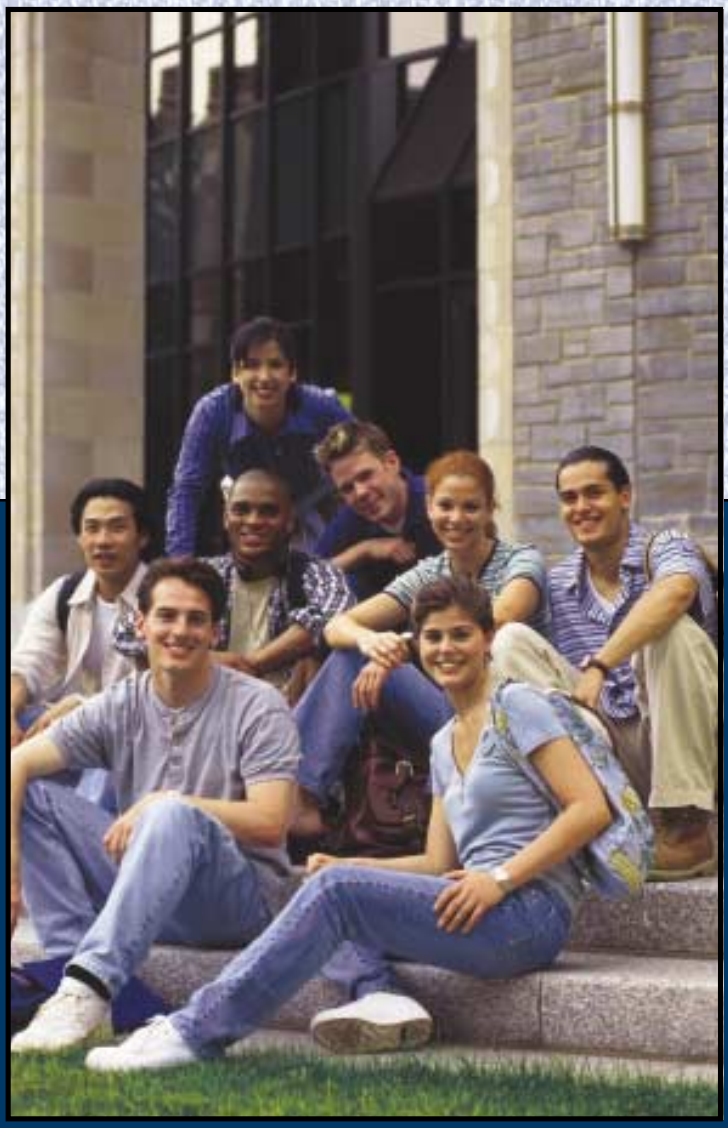
ASHRAE Student Guide



Stepping Toward the Future

What is ASHRAE?

The American Society of Heating, Refrigerating and Air Conditioning Engineers Inc. (ASHRAE) is an international technical society dedicated to improving the quality of life through the advancement of technology related to heating, refrigeration, air conditioning and ventilation.

ASHRAE traces its beginning to 1894 when 75 heating and ventilation engineers met in New York City to organize the American Society of Heating and Ventilating Engineers (ASHVE). In 1904, a second group of engineers met in New York City to form the American Society of Refrigerating Engineers (ASRE). After World War II, the study of air-conditioning technology increased within the two societies. This led to their merger in 1959, which formed ASHRAE.

ASHRAE is a grassroots organization that depends on individual and chapter participation. With over 160 local chapters and 250 student branches, student members can take advantage of chapter sponsored seminars and lecture series on current technical developments or industry news.

In addition, many chapters sponsor scholarships for students and help organize and support ASHRAE student branches.

Membership

ASHRAE is unique because its membership is drawn from a wide range of disciplines relating to the HVAC&R field. Approximately 50,000 individuals from more than 100 nations belong to the Society. Among them are students, consulting engineers, mechanical contractors, building owners and employees of manufacturing companies, educational institutions, research organizations, government or any organization concerned with environmental control. Members also include longtime engineers and professionals in other related disciplines such as architecture and medical research. There are four main grades of ASHRAE membership:

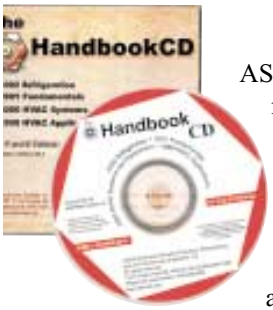
- Member
- Associate Member
- Affiliate Member
- Student Member

Technology

ASHRAE promotes HVAC&R technology for the benefit of all people by developing standards, sponsoring research and providing for technology transfer through technical publications, programs, conferences etc.

ASHRAE's technical expertise is concentrated into technical committees (TCs), task groups (TGs) and technical resource groups (TRGs). They are responsible for preparing the text of the ASHRAE Handbook series, originating and coordinating ASHRAE-sponsored research projects, presenting programs at ASHRAE meetings, reviewing technical papers, evaluating the need for standards and advising the Society on all aspects of technology.

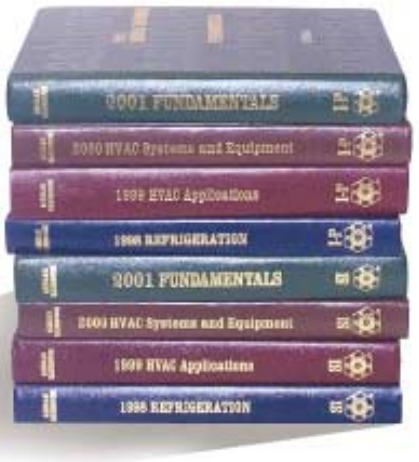
Standards are documents written by committees comprised of ASHRAE members. These documents define properties, processes, dimensions, materials, relationships, concepts, test methods and recommended design and practice. ASHRAE standards benefit the public by providing the private and public sectors with recognized consensus criteria and guidance.



Publications

ASHRAE student members qualify for considerable discounts on many ASHRAE publications including a discount on The Fundamentals Handbook. In addition students receive a discount on the cost of the Fundamentals, HVAC Systems and Refrigeration CD. The ASHRAE Handbook is published in four volumes: Fundamentals, Equipment and Systems, Refrigeration and HVAC Applications. Students are given a 70% discount on the cost of the ASHRAE Handbook volumes and CD.

The ASHRAE Journal, the Society's monthly magazine, features technical articles, industry news and important information about Society policy and programs. The monthly tabloid, ASHRAE *Insights*, provides news of Society happenings, regional and chapter events as well as news of special interest to students. Student members receive these two publications monthly as part of their membership.



ASHRAE Learning Institute (ALI)

The ASHRAE Learning Institute (ALI) addresses the growing educational needs of the HVAC&R industry. By drawing on the experiences of ASHRAE's 50,000 members worldwide and the more than 2000 leading practitioners who serve on ASHRAE technical and standard committees, the ALI program is reshaping the process by which ASHRAE members and young graduates keep pace with the engineering demands of the 21st Century.

Student Benefits

Over 5,000 students are taking advantage of belonging to an internationally respected Society of over 50,000 members, dedicated to advancing the arts and sciences of heating, ventilating, air conditioning, and refrigeration. Additional benefits of student membership include networking opportunities with ASHRAE members, free meeting registration to the Winter and Annual ASHRAE meetings and participation in a student branch and local chapter.

Student Branches

If your educational institution does not have an ASHRAE Student Branch, then you may be interested in forming one. Students interested in an HVAC&R career are encouraged to participate in ASHRAE to further their knowledge, practical experience and professional development. There are more than 200 active ASHRAE student branches. Establishing a student branch is easy and the rewards are great. All you need is a minimum of 10 student members, a faculty member interested in being the student branch advisor and a local ASHRAE chapter who will serve as the sponsoring chapter.

Student Design Project Competition

The Student Design Project Competition recognizes undergraduate students who have completed design projects based on the topics prescribed in the current year's competition brochure. The winners receive prize money as well as a trip to the ASHRAE Winter Meeting. For further information on how to enter, contact your student branch advisor, local chapter or ASHRAE Headquarters. The deadline is in May.

Undergraduate Senior Project Grant Program

Faculty members who require an ASHRAE-related topic for a senior project in an engineering curriculum may apply for a grant of up to $5,000. The projects must be primarily of an equipment "hands-on" type (for example, test equipment, development of experimental teaching aids and laboratory experiments that can help students and research projects. Applications should be requested from the Education Coordinator at ASHRAE Headquarters. The deadline is December 1.

Grants In Aid

Graduate students in the field of HVAC Engineering may receive up to $7,500. Applications can be requested from and are to be sent to the ASHRAE Manager of Research and Technical Services. The deadline is December 15.

Local Chapter Scholarships

Various scholarships are offered by local chapters to undergraduate students who meet the criteria for that specific scholarship. Students should contact their local chapter for details on applying for local scholarships.

Society Scholarships

ASHRAE offers scholarships that provide financial support to top undergraduate engineering and engineering technology students. Students must be pursuing a course of study with emphasis in HVAC or refrigeration engineering at accredited universities. Application deadline is December 1st for the Undergraduate Engineering Scholarships and May 1 for the Engineering Technology Scholarship.

ASHRAE Meetings

ASHRAE student members may attend ASHRAE's two major meetings (Winter and Annual) on a complimentary basis. Each meeting provides an opportunity to attend a variety of technical sessions, seminars, forums, and symposia on current topics of interest to the HVAC&R engineer. Forums of special interest to students and faculty are planned for each meeting. During the Winter Meeting a student program is held on Sunday morning. The exposition makes each winter meeting unique and offers an excellent opportunity to see first hand the latest in HVAC&R technology.

Upgrading To Regular Membership

Shortly before graduation, students will receive an invitation to upgrade their membership from student to regular member. The normal application processing fee is waived for students who are upgrading their membership within one year after graduation. Contact the membership department for more information.

Opportunities and Challenges for HVAC&R Professionals

It is currently estimated that there are between 65,000 and 85,000 technical professionals employed in the HVAC&R related industries. Approximately one third of these professionals are 55 years of age or older and expected to retire from active practice over the next 10 years. This spells opportunity for students with an interest in the HVAC&R field!

The HVAC industry is on the cutting edge of technology. Advances in the super computing and super-conductivity fields will require equal advances in the HVAC&R technologies to efficiently and cost-effectively remove heat from complex systems. New energy management systems are needed that can use state of the art digital computer controls to maintain comfort while minimizing operating costs. Technical challenge and opportunity in the HVAC&R industry is limited only by your imagination.

ASHRAE Student Members – Changing the Face of the Future

Areas of Employment in the Air-Conditioning, Heating and Refrigeration Industry

Design and Consulting:
Companies devoted to designing and engineering the heating, cooling, ventilating, plumbing and electrical systems for buildings. Includes preparation of drawings, specifications, estimate of cost, supervision of installation and final approval.

Contracting:
Companies that sell and install mechanical systems. Includes installation and fabrication of system components, preparation of drawings, estimation of costs and supervision of installation according to specifications.

Servicing:
Companies that repair and maintain mechanical systems. Includes repair and maintaining of system components as well as safe end installation of replacement components for economic and efficient system operation.

Manufacturing:
Companies that purchase raw material or components and fabricate or assemble into equipment for sale. Includes sales and marketing, research development, design and production.

Merchandising and Sales:
Companies which promote and sell equipment and components which have been manufactured by others. Includes sales promotion, advertising, warehousing and technical assistance.

Government and Utilities:
Governments, utilities and other agencies provide their own consulting and servicing functions, set standards, test equipment and approve installations.

Facilities Planning and Operation:
Institutions, industrial and real estate corporations employ HVAC for planning, installation coordination and operations of building HVAC systems.

Teaching and Research
Faculty at colleges, universities, vocational and technical schools develop and teach courses as well as conduct important research necessary to develop new technologies.

For more information, contact:
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