

Unit III: Using Technology Effectively & Responsibly

Chapter 16: Computer Ethics & Social Issues

16.1: Goal

In this chapter, you will explore the ethical questions that arise as technology becomes more deeply integrated into society. You will examine issues such as intellectual property, digital equity, environmental sustainability, and the social impact of emerging technologies. By considering multiple perspectives, you will develop the critical thinking skills needed to make informed and ethical decisions about technology.

16.2: Objectives

- Define computer ethics and explain its importance.
- Identify ethical issues related to the use of computers and digital technologies.
- Explain the concepts of privacy, intellectual property, and digital ownership.
- Distinguish between legal and ethical behavior.
- Recognize ethical issues involving artificial intelligence and emerging technologies.
- Describe the impact of technology on employment, education, and society.
- Apply ethical decision-making to common technology scenarios.
- Demonstrate responsible digital citizenship.

16.3: Think About It

A student uses an AI tool to help write a research paper. The student edits the response, adds original ideas, and cites the AI tool appropriately.

Another student copies the AI-generated response and submits it without reading it.

Have both students used AI ethically?

Technology often gives us the ability to do something, but ethics helps us decide whether we should.

16.4: Opening Scenario

Maria is working on a group presentation for class. She finds an excellent image online and adds it to the presentation without checking whether she has permission to use it. Later, another teammate copies several paragraphs from a website without citing the source because "it's already on the Internet."

Meanwhile, another group member uses an AI assistant to generate ideas for the presentation but carefully reviews the suggestions, rewrites them in their own words, and cites the AI tool according to the instructor's guidelines.

Although all three students used technology, their choices raise different ethical questions about copyright, plagiarism, attribution, and responsible use of artificial intelligence.

Understanding computer ethics helps people make responsible decisions when technology presents choices that may not have obvious right or wrong answers.

16.5: Why This Chapter Matters

Technology has transformed how people communicate, learn, work, and make decisions. Every day, individuals share information online, use artificial intelligence, create digital content, and interact with automated systems.

With these opportunities come important ethical responsibilities. Decisions involving privacy, copyright, intellectual property, artificial intelligence, cybersecurity, and online behavior affect individuals, organizations, and society.

Learning computer ethics helps students become responsible technology users, thoughtful professionals, and informed citizens who understand both the benefits and the responsibilities of living in a digital world.

16.6: What is Computer Ethics?

Computers and digital technologies have become part of nearly every aspect of modern life. We use technology to communicate, learn, shop, bank, work, receive medical care, and entertain ourselves. As technology has become more powerful and widespread, it has also created new questions about how it should be used.

Computer ethics is the study of moral principles and standards that guide the responsible use of computers, digital devices, information systems, and technology. It asks not only "**Can we do this?**" but also "**Should we do this?**"

Many technology decisions are straightforward. For example, most people agree that creating a strong password or protecting another person's private information is the right thing to do. Other situations are more complex. Is it acceptable to use artificial intelligence to help write a paper? Should employers monitor employee email? Is it ethical for companies to collect detailed information about customers' online activities? Computer ethics helps people think carefully about questions like these and make decisions that are fair, honest, respectful, and responsible.

16.7: Ethics Versus Law

People often assume that if something is legal, it must also be ethical. In reality, **laws** and **ethics** are related but different.

Laws are rules established by governments that define what people are permitted or prohibited from doing. Violating a law can result in fines, lawsuits, or criminal penalties.

Ethics, on the other hand, involves principles of right and wrong that guide behavior even when no law requires a particular action. Ethical decisions often involve honesty, fairness, respect, and responsibility. Sometimes an action may be:

- Both legal and ethical.
- Legal but ethically questionable.

- Illegal and unethical.
- Illegal but ethically complex under unusual circumstances.

For example, sharing another student's assignment without permission may violate school policy and be unethical, even if no criminal law has been broken. Conversely, laws sometimes change over time as society's views about ethical issues evolve.

Good digital citizens strive to act ethically, not simply avoid breaking the law.

Law and Ethics Compared

Law	Ethics
Created by governments	Guided by moral principles and professional standards
Defines what is legally permitted	Helps determine what is fair and responsible
Violations may result in legal penalties	Violations may damage trust, reputation, or relationships
Usually written and formally enforced	Often based on personal values, professional codes, or social expectations
Applies to everyone within a legal jurisdiction	May involve thoughtful judgment in situations where no law exists

16.8: Why Ethics Matters in Technology

Technology often develops faster than laws. New technologies such as artificial intelligence, facial recognition, autonomous vehicles, and social media create situations that lawmakers may not have anticipated. As a result, individuals and organizations frequently face decisions where there are no simple legal answers.

Ethical decision-making encourages people to consider questions such as:

- Who could benefit from this decision?
- Who might be harmed?
- Is the decision honest and transparent?
- Does it respect the privacy and rights of others?
- Would I be comfortable if my decision were made public?

Thinking through these questions helps people make more responsible choices when using technology.

16.9: Professional Responsibility

Many technology professionals follow formal **codes of ethics** developed by professional organizations. These codes encourage members to:

- Protect users' privacy.
- Maintain confidentiality.
- Avoid causing harm.
- Be honest and trustworthy.
- Respect intellectual property.
- Design systems that are safe, secure, and accessible.
- Continue learning as technology evolves.

Even students who do not plan to work in information technology can benefit from ethical decision-making because nearly every career now involves digital technology.

16.10: AI to Write Homework?

Jordan has a history paper due tomorrow. Feeling overwhelmed, Jordan asks an AI assistant to write the entire paper. The AI produces a well-written essay in seconds.

Jordan reads the paper briefly, changes a few words, and submits it without citing the AI tool or verifying the information.

Jordan's classmate, Maya, also uses an AI assistant. Instead of asking it to write the paper, she asks it to explain difficult concepts, suggest an outline, and recommend additional research sources. Maya writes the paper herself, verifies the facts, and follows her instructor's policy for acknowledging AI assistance.

Both students used AI, but their choices were different.

Discuss

1. Did both students use AI ethically? Why or why not?
2. Should using AI always be considered cheating?
3. Why is it important to verify AI-generated information?
4. How might your answer change if this were a workplace assignment instead of a school assignment?
5. What classroom or workplace policies should guide the ethical use of AI?

There may not be a single correct answer, but ethical decision-making requires honesty, critical thinking, and respect for established expectations.

Did You Know?

Many employers now encourage workers to use AI tools. Employees are expected to review AI generated content for accuracy, protect confidential information, and remain responsible for the final work. Using AI responsibly is becoming an important professional skill in many careers.

16.11: Digital Citizenship

What Is Digital Citizenship?

Every time you send a text message, post on social media, participate in an online class, shop online, or use artificial intelligence, you are participating in the digital world. Just as communities have expectations for how people should behave in public, the digital world has expectations for responsible behavior.

Digital citizenship is the responsible, ethical, safe, and respectful use of technology. It includes understanding not only how to use digital tools effectively but also how to interact with others in ways that build trust, protect privacy, and contribute positively to online communities.

Being a good digital citizen means thinking carefully about the consequences of your actions before posting, sharing, downloading, or communicating online. Responsible technology users understand that their online actions can affect friends, classmates, employers, organizations, and even people they have never met.

Digital citizenship is an important life skill because technology is now part of nearly every profession and almost every aspect of daily life.

16.12: Responsible Digital Citizenship

Characteristics of Responsible Digital Citizens

Responsible digital citizens demonstrate behaviors that promote trust, respect, and safety online. While specific expectations may vary depending on the situation, most responsible technology users share several common characteristics. They:

- Treat others with respect in online conversations.
- Protect personal and confidential information.
- Respect copyright and intellectual property.
- Verify information before sharing it.
- Use artificial intelligence responsibly and honestly.
- Report scams, cyberbullying, or inappropriate behavior.
- Create strong passwords and protect their accounts.
- Consider how their online actions may affect others.

Being a responsible digital citizen is about avoiding problems and making positive contributions to online communities.

Responsible Behavior	Why It Matters
Think before posting	Prevents embarrassment and protects your reputation

Verify information before sharing	Helps reduce the spread of misinformation
Respect copyright	Supports creators and avoids plagiarism
Protect personal information	Reduces the risk of identity theft and fraud
Use respectful language	Builds positive relationships and reduces conflict
Report harmful behavior	Helps create safer online communities
Use AI responsibly	Promotes honesty, accuracy, and accountability

16.13: Your Digital Footprint

Every online activity leaves behind information. This collection of information is known as your **digital footprint**.

A digital footprint includes information you intentionally share, such as:

- Social media posts
- Photos and videos
- Blog entries
- Comments
- Online reviews

It also includes information that is collected automatically, including:

- Websites you visit
- Search history
- Shopping activity
- Location information
- Device information
- Cookies and tracking data

Some parts of your digital footprint are under your control, while others are collected by websites, apps, and online services.

Because information posted online may remain accessible for many years, it is wise to think carefully before sharing personal information.

Many colleges and employers review applicants' online presence when making admission or hiring decisions.

16.14: Communicating Respectfully Online

Online communication often lacks facial expressions, body language, and tone of voice. As a result, messages can easily be misunderstood.

Good digital citizens strive to communicate clearly and respectfully. Before posting or sending a message, consider whether your words are:

- Accurate
- Respectful
- Helpful
- Appropriate for the audience
- Necessary

Avoid posting messages when angry or frustrated. Taking a few minutes to reconsider a response can prevent misunderstandings and preserve relationships.

Remember that once something is posted online, it may be copied, shared, or archived even if you later delete it.

16.15: Balancing Rights and Responsibilities

Digital citizens enjoy many rights, including access to information, freedom of expression, and opportunities to connect with others around the world. These rights come with responsibilities. For example:

- You have the right to express your opinions, but you should respect the opinions of others.
- You have the right to use technology, but you should not use it to harass or intimidate others.
- You have the right to protect your privacy, but you should also respect the privacy of others.
- You have the opportunity to use AI tools, but you remain responsible for the accuracy and integrity of the work you submit.

Responsible technology use requires balancing personal freedom with consideration for the people around us.

Build a Positive Digital Footprint

Here are five simple ways to strengthen your online reputation:

1. Think carefully before posting photos or comments.
2. Keep your privacy settings up to date.
3. Use professional language when communicating in academic or workplace settings.
4. Share reliable information from trustworthy sources.
5. Highlight positive accomplishments, such as volunteer work, certifications, projects, or awards.

Your digital footprint can become a valuable part of your personal and professional identity.

16.16: Sharing Streaming Passwords

Should You Share Your Streaming Password?

Taylor subscribes to a popular streaming service. A close friend asks for the account password because they cannot afford their own subscription.

Taylor reasons that "the company is huge, and one extra person won't matter."

However, the service agreement states that accounts are intended only for members of the same household. Taylor wants to help a friend but also agreed to the service's terms when creating the account.

Discuss

1. Is sharing a password with a friend different from sharing it with someone in your household?
2. Does violating a company's terms of service automatically make an action unethical?
3. Who might be affected by password sharing?
4. Would your answer change if the account were for online banking or a school portal?
5. What alternatives could Taylor suggest?

Reasonable people may disagree about the best choice. Ethical decision-making involves considering honesty, fairness, agreements, and the possible consequences of our actions.

Did You Know?

Studies have found that employers and colleges may review publicly available online information about applicants during the hiring or admissions process. While practices vary, maintaining a respectful and professional online presence can help create positive opportunities in the future.

16.17: Intellectual Property

What Is Intellectual Property?

People create many different kinds of original work, including books, photographs, music, artwork, software, videos, websites, and inventions. Although these creations may exist in digital form, they represent significant time, effort, creativity, and skill.

Intellectual property (IP) refers to creations of the mind that are protected by law. These protections give creators certain rights over how their work is copied, distributed, modified, or sold.

Intellectual property laws encourage innovation by allowing creators to benefit from their work. Without these protections, people and businesses might have less incentive to invest time and resources in creating new products, writing books, developing software, or producing music and films.

Respecting intellectual property is both a legal responsibility and an ethical one. Responsible technology users recognize that digital content belongs to someone unless permission has been given for others to use it.

16.18: Copyright

One of the most common forms of intellectual property protection is **copyright**.

Copyright protects original creative works such as:

- Books
- Articles
- Music
- Movies
- Photographs
- Artwork
- Computer software
- Websites
- Videos
- Presentations

In many countries, copyright protection begins automatically when an original work is created and fixed in a tangible form, such as being written, recorded, or saved electronically. Registration may provide additional legal benefits, but it is not always required for copyright to exist. The copyright owner generally has the right to:

- Reproduce the work.
- Distribute copies.
- Display or perform the work publicly.
- Create modified or derivative works.
- License or sell these rights to others.

Using someone else's work without permission may violate copyright law unless an exception or license applies.

Examples of Copyrighted Works

Type of Work	Usually Protected by Copyright?
Novel or textbook	Yes
Photograph	Yes
Song or musical recording	Yes
Computer software	Yes
Original artwork	Yes
Video or movie	Yes
Facts or ideas by themselves	No
Government publications	Sometimes (varies by country)

Note: Copyright laws vary by country.

Always follow the laws and institutional policies that apply where you live, study, or work.

16.19: Public Domain

Not all creative works remain protected forever.

The **public domain** includes works that are free for anyone to use without requesting permission because copyright has expired, been forfeited, or never applied. Examples may include:

- Very old books
- Historical government documents (depending on the country)
- Classical artwork whose copyright has expired
- Works intentionally released into the public domain by their creators

Although permission may not be required to use public domain materials, providing attribution is often considered good academic and professional practice.

16.20: Creative Commons Licenses

Many creators want others to use and share their work under certain conditions. Instead of requiring individual permission from every user, they may apply a **Creative Commons (CC)** license.

Many educators are concerned about the cost of textbooks and publish their own texts under a Creative Commons license.

Creative Commons licenses clearly state what others may do with the work. Depending on the license, users may be allowed to:

- Share the work.

- Copy it.
- Use it in educational projects.
- Modify or adapt it.
- Use it for commercial or noncommercial purposes.

The 6 Main Types of CC Licenses

1. **CC BY (Attribution):** Allows reuse, tweaking, and building upon the work, even commercially, as long as credit is given.
2. **CC BY-SA (Attribution-ShareAlike):** Allows commercial reuse and remixing, provided users credit the creator and license new creations under identical terms.
3. **CC BY-ND (Attribution-NoDerivatives):** Allows copying and redistribution in unadapted form only, with credit, including for commercial use.
4. **CC BY-NC (Attribution-NonCommercial):** Allows remixing and building upon the work for noncommercial purposes only, with credit.
5. **CC BY-NC-SA (Attribution-NonCommercial-ShareAlike):** Allows non-commercial remixing and sharing under the same terms, with credit.
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16.21: Finding Images You Can Use

When creating presentations, reports, or websites, choose images that you have permission to use. Good sources include:

- Your own photographs and illustrations.
- Public domain collections.
- Creative Commons resources.
- Stock image libraries that provide licenses.
- Images provided through your school or employer.

Even when attribution is not legally required, giving credit to the creator demonstrates professionalism and respect.

You can also ask AI to create an image.

16.22: Fair Use

Understanding Fair Use

Students may hear the phrase **fair use** and wonder what that means. It does **not** mean that anything used for school is automatically legal.

Fair use is a legal doctrine in some countries, including the United States, that allows limited use of copyrighted material without permission under certain circumstances. Courts consider several factors, such as:

- The purpose of the use (for example, educational or commercial).
- The nature of the copyrighted work.
- The amount of the work being used.
- The effect of the use on the market for the original work.

Because fair use depends on the specific situation, there is no simple rule that applies to every case. If you are unsure whether a use qualifies as fair use, seek guidance from your instructor, librarian, or organization's policies.

Comparing Common Types of Content

Type of Content	Can You Usually Use It Freely?	Should You Give Credit?
Your own original work	Yes	Optional, depending on context
Public domain	Yes	Recommended
Creative Commons	Yes, if you follow the license	Usually required
Copyrighted material	Usually no, unless permission or an exception applies	Yes, if used appropriately

16.23: Software Licenses

Computer software is also protected by intellectual property laws.

When you purchase software, you are often purchasing a **license** to use the software rather than ownership of the software itself. The license explains what users are permitted to do. Common software licensing models include:

- **Commercial software** – Requires payment for use.
- **Subscription software** – Access continues while subscription fees are paid.

- **Freeware** – Available at no monetary cost but still protected by copyright.
- **Open-source software** – Source code is available under licenses that permit users to study, modify, and redistribute the software according to specific terms.

Installing one licensed copy of software on multiple computers without permission may violate the license agreement, even if no additional copies were purchased.

16.24: Why Intellectual Property Matters

Respecting intellectual property benefits everyone.

Creators receive recognition and compensation for their work. Businesses are encouraged to invest in new products and technologies. Students learn to conduct research honestly and ethically. Society benefits because innovation continues to be rewarded.

At the same time, licensing systems such as Creative Commons and open-source software demonstrate that creators can choose to share their work while still defining how it may be used.

Understanding these differences helps technology users make informed and responsible decisions.

16.25: Plagiarism and Academic Integrity

What Is Academic Integrity?

Whether you are writing a research paper, creating a presentation, completing a lab assignment, or preparing a report at work, others expect your work to be honest and original. This expectation is known as **academic integrity**.

Academic integrity means completing your work honestly, giving proper credit to the ideas and work of others, and following the rules established by your instructor, school, or employer. It demonstrates respect for learning, fairness, and personal responsibility.

Academic integrity is more than simply avoiding punishment for cheating. It is about developing the knowledge and skills you will need throughout your education and career. Employers value individuals who can think critically, solve problems independently, and communicate honestly.

When students submit work that is not their own, they miss an opportunity to learn and may lose the trust of instructors, classmates, and future employers.

What Is Plagiarism?

Plagiarism is presenting another person's words, ideas, images, or creative work as your own without giving appropriate credit.

Plagiarism can occur intentionally or unintentionally. Even if you did not mean to copy someone else's work, failing to acknowledge the original source may still be considered plagiarism.

Examples include:

- Copying text directly from a website without quotation marks or a citation.
- Downloading a paper and submitting it as your own.
- Copying another student's assignment.
- Using someone else's photographs, charts, or graphics without permission or attribution.
- Paraphrasing an author's ideas too closely without citing the source.
- Submitting AI-generated work as your own when course policies prohibit or restrict its use.

Plagiarism is considered a serious violation of academic integrity because it misrepresents the source of the work.

Examples of Plagiarism

Situation	Plagiarism?	Why?
Copying several sentences from a website without citing the source	Yes	The original author is not credited.
Quoting a paragraph and providing a citation	No	The source is properly acknowledged.
Paraphrasing an article and citing the author	No	The ideas are credited to the original source.
Turning in another student's assignment	Yes	The work is falsely presented as your own.
Using AI to brainstorm ideas when permitted and following your instructor's policy	Usually No	The work follows the stated expectations and remains your responsibility.

Intentional and Unintentional Plagiarism

Some students intentionally copy work to save time or improve a grade. Others plagiarize because they do not understand how to cite sources or believe that information found online is free to use without acknowledgment.

Regardless of intent, students are responsible for learning and following the expectations of their instructors and institutions.

To avoid unintentional plagiarism:

- Keep careful notes during research.
- Record complete source information.
- Clearly distinguish your own ideas from information gathered from others.
- Learn the citation style required for your course.
- Ask your instructor or librarian if you are unsure how to cite a source.

Developing good research habits early makes academic writing easier and more accurate.

16.26: Why Citations Matter

A **citation** identifies the source of information, ideas, images, or data that you use in your work. Citations serve several important purposes:

- They give credit to the original creator.
- They allow readers to locate the original source.
- They strengthen the credibility of your work.
- They demonstrate honesty and professionalism.
- They help readers distinguish between your ideas and the ideas of others.

Different courses may require different citation styles, such as APA, MLA, or Chicago. Regardless of the format, the goal is the same: acknowledge the work of others accurately and consistently.

16.27: Good Research Habits

Use these strategies when completing research assignments:

- Begin research early to avoid last-minute pressure.
- Save links to the sources you use.
- Keep notes organized by topic.
- Record citation information while conducting research.
- Verify information using multiple reliable sources.
- Write first, then use AI or editing tools to improve clarity rather than to replace your own thinking.

Good organization helps prevent accidental plagiarism and makes writing less stressful.

16.28: AI and Academic Integrity

Artificial intelligence has changed how we learn, do research, write, and study. AI tools can help in many ways:

- Explain difficult concepts
- Suggest outlines
- Summarize information
- Generate practice questions
- Provide feedback on writing.

As a student, you are responsible for the final work.

Different instructors, schools, and employers have different expectations regarding AI use. Some assignments may encourage AI as a learning aid, while others may require entirely original work without AI assistance.

Whenever you use AI:

- Follow your instructor's or employer's policies.
- Verify the accuracy of AI-generated information.
- Review and revise AI-generated text carefully.
- Protect confidential or personal information.
- Acknowledge AI assistance when required.

Remember that AI can make mistakes, omit important information, or generate inaccurate content. The person submitting the work remains responsible for its quality and accuracy.

Did You Know?

Many colleges now include guidance on responsible AI use in their academic integrity policies. Some instructors encourage AI for brainstorming or reviewing drafts, while others restrict or prohibit its use on specific assignments. Always read the assignment instructions carefully and ask questions if the expectations are unclear.

16.29: Chapter Summary

Computer ethics examines the responsible use of technology and the impact of digital decisions on individuals and society. Ethical technology use goes beyond simply following the law; it involves considering fairness, privacy, intellectual property, honesty, and respect for others. By understanding ethical principles and applying thoughtful decision-making, individuals can use technology responsibly in school, the workplace, and everyday life.