



Ophthalmic Laboratory Technician Overview

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The Field

Ophthalmic laboratory technicians -- also known as manufacturing opticians, optical mechanics, or optical goods workers -- make prescription eyeglass or contact lenses. Prescription lenses are curved in such a way that light is correctly focused onto the retina of the patient's eye, improving his or her vision. Some ophthalmic laboratory technicians manufacture lenses for other optical instruments, such as telescopes and binoculars. Ophthalmic laboratory technicians cut, grind, edge, and finish lenses according to specifications provided by dispensing opticians, optometrists, or ophthalmologists and may insert lenses into frames to produce finished glasses. Although some lenses still are produced by hand, technicians are increasingly using automated equipment to make lenses.



Ophthalmic laboratory technicians should not be confused with workers in other vision care occupations. Ophthalmologists and optometrists are "eye doctors" who examine eyes, diagnose and treat vision problems, and prescribe corrective lenses. Ophthalmologists are physicians who also perform eye surgery. Dispensing opticians, who also may do the work of ophthalmic laboratory technicians, help patients select frames and lenses, and adjust finished eyeglasses.

Ophthalmic laboratory technicians read prescription specifications, select standard glass or plastic lens blanks, and then mark them to indicate where the curves specified on the prescription should be ground. They place the lens in the lens grinder, set the dials for the prescribed curvature, and start the machine. After a minute or so, the lens is ready to be "finished" by a machine that rotates it against a fine abrasive, to grind it and smooth out rough edges. The lens is then placed in a polishing machine with an even finer abrasive, to polish it to a smooth, bright finish.



Next, the technician examines the lens through a lensometer, an instrument similar in shape to a microscope, to make sure that the degree and placement of the curve are correct. The technician then cuts the lenses and bevels the edges to fit the frame, dips each lens into dye if the prescription calls for tinted or coated lenses, polishes the edges, and assembles the lenses and frame parts into a finished pair of glasses.

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Prepared as part of the Sloan Career Cornerstone Center (www.careercornerstone.org)

Note: Some resources in this section are provided by the US Department of Labor, Bureau of Labor Statistics.

In small laboratories, technicians usually handle every phase of the operation. In large ones, in which virtually every phase of the operation is automated, technicians may be responsible for operating computerized equipment. Technicians also inspect the final product for quality and accuracy.

Preparation

Most ophthalmic laboratory technicians learn their craft on the job; however, many employers prefer to hire those with formal training.

Ophthalmic laboratory technicians start on simple tasks if they are training to produce lenses by hand. They may begin with marking or blocking lenses for grinding; then, they progress to grinding, cutting, edging, and beveling lenses; finally, they are trained in assembling the eyeglasses. Depending on individual aptitude, it may take up to 6 months to become proficient in all phases of the work.



Employers filling trainee jobs prefer applicants who are high school graduates. Courses in science, mathematics, and computers are valuable; manual dexterity and the ability to do precision work are essential. Technicians using automated systems will find computer skills valuable.

A few ophthalmic laboratory technicians learn their trade in the Armed Forces or in the few programs in optical technology offered by vocational-technical institutes or trade schools. These programs have classes in optical theory, surfacing and lens finishing, and the reading and applying of prescriptions. Programs vary in length from 6 months to 1 year and award certificates or diplomas. The Commission on Opticianry Accreditation (COA), a not-for-profit agency, that accredits ophthalmic laboratory technology programs in the United States. The following is a list of currently accredited programs.

<p>Connecticut</p> <ul style="list-style-type: none"> • <u>Middlesex Community College</u> <p>Florida</p> <ul style="list-style-type: none"> • <u>Hillsborough Community College</u> • <u>Miami Dade Community College</u> <p>Georgia</p> <ul style="list-style-type: none"> • <u>Dekalb Technical College</u> • <u>Ogeechee Technical College</u> <p>Indiana</p> <ul style="list-style-type: none"> • <u>Indiana University</u> <p>New Jersey</p> <ul style="list-style-type: none"> • <u>Camden County College</u> • <u>Essex County College</u> • <u>Raritan Valley Community College</u> <p>New Mexico</p> <ul style="list-style-type: none"> • <u>Southwestern Indian Polytechnic Institute</u> <p>Nevada</p> <ul style="list-style-type: none"> • <u>Community College Of Southern Nevada</u> 	<p>New York</p> <ul style="list-style-type: none"> • <u>Erie Community College</u> • <u>Interboro Institute</u> • <u>New York City College Of Technology</u> <p>North Carolina</p> <ul style="list-style-type: none"> • <u>Durham Technical Community College</u> <p>Tennessee</p> <ul style="list-style-type: none"> • <u>Roane State Community College</u> <p>Texas</p> <ul style="list-style-type: none"> • <u>El Paso Community College</u> • <u>Tyler Junior College</u> <p>Virginia</p> <ul style="list-style-type: none"> • <u>Naval Ophthalmic Support & Training Activity</u> • <u>J. Sargeant Reynolds Community College</u> <p>Washington</p> <ul style="list-style-type: none"> • <u>Seattle Central Community College</u>
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Day in the Life

Ophthalmic laboratory technicians generally work in clean, well-lit, and well-ventilated laboratories. They have limited contact with the public. Salaried laboratory technicians usually work 40 hours a week, but some work part time. At times, technicians wear goggles to protect their eyes, gloves to handle hot objects, or masks to avoid inhaling dust. They may spend a great deal of time standing.



Earnings

According to the U.S. Department of Labor, Bureau of Labor Statistics, the median hourly earnings of wage-and-salary ophthalmic laboratory technicians is about \$12.24. The middle 50 percent earn between \$9.86 and \$15.82 an hour. The lowest 10 percent earn less than \$8.38, and the highest 10 percent earn more than \$19.98 an hour. Median hourly earnings are \$11.63 in medical equipment and supplies manufacturing and \$11.49 in health and personal care stores, the two industries that employ the most ophthalmic laboratory technicians.



Employment

Ophthalmic laboratory technicians hold about 29,000 jobs in the United States. About 55 percent of salaried jobs were in medical equipment and supply manufacturing laboratories, which usually are small, privately owned businesses with fewer than 5 employees. However, some laboratories are large; a few employ more than 1,000 workers.



Most ophthalmic laboratory technician jobs were in medical equipment and supplies manufacturing laboratories, about 29 percent. Another 29 percent of jobs were in health and personal care stores, such as optical goods stores that manufacture and sell prescription glasses and contact lenses. Some jobs were in offices of optometrists or ophthalmologists, while others worked at professional and commercial equipment and supplies merchant wholesalers. A few worked in commercial and service industry machine manufacturing firms that produce lenses for other optical instruments, such as telescopes and binoculars.

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Career Path Forecast

According to the U.S. Department of Labor, Bureau of Labor Statistics, ophthalmic laboratory technicians are expected to experience employment growth of seven percent from 2006 - 2016, about as fast as the average for all occupations. Demographic trends make it likely that many more Americans will need vision care in the years ahead. Not only will the population grow, but also the proportion of middle-aged and older adults is projected to increase rapidly. Middle age is a time when many people use corrective lenses for the first time, and elderly persons usually require more vision care than others. However, the increasing use of automated machinery will temper job growth for ophthalmic laboratory technicians.



Professional Organizations

Professional societies provide an excellent means of keeping current and in touch with other professionals in the field. These groups can play a key role in your development and keep you abreast of what is happening in your field. Associations promote the interests of their members and provide a network of contacts that can help you find jobs and move your career forward. They can offer a variety of services including job referral services, continuing education courses, insurance, travel benefits, periodicals, and meeting and conference opportunities. The following is a partial list of professional associations serving ophthalmic laboratory technicians.



- ▶ **Commission on Opticianry Accreditation (www.coaccreditation.com)**
- ▶ **Contact Lens Society of America (www.clsa.info)**
- ▶ **Optical Laboratories Association (www.ola-labs.org)**

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