

*Journal of*

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# **INDUSTRIAL TECHNOLOGY**

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*Volume 20, Number 4 - September 2004 through November 2004*

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## ***A Code of Ethics for Industrial Technology?***

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*Non-Refereed Article*

**KEYWORD SEARCH**

***Ethics  
Leadership  
NAIT  
Philosophy***

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*The Official Electronic Publication of the National Association of Industrial Technology • [www.nait.org](http://www.nait.org)*

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# A Code of Ethics for Industrial Technology?

By Dr. Larry D. Helsel

Generally, professions and academic disciplines have several attributes in common (e.g., well defined definitions, philosophies and rationales, logical organizational structures, published histories, education and training functions, certification and or accreditation standards, and a code of ethics/code of conduct). Industrial Technology, as a profession and academic discipline, has benefited tremendously from the efforts made by the leaders and members of the National Association of Industrial Technology (NAIT) to ensure that the universally recognized attributes and the definition of “profession” and “discipline” are associated with our field.

As a profession, Industrial Technology is fortunate to have had leaders with the vision, and foresight to understand that to achieve status among long established professions and disciplines (i.e., engineering, business, engineering technology) we had to meet the implicit and explicit definition of “profession” or “discipline”. In a relatively short period, less than 50 years, a lot has been accomplished toward that goal. Industrial Technology is well served by a thoughtful definition and published history, it has a logical organizational structure, it is also a professional association that educates, trains, promotes, and lobbies for greater resources and recognition of the profession and discipline. Additionally, accreditation and certification functions of the organization have evolved to be recognized as systems for assessing program and individual quality and qualifications.

Recently, a foundation has been added to help support efforts related to research, training, education and promotion of Industrial Technology. This effort and those previously identified have helped industrial technology mature as a discipline and profession. Perhaps it is time to add another attri-

bute to the list of attributes that defines our discipline and profession.

Most professions and many disciplines (e.g., engineering, medicine, psychology, quality management, and business management) have a “code of ethics” and or a “code of conduct”. These codes generally consist of moral principles that guide the conduct of professionals in their work. These codes are generally prepared by professional societies associated with specializations (e.g., American Medical Association, American Society for Quality Control, and American Society for Mechanical Engineering); however, corporations or institutions develop some codes. The following is a sample of the canons of ethics from selected professional societies.

## **SME Code of Ethics**

<http://www.sme.org/cgi-bin/preshtml.pl?/press/ethics.htm>

**PREAMBLE.** Practitioners of manufacturing engineering recognize that their professional, civic and personal activities have a direct and vital influence on the quality of life and standard of living for all people. Therefore, manufacturing engineers should exhibit high standards of competence, honesty and impartiality; be fair and equitable; and accept a personal responsibility for adherence to applicable laws, the protection of the public health, and maintenance of safety in their professional actions and behavior. These principles govern professional conduct in serving the interests of the public, clients, employers, colleagues and the profession. Honesty, integrity, loyalty, fairness, impartiality, candor, fidelity to trust, and inviolability of confidence are incumbent upon every member as professional obligations. Each member shall be guided by

high standards of business ethics, personal honor, and professional conduct. The words “practitioner,” “manufacturing engineer,” and “member” as used throughout this Code include all classes of membership in the Society of Manufacturing Engineers.

#### **THE FUNDAMENTAL**

**PRINCIPLE.** The manufacturing engineer is dedicated to improving not only the manufacturing process, but manufacturing enterprises worldwide. This includes striving to instill a sense of concern and awareness throughout the manufacturing community of public health, safety, conservation, and environmental issues that are related to the practice of manufacturing and through the application of sound engineering and management principles. Engineers realize that in carrying out this responsibility their individual talents and services can be more effective when funneled through the activities of the Society of Manufacturing Engineers. Therefore, engineers shall strive to support the mission of the Society of Manufacturing Engineers and the activities, products, and events sponsored and produced by them.

#### **CANONS OF PROFESSIONAL CONDUCT**

- Members offer services in the areas of their competence and experience, affording full disclosure of their qualifications.
- Members consider the consequences of their work and societal issues pertinent to it and seek to extend public understanding of those relationships.
- Members are honest, truthful, and fair in presenting information and in making public statements reflecting on professional matters and their professional role.
- Members engage in professional relationships without bias because of race, religion, sex, age, national origin or impairment.
- Members act in professional matters for each employer or client as faithful agents or trustees, disclosing nothing of a proprietary nature concerning the business affairs or

technical processes of any present or former client or employer without specific consent.

- Members disclose to affected parties known or potential conflicts of interest or other circumstances that might influence - or appear to influence - judgment or impair the fairness or quality of their performance.
- Members are personally responsible for enhancing their own professional competence throughout their careers and for encouraging similar actions by their colleagues.
- Members accept responsibility for their actions; seek and acknowledge constructive criticism of their work; offer honest constructive criticism of the work of others; properly credit the contributions of others; and do not accept credit for work not theirs.
- Members perceiving a consequence of their professional duties to adversely affect the present of future public health and safety shall formally advise their employers or clients and, if warranted, consider further disclosure.
- Members of the Society of Manufacturing Engineers act in accordance with all applicable laws and the Constitution & Bylaws of the Society of Manufacturing Engineers and lend support to others who strive to do likewise.
- Members of the Society of Manufacturing Engineers shall aid in preventing the election to membership of those who are unqualified or do not meet the standards set forth in this Code of Ethics.

*Approved by: Society of Manufacturing Engineers Board of Directors*

*Date: December 2, 1990*

*Last modified: January 18, 2001*

#### **American Society for Quality (ASQ) Code of Ethics**

<http://www.asq.org/join/about/ethics.html>

To uphold and advance the honor and dignity of the profession, and in keeping with high standards of ethical conduct **I acknowledge that I:**

#### **FUNDAMENTAL PRINCIPLES**

- Will be honest and impartial, and will serve with devotion my employer, my clients, and the public.
- Will strive to increase the competence and prestige of the profession.
- Will use my knowledge and skill for the advancement of human welfare, and in promoting the safety and reliability of products for public use.
- Will earnestly endeavor to aid the work of the Society.

#### **RELATIONS WITH THE PUBLIC**

- 1.1 Will do whatever I can to promote the reliability and safety of all products that come within my jurisdiction.
- 1.2 Will endeavor to extend public knowledge of the work of the Society and its members that relates to the public welfare.
- 1.3 Will be dignified and modest in explaining my work and merit.
- 1.4 Will preface any public statements that I may issue by clearly indicating on whose behalf they are made.

#### **RELATIONS WITH EMPLOYERS AND CLIENTS**

- 2.1 Will act in professional matters as a faithful agent or trustee for each employer or client.
- 2.2 Will inform each client or employer of any business connections, interests, or affiliations which might influence my judgment or impair the equitable character of my services.
- 2.3 Will indicate to my employer or client the adverse consequences to be expected if my professional judgment is overruled.
- 2.4 Will not disclose information concerning the business affairs or technical processes of any present or former employer or client without his consent.
- 2.5 Will not accept compensation from more than one party for the same service without the consent of all parties. If employed, I will engage in supplementary employment of consulting practice only with the consent of my employer.

## RELATIONS WITH PEERS

- 3.1 Will take care that credit for the work of others is given to those whom it is due.
- 3.2 Will endeavor to aid the professional development and advancement of those in my employ or under my supervision.
- 3.3 Will not compete unfairly with others; will extend my friendship and confidence to all associates and those with whom I have business relations.

## Institute of Industrial Engineers (IIE)

<http://www.iienet.org/public/articles/details.cfm?id=79>

## Engineering Code of Ethics THE FUNDAMENTAL PRINCIPLES

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

1. Using their knowledge and skill for the enhancement of human welfare;
2. Being honest and impartial, and serving with fidelity the public, their employers and clients;
3. Striving to increase the competence and prestige of the engineering profession; and
4. Supporting the professional and technical societies of their disciplines.

## THE FUNDAMENTAL CANONS

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall associate only with reputable persons or organizations.
7. Engineers shall continue their profes-

sional development throughout their careers and shall provide opportunities for the professional development of those engineers under their supervision.

*IIE endorses the Canon of Ethics provided by the Accreditation Board for Engineering and Technology.*

## Elements of a Code of Ethics

The Codes of Ethics of the aforementioned professional organizations and others have common themes. For example, all recognize that the health and safety of the individuals using or coming in contact with the products or processes that they design is paramount. Honesty, integrity, loyalty, confidentiality, and objectivity also are common threads throughout these codes.

Wiley (2000) attempted to classify all code items by analyzing the codes of ethics of five organizations. The following classification is the result of Wiley's study.

- Obligations to the public or to society
- Obligations to employers
- Obligations to clients
- Obligations to colleagues
- Obligations to professional organizations; and
- Obligations to the profession

By reviewing the canons of the organizations previously identified it is obvious where they fit in relationship to the six classifications identified by Wiley (2000).

According to the *Toronto Resolution* (Fawcett, 1993) the following selected elements should be part of any code of ethics.

1. A code should articulate as far as possible the underlying assumptions and guiding principles of a working ethic.
2. A code should indicate specific measures designed to ensure that signatories adhere to its principles.
3. A code should be sufficiently general to encompass scholarly work and basic, applied and technological research as well as actions of practitioners engaged in the discipline or profession.

4. A code should oppose prejudice with respect to sex, religion, national or ethnic origin, age, sexual preference, color, or physical or mental disability.
5. A code should take into account that, while in general it is difficult to anticipate all the consequences of research, scientists and scholars have a responsibility, individually and collectively, to try to foresee, and to keep themselves aware of, the developing applications of their work, and to choose or redirect it accordingly.
6. A code should recognize that actions designed narrowly to benefit humankind might in fact threaten the survival of all species, since the ecosystem is a seamless web.
7. A code should forbid research directed towards developing or using methods of torture, or other devices and techniques that threaten violate individual or collective human rights.
8. A code should direct scholarly and scientific activity towards the peaceful resolution of conflict and universal disarmament, since all research has military potential, every scientist and scholar should seek to resolve the ethical problem that knowledge, which should enlighten and benefit humanity, may be used instead to harm the planet and its people in war and in preparation for war.
9. A code should encourage its adherents to comply with established procedures for the scientific and (where appropriate) ethical peer review of research studies conducted under its auspices and, where such procedures do not exist, a code should specify them.
10. A code should urge its adherents to make all basic research results universally available.
11. A code should urge its adherents to identify and report violations of its terms, and should correspondingly ensure their protection from retribution by their fellow scientists, professional and learned societies, and the judiciary for such exposure.
12. A code should be widely disseminated through the school and university curricula, to educate the rising generations, as well as practicing

scientists and scholars, about their emerging responsibilities.

It should be obvious from reading these codes that some of these elements are most germane to the educators who are members of NAIT and others are most applicable to both educators and practitioners.

According to McGinn (1991) science and technology have precipitated many of the ethical dilemmas faced in the twentieth and twenty-first centuries and therefore these developments call for revisions to the traditional thinking about ethical decision-making. McGinn suggests that *qualified neo-consequentialism* is an ethical theory deserving consideration. Assessments of the likely consequences of an action, design, process, etc. would be carefully made before an action would be taken. The assessments would have the following *neo-consequentialist* qualities. They should be

1. *Focused on harm and well-being* - directed to identifying the importance of consequences likely to influence the harm or well-being of affected parties.
2. *Refined* – designed to detect or at least be on the lookout for subtle effects that, although perhaps hidden or manifested only indirectly, may nonetheless significantly influence stakeholder harm or well-being;
3. *Comprehensive* – designed to attend to *all* harm and well-being-related effects – social and cultural as well as economic and physical in nature – of the candidate action, policy, or practice on *all* pertinent parties,

remote as well as present, “invisible” as well as influential;

4. *Discriminating* – designed to enable scientific and technological options to be examined critically on a case-by-case basis, in a manner neither facetiously optimistic nor resolutely pessimistic, and such that any single proposal can emerge as consequentially praiseworthy and be adopted or as consequentially ill-advised and be rejected in its present form, if not outright; and
5. *Prudent*- embodying an attitude toward safety that, as long as a credible jury is still out or if it has returned hopelessly deadlocked, is as conservative as the magnitude of the possible disaster is large. (p.164)

As practitioners and educators we face ethical dilemmas regularly and need tools to deal with them. According to a survey conducted by Wiley (2000) professionals rely heavily on their education and their professional organizations to provide them with guidance when faced with ethical dilemmas.

I would never presume to propose a Code of Ethics for Industrial Technology, however, as a member of NAIT for more than 20 years I feel that one is needed and therefore, propose that a process for developing and disseminating one be implemented. I believe that a Code of Ethics/Code of Conduct is one of the essential elements of a truly evolved profession and academic discipline and therefore, it is incumbent upon the professional organization representing the discipline to lead the effort to develop one.

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