **fair and objective assessment**, based on transparent evaluation criteria, and the rejection of any form of favoritism or complacency.



Figure 3 Research integrity

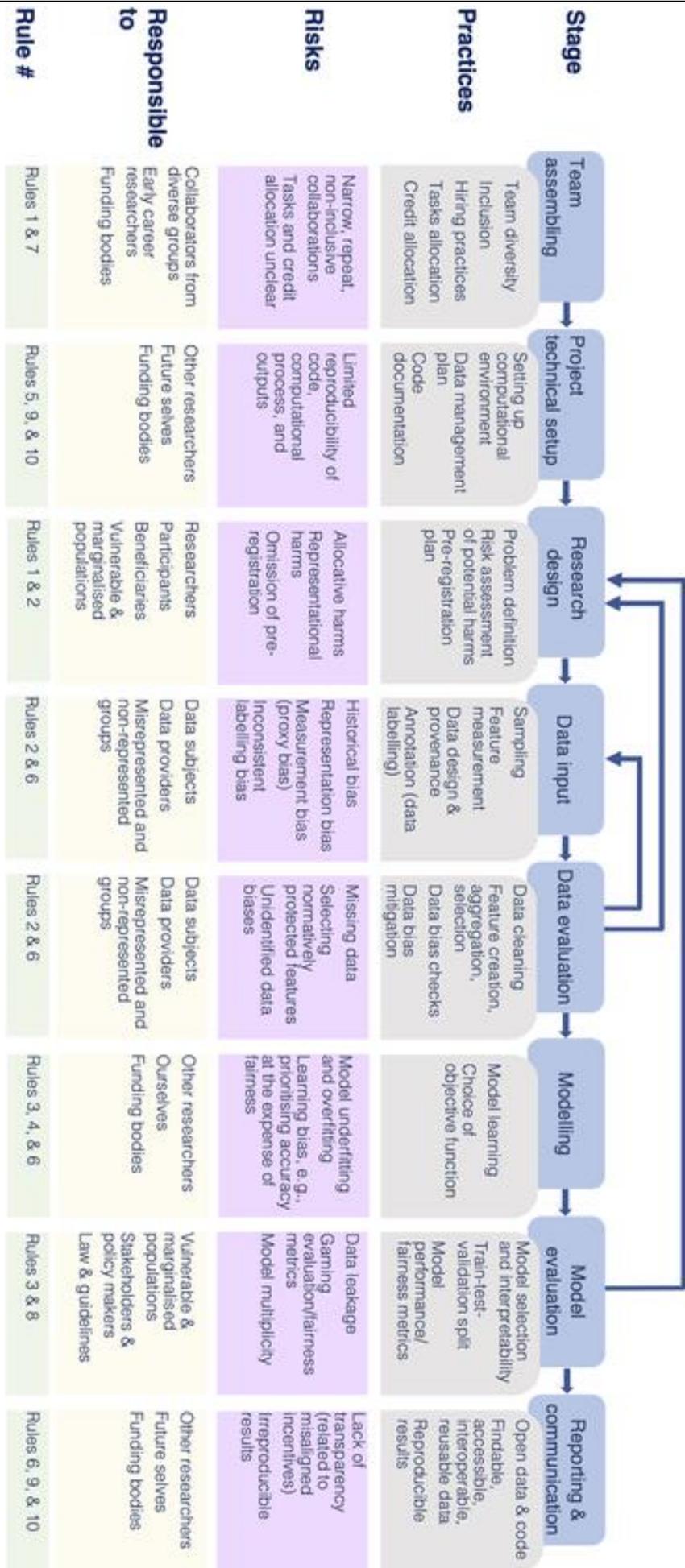


Figure 4 General framework of ethical and responsible research: from problem definition to reproducible and transparent results

1.4.2. Responsibilities in Teamwork

Research in electrical engineering is increasingly **collaborative and multidisciplinary**. Projects often involve several students, faculty members, researchers, and industrial partners. Teamwork therefore entails **specific ethical responsibilities**.

1.4.2.1. Equality and Fair Professional Treatment

All team members must be treated fairly, regardless of:

- Origin;
- Academic status;
- Seniority.

The evaluation of contributions must rely exclusively on the **actual work performed and demonstrated competencies**.

Example:

In a group project on the vector control of an induction machine, each contribution (modeling, simulation, experimentation, report writing) must be acknowledged fairly in the final report.

1.4.2.2. Conduct Against Discrimination

Any form of discrimination or harassment is incompatible with academic and scientific values. Such behavior negatively affects:

- The quality of collective work;
- Scientific creativity;
- Team cohesion.

Master's students must therefore be made aware of the importance of maintaining a **respectful, inclusive, and collaborative working environment**.

1.4.2.3. Pursuit of the Public Interest

Scientific research, particularly in the field of electrical machines, should aim to serve the **public interest** and support **sustainable technological progress**. It contributes notably to:

- Improved energy efficiency;
- Reduction of electrical losses;
- Reliability of industrial systems;
- Energy and environmental transition.

Example:

Research focused on optimizing the efficiency of electric motors directly contributes to reducing industrial energy consumption and greenhouse gas emissions.

1.4.2.4. Inappropriate Conduct in Collective Work

The following behaviors are considered ethical violations and may result in disciplinary sanctions:

- Appropriation of another team member's work;
- Manipulation of collective results;
- Deliberate exclusion of a student;
- Abuse of authority or hierarchical position.

1.4.3. Adopting Responsible Conduct and Preventing Misconduct**1.4.3.1. Responsible Conduct in Research**

Responsible research conduct involves:

- Full **traceability of data**;
- Proper **archiving of experimental results**;
- **Reproducibility** of simulations and experiments;
- Declaration of any **conflict of interest**.

Example:

A student using MATLAB, Simulink, or finite element analysis software must retain scripts, parameters, and source files that allow exact reproduction of the results presented in the Master's thesis.

1.4.3.2. Scientific Fraud

Scientific fraud refers to any deliberate action intended to deceive the scientific community. It includes:

- Fabrication of non-existent data;
- Falsification of experimental results;
- Deliberate omission of unfavorable results.

Example:

Artificially modifying a torque-speed curve to exaggerate machine performance constitutes a serious case of scientific fraud.

1.4.3.3. Plagiarism

Plagiarism is a major violation of academic integrity and is particularly frequent in Master's-level work when it is not clearly understood.

1.4.3.3.1. Definition

Plagiarism consists of using another person's intellectual work without proper citation.

1.4.3.3.2. Forms of Plagiarism

- Verbatim copying of texts or scientific articles;
- Reuse of figures, diagrams, or tables without reference;
- Plagiarism of mathematical models;
- Plagiarism of simulation codes (MATLAB, Python, etc.);
- Self-plagiarism (reuse of one's own previous work without disclosure).

1.4.3.3.3. Prevention of Unintentional Plagiarism

- Systematically cite sources;
- Paraphrase using one's own words;
- Apply correct bibliographic referencing;
- Understand scientific citation rules.

1.4.3.3.4. Detection and Sanctions

Universities use plagiarism detection software. Sanctions may range from cancellation of the work to exclusion, depending on severity.

1.4.4. Data Falsification and Fabrication

Data falsification involves modifying existing data, while fabrication refers to the complete invention of data. In electrical engineering, such practices may lead to:

- Design errors;
- Dangerous technical decisions;
- Industrial system failures.

These forms of misconduct are strictly prohibited and subject to severe sanctions.

1.4.5. Transition to the Next Section

Ethical and responsible research therefore constitutes an essential foundation of Master's-level education. It prepares students to assume high-level scientific and professional responsibilities, where **technical competence cannot be separated from ethical integrity.**

1.5. Ethics and Professional Conduct in the Workplace

Education in electrical engineering prepares students to operate in **complex professional environments** characterized by strong **technical, economic, regulatory, and safety constraints**. In such contexts, **ethics and professional conduct** constitute essential reference frameworks for engineers and Master's graduates in electrical engineering.

Ethical and deontological principles ensure **reliable technical decisions, safe installations, and the long-term sustainability of organizations**. Respect for these principles prepares students to practice their profession with **responsibility, credibility, and civic commitment**.

In this context, technical competence alone is insufficient. Engineers and technical managers are also required to comply with ethical and professional rules that guarantee **system reliability, human safety, and trust among stakeholders** (companies, clients, partners, and society).

Professional ethics aim to guide technical and managerial decisions toward **responsible and sustainable choices**, while professional conduct (deontology) defines the **obligations and duties** associated with the practice of a given profession.

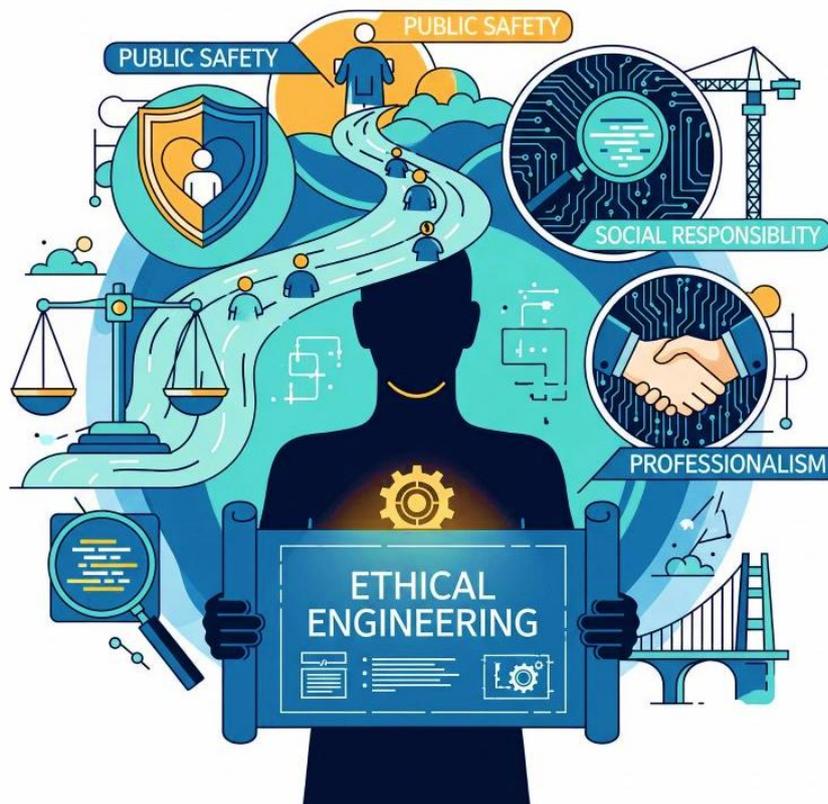


Figure 5 Ethics and Professional Conduct in the Workplace

1.5.1. Legal Confidentiality in Companies

Confidentiality is a **fundamental obligation** in the professional environment. It applies to all sensitive information to which an engineer may have access in the course of their duties, including:

- Designs and schematics of electrical machines;
- Control and regulation algorithms;
- Results of industrial tests and trials;
- Economic, commercial, or strategic data.

Engineers are required **not to disclose such information**, whether intentionally or through negligence, including after the termination of their employment contract.

Example:

Disclosing the design parameters of a high-efficiency motor or the control strategy of a power converter constitutes a breach of confidentiality and may lead to legal proceedings.

Confidentiality obligations are governed by **contractual clauses** (non-disclosure agreements) and by applicable national legislation.

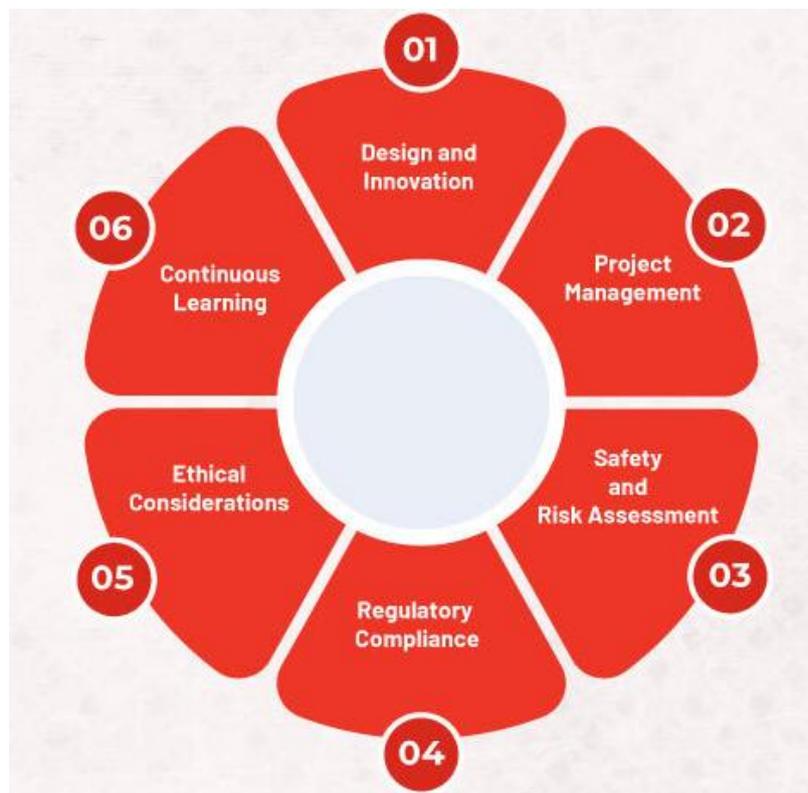


Figure 6 Role of ethics and professional conduct in engineering decision-making and industrial safety.

Table 1 Examples of Confidential Information in Electrical Engineering

Type of Information	Examples	Potential Risk if Disclosed
Technical	Machine designs, control algorithms	Loss of competitiveness, safety risks
Experimental	Test results, performance data	Invalidated certifications
Strategic	Market strategies, costs	Economic losses
Software	Source codes, simulation models	Intellectual property theft

1.5.2. Loyalty to the Organization and Professional Responsibility

Loyalty to the organization implies respect for contractual commitments and professional loyalty toward the employer. It does not imply blind obedience, but rather **honest, responsible, and transparent professional conduct**. Loyalty is reflected through:

- Conscientious execution of assigned tasks;
- Appropriate use of material and software resources;
- Absence of unfair competition;
- Compliance with deadlines and technical standards.

Professional responsibility requires engineers to act with **competence, diligence, and prudence**. They are ethically obligated to alert management in the event of technical risk, non-compliance, or danger to human safety.

Example:

If an engineer detects abnormal overheating in an electrical machine intended for industrial use, they are ethically required to report the issue, even if it results in delays or additional costs.



Figure 7 electrical machine

1.5.3. Conflicts of Interest

A conflict of interest arises when a **personal, financial, or relational interest** interferes with the impartial exercise of professional responsibilities. Conflicts of interest may occur in situations such as:

- Selecting a supplier with whom the engineer has a personal relationship;
- Participating in a competing company;
- Accepting benefits that may influence a technical decision.

Such situations undermine decision objectivity and may damage both corporate and professional credibility.

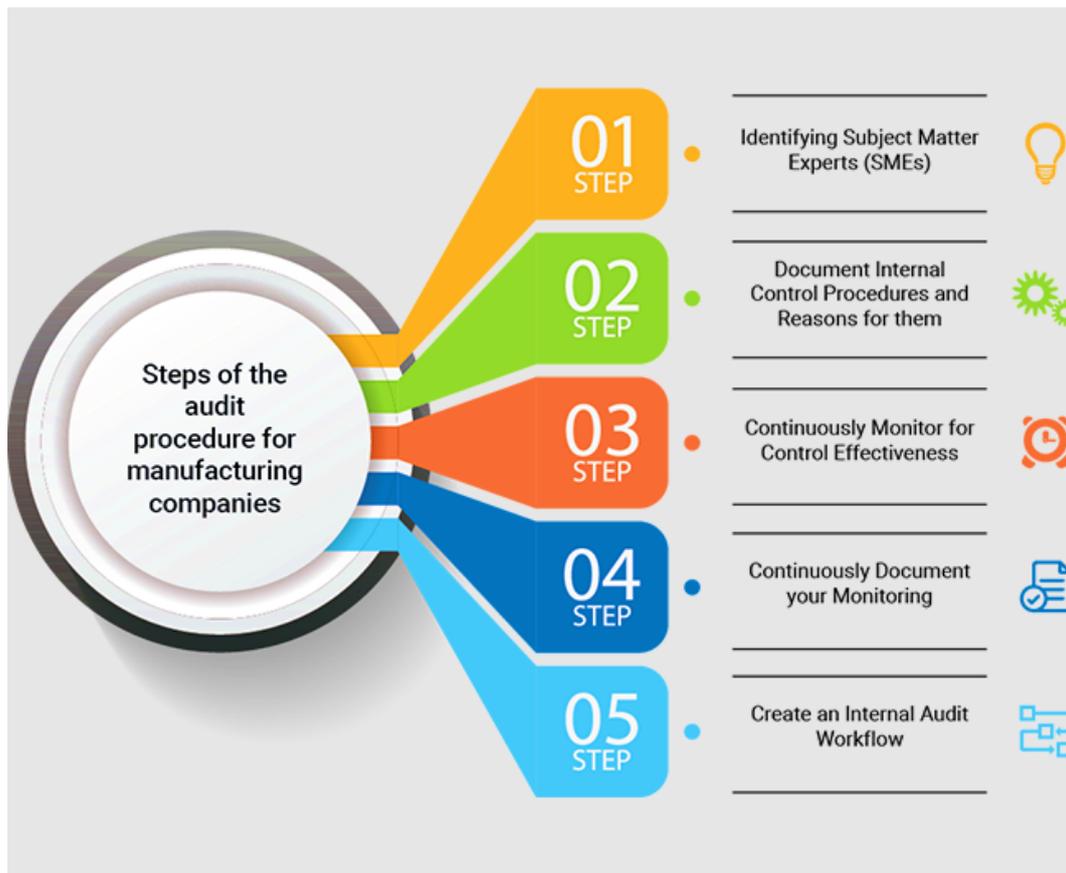


Figure 8 Steps of the audit procedure for manufacturing companies

Example:

Favoring a motor manufacturer due to personal interest, rather than selecting a technically superior solution, constitutes a conflict of interest and a professional misconduct.

Transparency and prior declaration of risk situations are essential measures for preventing conflicts of interest.

Table 2 Typical Conflicts of Interest and Preventive Measures

Situation	Ethical Risk	Preventive Measure
Supplier selection	Biased technical decision	Disclosure and recusal
External consultancy	Confidentiality breach	Contractual authorization
Gifts or advantages	Loss of objectivity	Refusal and reporting

1.5.4. Professional Integrity and the Fight Against Corruption

Integrity is a core value of professional ethics. It implies the **absolute refusal of corruption** and any illicit practices in the workplace.



Figure 9 Integrity is a core value of professional ethics

1.5.4.1. Forms of Corruption in the Workplace

Corruption may take various forms, including:

- Bribery;
- Hidden commissions;
- Favoritism in contract allocation;
- Abuse of power or technical position.

1.5.4.2. Consequences of Corruption

In the field of electrical machines, technically biased decisions driven by corruption may result in unsafe, non-compliant, or inefficient equipment.

Consequences include:

- Degradation of electrical installation quality;
- Increased industrial risks;
- Significant economic losses;
- Loss of trust from partners and society.

1.5.4.3. Anti-Corruption Measures

The fight against corruption is based on:

- Strict legal frameworks;

- Internal control and audit procedures;
- Transparency in technical decision-making;
- Ethical awareness and training of engineers.

Example:

Refusing a financial advantage offered in exchange for approving non-compliant equipment is an act of **professional integrity**.

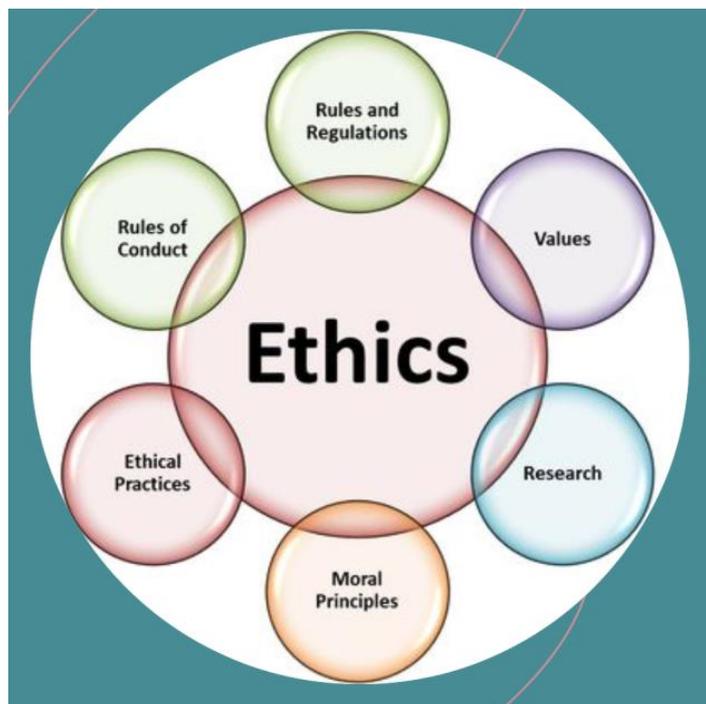


Figure 10 Ethics, Risks, and Professional Responsibilities

Table 3 Ethics, Risks, and Professional Responsibilities

Ethical Principle	Risk if Violated	Professional Responsibility
Confidentiality	Legal action, loss of trust	Protect sensitive information
Loyalty	Contract termination	Act transparently
Integrity	Unsafe systems	Refuse illicit practices
Objectivity	Poor technical decisions	Declare conflicts of interest

1.6. Conclusion

At the end of this first chapter, the essential foundations for **respecting ethical rules and integrity** in both academic and professional environments have been clearly and systematically established. It has been shown that **ethics and professional conduct are not merely abstract or moral principles**, but rather constitute an indispensable framework that ensures the **credibility of higher education**, the **reliability of scientific research**, and **society's trust** in universities and the professional world.

The analysis of the **University Charter of Ethics and Professional Conduct** has highlighted its central role as a reference document governing the behavior of all members of the academic community. The Charter establishes fundamental principles such as **academic freedom, commitment to scientific truth, intellectual integrity, objectivity, fairness, and mutual respect**. Through these principles, it provides concrete guidance for teaching practices, student assessment, scientific research, and professional relationships within the university.

This chapter has also emphasized the critical importance of **ethical and responsible research**, particularly at the Master's level, where students progressively become active contributors to scientific knowledge. Compliance with **methodological rigor, transparency of procedures, data traceability**, and the strict rejection of **fraud, plagiarism, falsification, and data fabrication** are fundamental requirements. In the field of **electrical engineering**, these requirements are especially crucial, as erroneous scientific results may lead to **unsafe technical decisions, significant economic losses, or serious risks to human safety and industrial installations**.

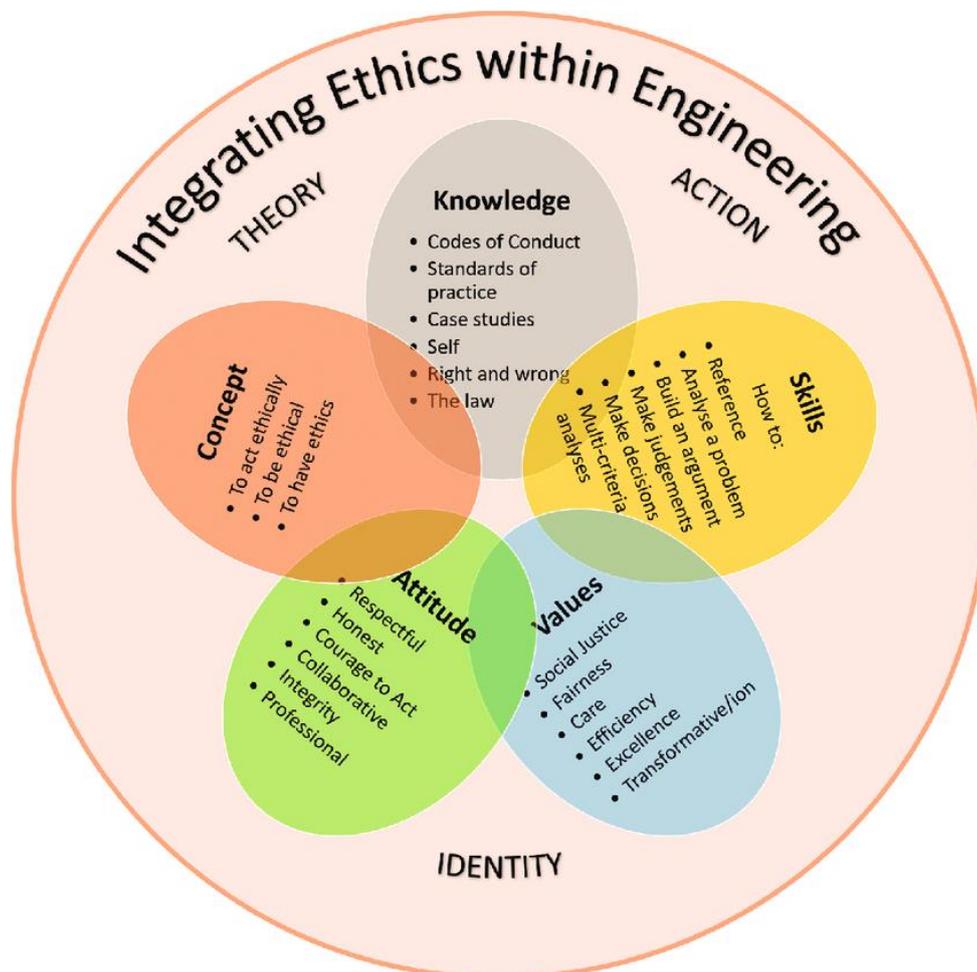


Figure 11 Synthesis of Chapter 1: ethics and integrity as foundations of academic credibility, responsible research, and professional practice

Furthermore, the discussion of **ethics and professional conduct in the workplace** has highlighted the increased responsibilities borne by engineers and technical managers. **Confidentiality of information, loyalty to the organization, management of conflicts of interest, and the fight against corruption** emerge as essential pillars of professional practice. These rules ensure not only the quality and reliability of industrial systems, but also the **sustainability of organizations** and the **trust of partners and society at large**.

Ultimately, the objective of this first chapter is to establish a **sustainable culture of integrity, responsibility, and professionalism** from the very beginning of the Master's program. It prepares students to adopt an ethical posture in both their academic activities and their future careers as engineers or researchers. With the conceptual and normative foundations now firmly established, the next chapter will address **intellectual property**, focusing on the protection of works, innovations, and scientific results, as well as the rights and obligations arising from them in academic and industrial contexts.