

2007 Mississippi Curriculum Framework

Postsecondary Optometric Assisting Technology

(Program CIP: 51.1802 – Optometric Technician/Assistant)

Direct inquiries to

Debra West
Director for Career and Technical Education
State Board for Community and Junior Colleges
3825 Ridgewood Road
Jackson, MS 39211
(601) 432-6518
dwest@sbcjc.cc.ms.us

Stephanie King, Ph.D.
Instructional Design Specialist
Research and Curriculum Unit
P.O. Drawer DX
Mississippi State, MS 39762
(662) 325-2510
sbk2@ra.msstate.edu

Additional copies

Research and Curriculum Unit for Workforce Development
Vocational and Technical Education
Attention: Reference Room and Media Center Coordinator
P.O. Drawer DX
Mississippi State, MS 39762
<http://cia.rcu.msstate.edu/Curriculum/download.asp>
(662) 325-2510

Published by

Office of Vocational and Technical Education
Mississippi Department of Education
Jackson, Mississippi 39205

Research and Curriculum Unit for Workforce Development
Vocational and Technical Education
Mississippi State University
Mississippi State, Mississippi 39762

The Mississippi Department of Education, Office of Vocational Education and Workforce Development does not discriminate on the basis of race, color, religion, national origin, sex, age, or disability in the provision of educational programs and services or employment opportunities and benefits. The following office has been designated to handle inquiries and complaints regarding the non-discrimination policies of the Mississippi Department of Education: Director, Office of Human Resources, Mississippi Department of Education, 359 North West Street, Suite 359, Jackson, Mississippi, 39201, (601) 359-3511.

Acknowledgments

Writing Team	Veronica Scott, Hinds Community College, Pearl, MS
RCU Staff	Stephanie King, Ph.D. – Instructional Design Specialist
Professional Curriculum Advisory Team	Barbara Gaines, Ashford Associates, Jackson, MS Dr. Joe Joseph, 20/20 Eyecare, Pearl, MS Dr. Jeffrey Minor, Minor Optometry, Flowood, MS Dr. Leonard Niewald, Retired Optometrist, Jackson, MS Dr. Tina Sorey, Sorey Eyecare, Flowood, MS

Standards in this document are based on information from the following organizations:

Standard Based on the Certified Paraoptometric Examination Guide	Commission on Paraoptometric Certification materials used with permission.
Related Academic Standards	CTB/McGraw-Hill LLC. (1994). <i>Tests of adult basic education, Forms 7 and 8</i> . Monterey, CA: Author. Reproduced with permission of CTB/McGraw-Hill LLC. TABE is a registered trademark of The McGraw-Hill Companies, Inc. Copyright © 1994 by CTB/McGraw-Hill LLC. Reproduction of this material is permitted for educational purposes only.
21st Century Skills	Reproduced with permission of the Partnership for 21 st Century Skills. Further information may be found at www.21stcenturyskills.org

Preface

Postsecondary Optometric Assisting Technology Research Synopsis

Articles, books, Web sites, and other materials listed at the end of each course were considered during the development process. Standards from the Commission on Paraoptometric Certification were especially useful in providing insight into trends and issues in the field. These references are suggested for use by instructors and students during the study of the topics outlined.

The industry advisory team members from the college worked closely with the community college instructor and instructional design specialist in the development of the curriculum framework. In addition to basic optometric assisting skills, additional occupational-specific skills suggested included billing and coding, lens fabrication, and an understanding of genetics. Input was also given by the American Optometric Association related to topics required for certification for a Certified Paraoptometric.

Curriculum

The following national standards were referenced in each course of the curriculum:

- CTB/McGraw-Hill LLC *Tests of Adult Basic Education, Forms 7 and 8* Academic Standards
- *21st Century Skills*
- Standard Based on the *Certified Paraoptometric Examination Guide*

Industry and instructor comments, along with current research, were considered by the curriculum development team during the development process. Specific work with the curriculum included:

- A course outline was developed for a two-year 1+1 program.
- Competencies and objectives were developed based on certification guides and industry needs and were written to a variety of levels of Bloom's taxonomy.
- References were suggested for each course.
- A Recommended Tools and Equipment list was developed.

Assessment

Students will be assessed using the *Postsecondary Optometric Assisting Technology MS-CPAS2 Test*.

Professional Learning

It is suggested that instructors participate in professional learning related to the following concepts:

- Blackboard® training – To learn more about Blackboard® training, please go to <https://cia.rcu.msstate.edu/OnlinePD/>.
- Differentiated instruction – To learn more about differentiated instruction, please go to http://www.paec.org/teacher2teacher/additional_subjects.html and click on Differentiated Instruction. Work through this online course and review the additional resources.

Foreword

As the world economy continues to evolve, businesses and industries must adopt new practices and processes in order to survive. Quality and cost control, work teams and participatory management, and an infusion of technology are transforming the way people work and do business. Employees are now expected to read, write, and communicate effectively; think creatively, solve problems, and make decisions; and interact with each other and the technologies in the workplace. Vocational-technical programs must also adopt these practices in order to provide graduates who can enter and advance in the changing work world.

The curriculum framework in this document reflects these changes in the workplace and a number of other factors that impact on local vocational-technical programs. Federal and state legislation calls for articulation between high school and community college programs, integration of academic and vocational skills, and the development of sequential courses of study that provide students with the optimum educational path for achieving successful employment. National skills standards, developed by industry groups and sponsored by the U.S. Department of Education and Labor, provide vocational educators with the expectations of employers across the United States. All of these factors are reflected in the framework found in this document.

Referenced throughout the courses of the curriculum are the 21st Century Skills, which were developed by the Partnership for 21st Century Skills, a group of business and education organizations concerned about the gap between the knowledge and skills learned in school and those needed in communities and the workplace. A portion of the 21st Century Skills addresses learning skills needed in the 21st century, including information and communication skills, thinking and problem-solving skills, and interpersonal and self-directional skills. The need for these types of skills has been recognized for some time and the 21st Century Skills are adapted in part from the 1991 report from the U.S. Secretary of Labor's Commission on Achieving Necessary Skills (SCANS). Another important aspect of learning and working in the 21st century involves technology skills, and the International Society for Technology in Education, developers of the National Educational Technology Standards (NETS), were strategic partners in the Partnership for 21st Century Skills.

Each postsecondary program of instruction consists of a program description and a suggested sequence of courses which focus on the development of occupational competencies. Each vocational-technical course in this sequence has been written using a common format which includes the following components:

- Course Name – A common name that will be used by all community/junior colleges in reporting students.
- Course Abbreviation – A common abbreviation that will be used by all community/junior colleges in reporting students.
- Classification – Courses may be classified as:
 - Vocational-technical core – A required vocational-technical course for all students.

- Area of concentration (AOC) core – A course required in an area of concentration of a cluster of programs.
 - Vocational-technical elective – An elective vocational-technical course.
 - Related academic course – An academic course which provides academic skills and knowledge directly related to the program area.
 - Academic core – An academic course which is required as part of the requirements for an Associate degree.
- Description – A short narrative which includes the major purpose(s) of the course and the recommended number of hours of lecture and laboratory activities to be conducted each week during a regular semester.
 - Prerequisites – A listing of any courses that must be taken prior to or on enrollment in the course.
 - Corequisites – A listing of courses that may be taken while enrolled in the course.
 - Competencies and Suggested Objectives – A listing of the competencies (major concepts and performances) and of the suggested student objectives that will enable students to demonstrate mastery of these competencies.

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75 percent of the time allocated to each course. The remaining 25 percent of each course should be developed at the local district level and may reflect:
 - Additional competencies and objectives within the course related to topics not found in the State framework, including activities related to specific needs of industries in the community college district.
 - Activities which develop a higher level of mastery on the existing competencies and suggested objectives.
 - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed/revised.
 - Activities which implement components of the Mississippi Tech Prep initiative, including integration of academic and vocational-technical skills and coursework, school-to-work transition activities, and articulation of secondary and postsecondary vocational-technical programs.
 - Individualized learning activities, including worksite learning activities, to better prepare individuals in the courses for their chosen occupational area.
- Sequencing of the course within a program is left to the discretion of the local district. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors.

- Programs that offer an Associate of Applied Science degree must include a minimum 15 semester credit hour academic core. Specific courses to be taken within this core are to be determined by the local district. Minimum academic core courses are as follows:
 - 3 semester credit hours Math/Science Elective
 - 3 semester credit hours Written Communications Elective
 - 3 semester credit hours Oral Communications Elective
 - 3 semester credit hours Humanities/Fine Arts Elective
 - 3 semester credit hours Social/Behavioral Science Elective

It is recommended that courses in the academic core be spaced out over the entire length of the program, so that students complete some academic and vocational-technical courses each semester. Each community/junior college has the discretion to select the actual courses that are required to meet this academic core requirement.

- In instances where secondary programs are directly related to community and junior college programs, competencies and suggested objectives from the high school programs are listed as Baseline Competencies. These competencies and objectives reflect skills and knowledge that are directly related to the community and junior college vocational-technical program. In adopting the curriculum framework, each community and junior college is asked to give assurances that:
 - Students who can demonstrate mastery of the Baseline Competencies do not receive duplicate instruction, and
 - Students who cannot demonstrate mastery of this content will be given the opportunity to do so.
- The roles of the Baseline Competencies are to:
 - Assist community/junior college personnel in developing articulation agreements with high schools, and
 - Ensure that all community and junior college courses provide a higher level of instruction than their secondary counterparts.
- The Baseline Competencies may be taught as special “Introduction” courses for 3-6 semester hours of institutional credit which will not count toward Associate degree requirements. Community and junior colleges may choose to integrate the Baseline Competencies into ongoing courses in lieu of offering the “Introduction” courses or may offer the competencies through special projects or individualized instruction methods.
- Technical elective courses have been included to allow community colleges and students to customize programs to meet the needs of industries and employers in their area.

In order to provide flexibility within the districts, individual courses within a framework may be customized by:

- Adding new competencies and suggested objectives.
- Revising or extending the suggested objectives for individual competencies.
- Integrating baseline competencies from associated high school programs.

- Adjusting the semester credit hours of a course to be up 1 hour or down 1 hour (after informing the State Board for Community and Junior Colleges [SBCJC] of the change).

In addition, the curriculum framework as a whole may be customized by:

- Resequencing courses within the suggested course sequence.
- Developing and adding a new course which meets specific needs of industries and other clients in the community or junior college district (with SBCJC approval).
- Utilizing the technical elective options in many of the curricula to customize programs.

Table of Contents

Acknowledgments.....	2
Preface.....	3
Foreword.....	4
Program Description.....	9
Suggested Course Sequence.....	10
Optometric Assisting Technology Courses.....	12
Basic Optical Concepts.....	12
Ocular Anatomy.....	15
Body Structure.....	18
Optical Dispensing I.....	22
Optical Dispensing II.....	25
Contact Lenses.....	27
Human Relations.....	31
Patient Relations and Practice Management.....	34
Ophthalmic Pre-Testing.....	36
Ophthalmic Specialty Testing.....	39
Pre-Clinical.....	42
Clinical Experience.....	45
Body Structure and Function.....	48
Ocular Pharmacy.....	51
Billing Coding.....	54
Recommended Tools and Equipment.....	57
Assessment.....	59
Baseline Competencies.....	60
Appendix A: Standards Based on the Certified Paraoptometric Examination Guide.....	64
Appendix B: Related Academic Standards.....	65
Appendix C: 21 st Century Skills.....	66

Program Description

The Optometric Assisting Technology program is a two-year program which leads to an Associate of Applied Science degree in Optometric Assisting. Alternately, students may complete a 1+1 certificate option in the program. The Optometric Technician's primary responsibilities are to help the licensed Optometrist in eye and vision care. Activities include measuring the curvature of the cornea, color testing, stereo-testing, taking acuities, retinal and corneal photography, measuring the pressure of the eye, determining the power of old and new eye glass prescriptions, helping clients select frames, and measuring facial contours. The Optometric Technician educates the patient on the tests being done and on choices in eyeglasses to help decrease uncertainty or fear in clients. Other duties may include dispensing contact lenses, determining the power and dimensions of old and new contact lenses, and explaining the care and handling of lenses. It is also often necessary to explain the use and application of pharmaceutical agents to the eye. Laboratory work and general management of a vision clinic is occasionally necessary.

Industry standards referenced are based on the *Certified Paraoptometric Examination Guide*.

Suggested Course Sequence*

Optometric Assisting Technology

1+1 Certificate and A.A.S. Degree

Baseline Competencies for Optometric Assisting Technology**

FIRST YEAR

3 sch Basic Optical Concepts (OMT 1113)	3 sch Optical Dispensing II (OMT 1223)
2 sch Ocular Anatomy (OMT 1122)	3 sch Contact Lenses (OMT 1233)
2 sch Body Structure (OMT 1132)	2 sch Patient Relations and Practice Management (OMT 1322)
3 sch Optical Dispensing I (OMT 1213)	3 sch Ophthalmic Specialty Testing (OMT 1423)
1 sch Human Relations (OMT 1311)	2 sch Pre-Clinical (OMT 1512)
3 sch Ophthalmic Pre-testing (OMT 1413)	3 sch Oral Communications Elective
3 sch Written Communications Elective	
17 sch	16 sch

SUMMER I

6 sch Clinical Experience (OMT 1526)

SECOND YEAR

4 sch Human Anatomy and Physiology I and Lab (BIO 2514)	4 sch Human Anatomy and Physiology II and Lab (BIO 2524)
4 sch Microbiology and Lab (BIO 2924)	3 sch Mathematics/Science Elective
3 sch Humanities/Fine Arts Elective	3 sch Social/Behavioral Science Elective
3 sch Approved Elective	3 sch Approved Elective
14 sch	13 sch

* Students who lack entry level skills in math, English, science, etc. will be provided related studies.

** Baseline competencies are taken from the high school Allied Health program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

APPROVED ELECTIVES

Body Structure and Function (OMT 2113)

Ocular Pharmacy (OMT 2223)
Billing & Coding (OMT 2613)
Word Processing (BOT 1143)
Records Management (BOT 1413)
Business Accounting (BOT 1433)
Keyboard Concepts (BOT 1843)
Business Communication (BOT 2813)
General Psychology I (PSY 1513)

Optometric Assisting Technology Courses

Course Name: Basic Optical Concepts

Course Abbreviation: OMT 1113

Classification: Vocational-Technical Core

Description: This course covers the properties of light and the function of a lens in vision correction. Included is a review of basic mathematics needed in vision care and the physiological aspects of vision. This course begins the study of the neutralization and verification of spectacle lens powers, to include spherical, cylindrical, and prism lenses. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives	
1.	Predict the refraction of light rays as they pass through an optical surface. <ol style="list-style-type: none"> a. Explain light refraction. b. Predict the refraction of a single light ray and how it is affected when passing through a transparent optical surface. c. Predict the refraction of a multiple light ray and how it is affected through a transparent optical surface. d. Apply the wave theory.
2.	Examine the effects of optical prism on vision. <ol style="list-style-type: none"> a. Distinguish between wanted and unwanted prism. b. Demonstrate the effects of prisms on an ophthalmic lens. c. Calculate prism for a given prescription.
3.	Relate optical effects to decentration. <ol style="list-style-type: none"> a. Explain the purpose of decentering the lens. b. Predict the effect a prism has on a ray of light. c. Examine the relationship between prism and decentration.
4.	Interpret the ophthalmic prescription. <ol style="list-style-type: none"> a. Distinguish between the effects of positive and negative cylinders on the lens. b. Determine the total lens power as taken from the optical cross. c. Determine the appropriate base curve for a given prescription.
5.	Correlate the vertex distance and lens positioning. <ol style="list-style-type: none"> a. Determine the effects of the lens as it is positioned before the eye. b. Calculate the effective power of the lens due to shift in vertex distance. c. Determine the amount of compensation due to the shift in vertex distance.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

CPE 5 The student understands refractive status.

- CPE 6 The student understands ophthalmic prescriptions.
 CPE 7 The student understands ophthalmic lenses.
 CPE 11 The student applies terminology.

Related Academic Standards

- R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
 M1 Addition of Whole Numbers (no regrouping, regrouping)
 M2 Subtraction of Whole Numbers (no regrouping, regrouping)
 M3 Multiplication of Whole Numbers (no regrouping, regrouping)
 M4 Division of Whole Numbers (no remainder, remainder)
 M5 Decimals (addition, subtraction, multiplication, division)
 M6 Fractions (addition, subtraction, multiplication, division)
 M7 Integers (addition, subtraction, multiplication, division)
 M8 Percents
 M9 Algebraic Operations
 A1 Numeration (ordering, place value, scientific notation)
 A2 Number Theory (ratio, proportion)
 A3 Data Interpretation (graph, table, chart, diagram)
 A4 Pre-Algebra and Algebra (equations, inequality)
 A5 Measurement (money, time, temperature, length, area, volume)
 A6 Geometry (angles, Pythagorean theory)
 A7 Computation in Context (whole numbers, decimals, fractions, algebraic operations)
 A8 Estimation (rounding, estimation)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS4 Information and Communication Skills
 CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

American Academy of Optometry. (n.d.). Retrieved August 18, 2005, from <http://www.aaopt.org/>

American Board of Opticianry. (n.d.). Retrieved August 18, 2005, from <http://www.abo-ncle.org/>

Borish, I., & Brooks, C. (1996). *Systems for ophthalmic dispensing* (2nd ed.). Newton, MA: Butterworth-Heinemann.

- Borover, W. (1981). *Opticianry: The practice and the art. Vol. I – Introduction to dispensing*. Chula Vista, CA: Gracie Enterprises.
- Borover, W. (1982). *Opticianry: The practice and the art. Vol. II – The science of opticianry*. Chula Vista, CA: Gracie Enterprises.
- Cassin, B., & Rubin, M.L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.
- Dowaliby, M. (2001). *Practical aspects of ophthalmic optics* (4th ed.). Newton, MA: Butterworth-Heinemann.
- Hecht, E. (2002). *Optics* (4th ed.). Glenview, IL: Addison Wesley.
- Perkins, P., & Stoner, E. (1997). *Optical formulas tutorial*. Newton, MA: Butterworth-Heinemann.
- 20/20 magazine. (n.d.). Retrieved August 18, 2005, from <http://www.2020mag.com/index.asp>

Course Name: Ocular Anatomy

Course Abbreviation: OMT 1122

Classification: Vocational-Technical Core

Description: This course is intended to familiarize the optometric technician with the form and function of the human eye. The foundation of the lecture material is the anatomy of the eye, but discussion of the physiology and function of the eye will be included as much as possible. Discussion of the actions and uses of diagnostic pharmaceutical agents will also be included, as their function is based on interference with normal ocular physiology. (2 sch: 1 hr. lecture, 1 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives	
1.	Utilize terminology related to ocular anatomy. <ol style="list-style-type: none"> Examine prefixes, suffixes, and root words commonly used in ocular terminology. Apply ocular terminology to the study of ocular anatomy, physiology, and pathology.
2.	Examine gross ocular anatomy. <ol style="list-style-type: none"> Describe the structure and function of the cornea. Describe the structure and function of the sclera. Describe the structure and function of the retina, including the crystalline lens. Identify the importance of the uveal tract, including the blood supply to the uveal tract. Describe the functions of the humors. Identify extrinsic muscles.
3.	Examine the visual pathway and how the components relate to vision. <ol style="list-style-type: none"> Identify the functions of the components of the visual pathway. Diagram the components of the visual pathway in the process of vision.
4.	Apply ocular anatomy concepts to the diagnosis and correction of visual abnormalities. <ol style="list-style-type: none"> Investigate cornea abnormalities. Investigate retina abnormalities. Investigate chamber abnormalities, including glaucoma, vitreous floaters, and vitreous detachment. Investigate ocular abnormalities involving the orbit. Investigate dry eye complications and treatment.
5.	Examine ocular pharmacology. <ol style="list-style-type: none"> Examine diagnostic agents. Examine therapeutic agents.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

CPE 1 The student understands the roles of eyecare specialists and ancillary personnel.

CPE 2 The student is competent in practice management.

- CPE 3 The student understands the anatomy of the eye.
 CPE 4 The student is competent in performing an eye examination.
 CPE 5 The student understands refractive status.
 CPE 6 The student understands ophthalmic prescriptions.
 CPE 7 The student understands ophthalmic lenses.
 CPE 8 The student understands ophthalmic dispensing.
 CPE 9 The student understands contact lenses.
 CPE 10 The student understands common eye disorders.
 CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
 R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 L3 Paragraph Development (topic sentence, supporting sentence, sequence)
 L4 Capitalization (proper noun, titles)
 L5 Punctuation (comma, semicolon)
 L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
 S1 Vowel (short, long)
 S2 Consonant (variant spelling, silent letter)
 S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS4 Information and Communication Skills
 CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

- Cassin, B., & Rubin, M. L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.
- Elkington, A., & Frank, H. (2003). *Clinical optics*. Malden, MA: Blackwell Science.
- Lemp, M., & Richard, S. (1998). *Clinical anatomy of the eye* (2nd ed.). Malden, MA: Blackwell Science.
- Optometry today*. (n.d.). Retrieved August 18, 2005, from <http://www.optometrytoday.com/>
- Remington, L. (2004). *Clinical anatomy of the visual system* (2nd ed.). Newton, MA: Butterworth-Heinemann.

Saude, T. (2003). *Ocular anatomy and physiology*. Malden, MA: Blackwell Science.

Snell, R., & Lemp, M. (1998). *Clinical anatomy of the eye* (2nd ed.). Malden: Blackwell Science.

Course Name: Body Structure

Course Abbreviation: OMT 1132

Classification: Vocational-Technical Core

Description: This course covers the introduction to the human body structure and function. Normal and abnormal states of the body and basic disease processes are emphasized. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives	
1.	Describe the chemical properties of water, and explain their importance for living things. <ol style="list-style-type: none"> Demonstrate the bonding patterns of carbon and organic molecules. Give examples of monosaccharide, disaccharides, and polysaccharides, and state their function. Explain and describe lipids and state their functions. Explain and describe proteins and state their functions. Explain and describe nucleic acids and state their functions.
2.	Explain why cells are small by nature. <ol style="list-style-type: none"> Describe the structure of the nucleus and its importance to the cell. Discuss the features and importance of ribosomes. Explain the relationship between the endoplasmic reticulum, the Golgi apparatus, and lysosomes. Explain the structure and function of the mitochondria within the cell.
3.	Discuss the digestive system and nutrition. <ol style="list-style-type: none"> Describe the features of the mouth that prepare food for swallowing. Explain how the structure of the pharynx ensures the passage of food into the esophagus. Describe the sections of the large intestine and know its general function. List several functions of the liver, and describe the roles of the gallbladder in digestion.
4.	Describe the composition and function of the blood. <ol style="list-style-type: none"> Describe the composition and general functions of the blood. List the characteristics of red blood cells. List various types of white blood cells, and describe their structures and functions. Explain how clotting factors in the blood operate to produce a blood clot. Describe how antibodies and antigens determine blood type in the ABO system.
5.	Discuss the cardiovascular system. <ol style="list-style-type: none"> Name and describe the structure and function of arteries, capillaries, and veins. Name the parts of the heart and their functions. Explain how the conduction system of the heart controls the heartbeat. Identify the factors that influence blood pressure. Identify the major vessels of the systemic circuit. List the functions of the lymphatic system. Discuss how the cardiovascular system works with other systems of the body to

maintain homeostasis.
<p>6. Describe the respiratory system.</p> <ol style="list-style-type: none"> Describe the pathway air takes in and out of the lungs and the structures involved that are designed to filter, warm, and moisten air. State and define the four processes involved in respiration. Describe the events that occur during external and internal respiration. List the names, symptoms, and causes of various diseases of the respiratory tract.
<p>7. Describe the urinary system and excretion.</p> <ol style="list-style-type: none"> List the organs involved in the urinary system. Explain the path of urine, and describe the general structure and function of each organ mentioned. Describe the macroscopic structure of the kidney. Describe the three steps in urine formation, and relate these to parts of a nephron. Name three hormones involved in maintaining blood volume, and explain how they function. Explain how the activities of the urinary system and other body systems work together to maintain homeostasis.
<p>8. Explain the skeletal system.</p> <ol style="list-style-type: none"> Describe the bone, cartilage, and fibrous connective tissues that comprise the skeleton. List the different cell types of bone, and give their function. List the sequence of events that occur as a bone repairs a fracture. List the functions of the skeleton. Classify joints according to their types. List the different types of joint movement.
<p>9. Describe the muscular system.</p> <ol style="list-style-type: none"> Describe the three types of muscle tissue. Describe the anatomy of a muscle fiber. Name three sources of ATP for muscle contractions.
<p>10. Describe the nervous system.</p> <ol style="list-style-type: none"> Describe the structure and function of the three major types of neurons. Describe the anatomy of the brain, name five major parts, and give a function of each. Describe in general the structure and function of the limbic system. Describe the autonomic system, and cite similarities as well as differences in the structure and function of the two divisions. Describe drug action in general, and discuss the effects of alcohol, marijuana, cocaine, and heroin. Discuss how the nervous system works with other systems of the body to maintain homeostasis.
<p>11. Explain how sensations occur.</p> <ol style="list-style-type: none"> Name two types of proprioceptors and describe their functions. Describe the senses that rely on chemo receptors. Describe the anatomy of the eye and the functions of each part. Describe the receptors for sight, their mechanism of action, and the mechanism for stereoscopic vision. Describe the anatomy of the ear and the function of each part.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

CPE 3 The student understands the anatomy of the eye.

CPE 11 The student applies terminology.

Related Academic Standards

R1 Interpret Graphic Information (forms, maps, reference sources)

R2 Words in Context (same and opposite meaning)

R3 Recall Information (details, sequence)

R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)

R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)

L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)

S1 Vowel (short, long)

S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

CS4 Information and Communication Skills

CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

The anatomy project: The eye [Computer software]. Calhoun, KY: NIMCO.

Cahill, D. R. (1997). *Lachman's case studies in anatomy* (4th ed.). New York: Oxford University Press.

The eye: Vision and perception [Video]. (1997). New York: Insight Media.

Fong, E., & Scott, A. (2004). *Body structure and functions* (10th ed.). Clifton Park, NY: Thomas Delmar Learning.

Human cardiovascular system: The blood vessels [Video]. (1995). San Francisco: Pearson Benjamin Cummings.

Lafferty, M., & Panella, S. (2004). A.D.A.M. interactive anatomy (Version 3.0) [Computer software]. San Francisco: Pearson Benjamin Cummings.

Lafferty, M., & Panella, S. (2004). *A.D.A.M. interactive anatomy student lab guide* (2nd ed.). San Francisco: Pearson Benjamin Cummings.

Mader, S. (2004). *Human biology* (8th ed.). New York: McGraw Hill.

Patton, K., & Thibodeau, K. (2004). *Structure and function of the body* (12th ed.). St. Louis, MO: Mosby.

Course Name: Optical Dispensing I

Course Abbreviation: OMT 1213

Classification: Vocational-Technical Core

Description: This course covers frame definition, parts and types of frames, measurement of frames and lenses, alignment of frames, inserting and removing lenses and an introduction to dispensing of eyewear and frame repairs. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives
1. Analyze eyewear components. <ol style="list-style-type: none"> Describe and explain frame material. Describe and identify frame components. Describe and identify frame types.
2. Demonstrate appropriate frame measurements. <ol style="list-style-type: none"> Analyze differences between the boxing and datum systems for measuring frames. Calculate and identify the eye size measurement in millimeters. Calculate and discuss the frame difference. Calculate and identify the "DBL" measurement in millimeters. Calculate and identify the temple length in millimeters and inches. Calculate and identify the minimum blank size.
3. Demonstrate insertion and removal of lenses from eyewear. <ol style="list-style-type: none"> Demonstrate insertion and removal of lenses into plastic and carbon frames. Demonstrate the insertion and removal of lenses into a metal frame. Demonstrate the insertion and removal of lenses into a nylon supra rimless frame. Demonstrate the shrinking of a plastic or metal frame.
4. Demonstrate eyewear alignment procedures. <ol style="list-style-type: none"> Demonstrate standard alignment of a plastic frame. Demonstrate alignment of a metal frame. Demonstrate usage of adjustment tools in the alignment process.
5. Demonstrate eyewear adjustment and maintenance. <ol style="list-style-type: none"> Demonstrate adjustment of plastic frame. Demonstrate adjustment of metal frame. Demonstrate adjustment of a rimless frame for a patient. Demonstrate usage of tools in the adjustment process. Explain proper eyewear handling techniques.
6. Apply the theory of pupillary distance. <ol style="list-style-type: none"> Explain monocular and binocular pupillary distance-ruler technique. Demonstrate the tape method of spotting the papillary distance.
7. Demonstrate knowledge of ordering and verification. <ol style="list-style-type: none"> Demonstrate ordering new lenses from existing spectacles. Demonstrate lens verification.

8. Apply optical consideration with increasing power.
 - a. Demonstrate lens power as related to position.
 - b. Demonstrate lens thickness increases.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 1 The student understands the roles of eyecare specialists and ancillary personnel.
- CPE 6 The student understands ophthalmic prescriptions.
- CPE 7 The student understands ophthalmic lenses.
- CPE 8 The student understands ophthalmic dispensing.
- CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
- R2 Words in Context (same and opposite meaning)
- R3 Recall Information (details, sequence)
- R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
- R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
- M9 Algebraic Operations
- A1 Numeration (ordering, place value, scientific notation)
- A2 Number Theory (ratio, proportion)
- A3 Data Interpretation (graph, table, chart, diagram)
- A4 Pre-Algebra and Algebra (equations, inequality)
- A7 Computation in Context (whole numbers, decimals, fractions, algebraic operations)
- A8 Estimation (rounding, estimation)
- S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

American Academy of Optometry. (n.d.). Retrieved August 18, 2005, from <http://www.aaopt.org/>

American Board of Opticianry. (n.d.). Retrieved August 18, 2005, from <http://www.abo-ncle.org/>

- American Optometric Association. (n.d.). Retrieved August 18, 2005, from <http://www.aoanet.org/>
- Borish, I., & Brooks, C. (1996). *Systems for ophthalmic dispensing* (2nd ed.). Newton, MA: Butterworth-Heinemann.
- Cassin, B., & Rubin, M.L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.
- Dowaliby, M. (2001). *Practical aspects of ophthalmic optics* (4th ed.). Newton, MA: Butterworth-Heinemann.
- Hecht, E. (2002). *Optics* (4th ed.). Glenview, IL: Addison Wesley.
- Perkins, P., & Stoner, E. (1997). *Optical formulas tutorial*. Newton, MA: Butterworth-Heinemann.
- 20/20 magazine. (n.d.). Retrieved August 18, 2005, from <http://www.2020mag.com/index.asp>

Course Name: Optical Dispensing II

Course Abbreviation: OMT 1223

Classification: Vocational-Technical Core

Description: This course assists the student is developing a mastery of the alignment, adjustment of eyewear and lensometry. It also covers the various lens materials, multifocal styles, and lens tints. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Basic Optical Concepts (OMT 1113) and Optical Dispensing I (OMT 1213)

Competencies and Suggested Objectives	
1. Demonstrate eyewear maintenance.	<ul style="list-style-type: none"> a. Demonstrate adjustment of plastic frame. b. Demonstrate adjustment of metal frame. c. Demonstrate adjustment of a rimless frame for a patient. d. Demonstrate usage of tools in the adjustment process. e. Explain proper eyewear handling techniques.
2. Explain frame repairs and modification.	<ul style="list-style-type: none"> a. Demonstrate repairing the frame hinges. b. Demonstrate repairing the temple. c. Demonstrate repairing bridge repairs.
3. Discuss absorptive lenses.	<ul style="list-style-type: none"> a. Discuss and explain the effects of ultraviolet radiation. b. Discuss and identify effective use of lens coating. c. Discuss and identify regulatory agencies in eyewear. d. Discuss and identify high-powered lens design.
4. Discuss reference point placement.	<ul style="list-style-type: none"> a. Discuss height and explain measuring for multifocal height. b. Identify the major reference point in eyewear. c. Discuss and identify basic progressive addition lens characteristics. d. Demonstrate dispensing progressive addition lens. e. Demonstrate the effects of prism on the thickness and fit of progressive addition lens.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 5 The student understands refractive status.
- CPE 6 The student understands ophthalmic prescriptions.
- CPE 7 The student understands ophthalmic lenses.
- CPE 8 The student understands ophthalmic dispensing.
- CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
- R2 Words in Context (same and opposite meaning)
- R3 Recall Information (details, sequence)
- R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
- R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
- M9 Algebraic Operations
- A8 Estimation (rounding, estimation)
- L1 Usage (pronoun, tense, subject/verb agreement, adjective, adverb)
- L2 Sentence Formation (fragments, run-on, clarity)
- L3 Paragraph Development (topic sentence, supporting sentence, sequence)
- S2 Consonant (variant spelling, silent letter)
- S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

American Academy of Optometry. (n.d.). Retrieved August 18, 2005, from <http://www.aaopt.org/>

American Board of Opticianry. (n.d.). Retrieved August 18, 2005, from <http://www.abo-ncle.org/>

Borish, I., & Brooks, C. (1996). *Systems for ophthalmic dispensing* (2nd ed.). Newton, MA: Butterworth-Heinemann.

Cassin, B., & Rubin, M. L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.

Dowaliby, M. (2001). *Practical aspects of ophthalmic optics* (4th ed.). Newton, MA: Butterworth-Heinemann.

Hecht, E. (2002). *Optics* (4th ed.). Glenview, IL: Addison Wesley.

Perkins, P., & Stoner, E. (1997). *Optical formulas tutorial*. Newton, MA: Butterworth-Heinemann.

20/20 magazine. (n.d.). Retrieved August 18, 2005, from <http://www.2020mag.com/index.asp>

Course Name: Contact Lenses

Course Abbreviation: OMT 1233

Classification: Vocational-Technical Core

Description: This course gives the student in-depth exposure to the technical aspects of a clinical contact lens practice. Lecture and laboratory experiences emphasize lens verification, patient education, and evaluation. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Basic Optical Concepts (OMT 1113), Ophthalmic Pre-Testing (OMT 1413), Ocular Anatomy (OMT 1122)

Competencies and Suggested Objectives	
1. Examine contact lens terminology.	<ul style="list-style-type: none"> a. Examine sagittal height and wetting angle of different types of contact lens. b. Identify characteristics of rigid gas permeable and hydrogel contact lens. c. Examine extended wear, scleral, corneal, and truncated contact lens. d. Differentiate between the types of toric contact lens.
2. Analyze rigid gas permeable lens.	<ul style="list-style-type: none"> a. Describe rigid contact lens. b. Identify rigid contact lens. c. Identify the parameter of rigid gas permeable contact lens. d. Identify the tolerances of rigid gas permeable contact lens. e. Identify components of a radiuscope. f. Identify the equipment needed to perform verification of a rigid gas permeable contact lens. g. Identify the abbreviations for contact lens parameters.
3. Explain the history of contact lenses.	<ul style="list-style-type: none"> a. Identify important dates in contact lens history. b. Identify the methods of manufacturing contact lenses. c. Identify people in contact lens history.
4. Analyze optical principles of rigid contact lenses.	<ul style="list-style-type: none"> a. Calculate optimal spherical contact lens power. b. Convert diopter K into millimeter values. c. Examine the lacrimal lens in regards to contact lenses. d. Identify hydrogel contact lenses FDA classification.
5. Analyze rigid gas permeable contact lenses patient instructions and education.	<ul style="list-style-type: none"> a. Display proper handling and contact lens hygiene. b. Teach rigid gas permeable contact lens removal and insertion. c. Explain rigid gas permeable contact lens solutions. d. Demonstrate rigid gas permeable contact lens cleaning and disinfecting procedures. e. Explain rigid gas permeable contact lens wearing schedule. f. Demonstrate insertion and removal of rigid gas permeable contact lens.
6. Analyze hydrogel contact lens patient instructions and education.	<ul style="list-style-type: none"> a. Demonstrate proper handling of contact lens hygiene.

<ul style="list-style-type: none"> b. Identifies inside-out of hydrogel contact lens. c. Teach hydrogel contact lens insertion and removal. d. Explain hydrogel contact lens solutions. e. Identify hydrogel contact lens wearing schedules. f. Teach hydrogel contact lens cleaning procedure.
<p>7. Explain anatomical and physiological aspects of the eye.</p> <ul style="list-style-type: none"> a. Identify five layers of the cornea. b. Identify physiological aspects of the cornea. c. Describe the tear film layers. d. Describe the effect of the tonicity of the tear film. e. Describe corneal metabolism. f. Define contact lens cornea. g. Examine the anatomy of the limbus and conjunctiva and the anatomy of the eyelids. h. Describe the action of the eyelids on a blink as it relates to contact lens wear.
<p>8. Analyze special lens and special topics.</p> <ul style="list-style-type: none"> a. Summarize monovision. b. Describe rigid gas permeable and hydrogel lens for extended wear. c. Explain keratoconus. d. Explain the two designs for bifocal contact lenses. e. Identify the styles of the simultaneous and alternating rigid gas permeable bifocal contact lens. f. Identify the styles of the simultaneous and alternating hydrogel bifocal contact lens. g. Summarize orthokeratology procedures. h. Explain the insertion of a prosthetic eye. i. Identify pathologic and developmental abnormalities that require contact lens for infants and young children. j. Explain the lens position marks on toric hydrogel contact lens. k. Describe the different types of hydrogel disposable contact lens.
<p>9. Demonstrate contact lens preliminary measurements.</p> <ul style="list-style-type: none"> a. Demonstrate obtaining pre-fitting evaluation. b. Distinguish physical preliminary measurements. c. Explain the three general contact lens fitting procedures. d. Explain the difference between visibility, transparent tints, and opaque tints in contact lens.
<p>10. Demonstrate contact lens fitting procedures.</p> <ul style="list-style-type: none"> a. Compare keratometry contact lens fitting measurements. b. Explain the fluorescein patterns of a steep, flat, and K of a rigid gas permeable contact lens. c. Summarize the three basic contact lens fitting criteria. d. Explain the three general contact lens fitting procedures. e. Explain the three point touch fitting of hydrogel contact lens.
<p>11. Analyze rigid gas permeable lens modification.</p> <ul style="list-style-type: none"> a. Identify contact lens modification equipment. b. Explain the procedure for polishing rigid gas permeable contact lens. c. Explain the procedure for changing the power of rigid gas permeable lens. d. Explain the procedure for modification of rigid gas permeable lens diameter.

e. Explain the procedure for edge contour modification.
f. Differentiate among the types of polish used with contact lens materials.
12. Analyze corneal pathology and cosmetics education of contact lens.
a. Identify vision threatening common pathogens with contact lens wear.
b. Explain application guidelines of cosmetics with contact lens wear.
c. Explain contact lens complications seen on the cornea.
d. Summarize central corneal clouding and the three and nine o'clock staining.
e. Identifies non-vision threatening complications with contact lens wear.
13. Analyze office procedures, contact lens inventory, and insurance.
a. Explain office procedures for scheduling contact lens patients.
b. Differentiate among warranties, service contracts, and insurance.
c. Explain types of recall systems.
d. Explain equipment and inventory maintenance.
e. Explain contact lens ordering and laboratory control system.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 1 The student understands the roles of eyecare specialists and ancillary personnel.
 CPE 2 The student is competent in practice management.
 CPE 3 The student understands the anatomy of the eye.
 CPE 8 The student understands ophthalmic dispensing.
 CPE 9 The student understands contact lenses.
 CPE 10 The student understands common eye disorders.
 CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
 R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
 M9 Algebraic Operations
 L2 Sentence Formation (fragments, run-on, clarity)
 L3 Paragraph Development (topic sentence, supporting sentence, sequence)
 L4 Capitalization (proper noun, titles)
 L5 Punctuation (comma, semicolon)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS2 Financial, Economic, and Business Literacy

- CS4 Information and Communication Skills
CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

American Academy of Optometry. (n.d.). Retrieved August 18, 2005, from <http://www.aaopt.org/>

American Board of Opticianry. (n.d.). Retrieved August 18, 2005, from <http://www.abo-ncle.org/>

Cassin, B., & Rubin, M. L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.

Connelly, S., & Deering, J. (Eds.). (2003). *Advanced contact lens manual – Volume 2*. Reston, VA: Contact Lens Society of America.

Jones, L. & Jones, D. (Eds.). (2000). *Common contact lens complications*. Woburn, MA: Butterworth-Heinemann.

Lowther, G., & Snyder, C. (1992). *Contact lens procedures and techniques* (2nd ed.). Newton, MA: Butterworth-Heinemann.

Soper, J., & Goughary, P. (Eds.). (2003). *Contact lens manual – Volume 1*. Reston, VA: Contact Lens Society of America.

Course Name: Human Relations

Course Abbreviation: OMT 1311

Classification: Vocational-Technical Core

Description: This course introduces the student to their personal and vocational responsibilities as an optometric technician. The development of communication skills one needs as a technician is introduced. The ethical and legal responsibilities of a technician are defined. Time management techniques will be presented. Basic concepts of stress, how it affects behavior, and stress management are discussed. This course also covers writing a job application letter and resume as well as interview techniques. (1 sch: 1 hr. lecture)

Prerequisite: None

Competencies and Suggested Objectives	
1.	Define human relations. <ol style="list-style-type: none"> Explain the importance of human relations to success in business. Discuss the history of the study of human relations. Discuss the challenges of human relations in today's workplace. Explain which traits are most helpful to effective human relations.
2.	Explain the importance of self-esteem. <ol style="list-style-type: none"> Explain the relationship between self-esteem and work performance. Distinguish among different types of self-esteem. Identify the different areas of the self-concept.
3.	Explain what makes up attitudes and how people get attitudes. <ol style="list-style-type: none"> Explain what goes into making positive, healthy attitudes. Discuss the importance of positive attitude to the rest of your life. Discuss the connection between positive attitudes and self-esteem.
4.	Discuss how most people are motivated. <ol style="list-style-type: none"> Recognize the importance of organizational climate and morale. Discuss the difference between extrinsic and intrinsic motivators. Explain the relationship between self-esteem and motivation.
5.	Explain the important role of communication at work. <ol style="list-style-type: none"> Explain the value of listening skills as human relations tools. Examine the role of nonverbal communication. Understand the dynamics of formal and informal channels of communication.
6.	Recognize the stages of change in the process of suffering and repair. <ol style="list-style-type: none"> Explain the effective changes in an organization. Understand the function of organizational development in the formal change process.
7.	Define what is meant by creativity. <ol style="list-style-type: none"> Compare how creativity is different from intelligence. Explain why creativity is important in the workplace. Understand the link between creativity and self-esteem.
8.	Identify major types and sources of conflict. <ol style="list-style-type: none"> Explain the collaborative method of conflict management.

b. Discuss how to negotiate a win-win solution to conflicts.
c. Use the Thomas-Kilman Conflict Model.
9. Explain how stress affects your physical and mental health.
a. Discuss why stress is a problem in the workplace.
b. Explain the association between stress and self-esteem.
10. Discuss whether a business practice is ethical or unethical.
a. Discuss the five principles on which ethical codes are founded.
b. Explain how ethics can be affected by one's workgroup.
c. Explain how social responsibility relates to ethics at work.
d. Discuss the importance of self-esteem and self-discipline in the attainment of goals.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

CPE 2 The student is competent in practice management.

Related Academic Standards

- R2 Words in Context (same and opposite meaning)
- R3 Recall Information (details, sequence)
- R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
- R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
- L2 Sentence Formation (fragments, run-on, clarity)
- L3 Paragraph Development (topic sentence, supporting sentence, sequence)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS1 Global Awareness
- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

SUGGESTED REFERENCES

- Dalton, M., Hoyle, D., & Watts, M. (2006). *Human relations* (3rd ed.). Mason, OH: Thomas South-Western.
- DuBrin, A. (2002). *Human relations for career and personal success* (6th ed.). Upper Saddle River, NJ: Prentice Hall.
- Lamberton, L., & Minor, L. (2002). *Human relations strategies for success*. Woodland Hills, CA: McGraw Hill.

Lussier, R. (2001). *Human relations in organizations: Applications and skill building* (5th ed.). Woodland Hills, CA: McGraw Hill.

Course Name: Patient Relations and Practice Management

Course Abbreviation: OMT 1322

Classification: Vocational-Technical Core

Description: Provides a study of front office management techniques including telephone and appointment book management, filing, recall systems, bookkeeping, and insurance claim processing. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives
1. Identify proper telephone technique. <ol style="list-style-type: none"> a. Demonstrate answering the telephone in a professional manner. b. Manage calls utilizing appropriate screening guidelines. c. Demonstrate placing calls in a professional manner.
2. Manage an effective appointment book. <ol style="list-style-type: none"> a. Demonstrate how to determine if the patient is a new or existing patient to the office. b. Demonstrate scheduling appointments with the time necessary to meet the patient's needs. c. Demonstrate how to gather all the information from the patient necessary for the office to be prepared for the appointment.
3. Identify available filing systems. <ol style="list-style-type: none"> a. Evaluate various filing systems. b. Differentiate among the various filing systems.
4. Process various bookkeeping procedures. <ol style="list-style-type: none"> a. Identify different types of collection strategies. b. Demonstrate the ability to reconcile a bank statement. c. Explain the role of computers when performing bookkeeping tasks. d. Examine the process of how to accurately prepare lab invoices.
5. Process insurance claim forms. <ol style="list-style-type: none"> a. Demonstrate how to accurately complete a variety of insurance forms. b. Determine how to verify patient coverage with the applicable insurance carrier. c. Demonstrate how to use appropriate COT and ICD-9 codes when completing insurance forms.
6. Identify professional office ethics and conduct. <ol style="list-style-type: none"> a. Define professional and ethical behavior. b. Acknowledge that all patient conversations and records are considered confidential. c. Recognize the professional limitations of a technician.
7. Evaluate the necessary components of an office procedures manual. <ol style="list-style-type: none"> a. Identify components of an office procedures manual. b. Evaluate reasons to create an office procedure manual.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 1 The student understands the roles of eyecare specialists and ancillary personnel.
 CPE 2 The student is competent in practice management.
 CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
 R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
 L5 Punctuation (comma, semicolon)
 L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
 S2 Consonant (variant spelling, silent letter)
 S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS1 Global Awareness
 CS2 Financial, Economic, and Business Literacy
 CS4 Information and Communication Skills
 CS5 Thinking and Problem-Solving Skills
 CS6 Interpersonal and Self-Directional Skills

SUGGESTED REFERENCES

- Becklin, K. J. (2003). *Medical office procedures* (5th ed.). Woodland Hills, CA: Glencoe McGraw-Hill.
- Bonewit-West, K. (2003). *Student mastery manual to accompany clinical procedures for medical assistants* (6th ed.). St. Louis, MO: Saunders.
- Flores, E. K. (1999). *Medical office procedures with medical pegboard* (4th ed.). Albany, NY: Delmar/Thomson Learning.
- Keir, L., Wise, B. A., & Krebs, C. (2003). *Medical assisting: Administrative and clinical competencies* (5th ed.). Albany, NY: Delmar.

Course Name: Ophthalmic Pre-Testing

Course Abbreviation: OMT 1413

Classification: Vocational-Technical Core

Description: This course covers the history of optometry as well as relationships between optometry, ophthalmology, opticianry, and various paraprofessional careers in vision care. The course involves the study of and practical experience in patient pre-testing such as case history, visual acuity, color vision, pupil evaluation, and depth perception as well as the specialized testing procedures such as keratometry and blood pressure. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives	
1.	Analyze professional conduct, groom, and dress. <ol style="list-style-type: none"> Demonstrate professional ophthalmic grooming and dress. Demonstrate professional ophthalmic conduct. Explain factors of unprofessional and professional conduct. Identifies factors that influence office professional image.
2.	Perform patient case history. <ol style="list-style-type: none"> Identify components of a case history form. Demonstrate how to obtain a patient case history. Demonstrate how to obtain the chief complaint in case history. Differentiate among the types of questions asked during case history. Identify different type of headaches.
3.	Perform visual acuity tests. <ol style="list-style-type: none"> Summarize Snellen fraction. Analyze factors influencing visual acuity. Demonstrate measuring patient's visual acuity. Examine visual acuity. Differentiate different types of Snellen charts. Explain the procedure for visual acuity measurement. Identify low vision and legal blindness. Differentiate among special instruments for measuring visual acuity.
4.	Perform an entrance test. <ol style="list-style-type: none"> Demonstrate measuring patient's pupillary distance. Demonstrate performing cover test. Explain cover test results using the Maddox Rod. Demonstrate performing pupil evaluation. Demonstrate measuring patient stereopsis. Demonstrate measuring color vision. Distinguish between types of color vision booklets. Demonstrate measuring pupil convergence. Measure pupil accommodation. Perform pupil evaluation.

k. Examine heterotropia and heterophoria.
5. Perform keratometry. <ol style="list-style-type: none"> Identify types of corneal astigmatism. Identify parts of the keratometer. Perform routine keratometer maintenance. Perform measurements of the corneal curvature. Calculate the amount of corneal astigmatism. Estimate the total ocular astigmatism.
6. Perform sphygmomanometry. <ol style="list-style-type: none"> Demonstrate measuring blood pressure. Summarize blood pressure referral criteria. Differentiate among types of blood pressure equipment. Identify components of the sphygmomanometer. Differentiate among methods of blood pressure measurement. Identify causes of hypertension. Identify treatment and drugs for hypertension.
7. Analyze the ophthalmic profession. <ol style="list-style-type: none"> Differentiate among different types of ophthalmic professions. Identify national, state, and local organizations for the ophthalmic professions. Summarize the history of optometry. Summarize roles of optometrists, ophthalmologists, and opticians.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 3 The student understands the anatomy of the eye.
 CPE 5 The student understands refractive status.
 CPE 6 The student understands ophthalmic prescriptions.
 CPE 10 The student understands common eye disorders.
 CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
 R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
 M9 Algebraic Operations
 A1 Numeration (ordering, place value, scientific notation)
 L2 Sentence Formation (fragments, run-on, clarity)
 L3 Paragraph Development (topic sentence, supporting sentence, sequence)
 L4 Capitalization (proper noun, titles)
 L5 Punctuation (comma, semicolon)

- L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
 S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS4 Information and Communication Skills
 CS5 Thinking and Problem-Solving Skills
 CS6 Interpersonal and Self-Directional Skills

SUGGESTED REFERENCES

- Association of Schools and Colleges of Optometry. (n.d.). Retrieved August 18, 2005, from <http://www.opted.org/>
- Carlson, N., & Kurtz, D. (2004). *Clinical procedure for ocular examination*. Boston: McGraw-Hill.
- Cassin, B. (1995). *Fundamentals for ophthalmic technical personnel*. Woburn, MA: ButterWorth Heinemann.
- Cassin, B., & Rubin, M. L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.
- Jameson, M. (2000). *Self study course for optometric assisting* (2nd ed.). Woburn, MA: ButterWorth Heinemann.
- Slatt, B., Stein, H., & Stein, B. (2000). *The ophthalmic assistant: A guide for ophthalmic medical personnel* (7th ed.). St. Louis, MO: Mosby.

Course Name: Ophthalmic Specialty Testing

Course Abbreviation: OMT 1423

Classification: Vocational-Technical Core

Description: This course provides the student experience and knowledge in the areas of special vision care procedures, including subjective refraction, tonometry, visual fields testing, slit lamp, basic concepts or orthoptics, and treatment of eye diseases including the instillation of eye medications and eye patching. Also covered are medications commonly prescribed for systemic conditions. Patient instruction and assistance are emphasized in laboratory sessions. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Basic Optical Concepts (OMT 1113), Ocular Anatomy (OMT 1122), and Ophthalmic Pre-Testing (OMT 1413)

Competencies and Suggested Objectives	
1. Examine subjective refraction.	<ul style="list-style-type: none"> a. Summarize subjective refraction. b. Summarize subjective refraction goals. c. Explain subjective refraction complications. d. Demonstrate calculating spherical equivalent.
2. Discuss non-ocular emergencies.	<ul style="list-style-type: none"> a. Characterize non-ocular emergencies. b. Summarize sources of minor wounds and scrapes in an eyecare setting. c. Analyze five non-ocular emergency situations.
3. Explain first aid treatment for non-ocular emergencies.	<ul style="list-style-type: none"> a. Summarize first aid treatment for open wounds. b. Summarize first aid treatment for fainting. c. Summarize first aid treatment for shock. d. Summarize first aid treatment for seizure.
4. Examine ocular emergencies.	<ul style="list-style-type: none"> a. Analyze common ocular conditions. b. Summarize common bacteria that affect the eye. c. Classify various ocular situations into emergencies, emergent situations, or high priority situations. d. Analyze ocular emergencies. e. Examine emergent ocular situations. f. Analyze high priority situations.
5. Describe slit lamp examination.	<ul style="list-style-type: none"> a. Summarize four slit illumination techniques. b. Examine slit lamp examination procedures. c. Utilize three illumination techniques. d. Distinguish among the three layers of the cornea. e. Examine the anterior segment of the eye including the lids, lashes, conjunctiva, cornea, iris, and sclera.

f. Analyze measurements of intraocular pressure using a tonometer.
6. Describe pharmaceutical agents. <ol style="list-style-type: none"> Summarize ocular diagnostic pharmaceutical agents. Summarize ocular therapeutic pharmaceutical agents. Analyze ocular medication side effects. Summarize systemic pharmaceuticals. Categorize various systemic pharmaceuticals.
7. Apply eye medication and a pressure patch. <ol style="list-style-type: none"> Apply appropriate ocular solutions and suspensions. Apply ocular ointments. Apply an ocular pressure patch.
8. Discuss binocular vision. <ol style="list-style-type: none"> Differentiate between motor and sensory fusion. Analyze amblyopia. Differentiate between heterotopias and heterophorias. Examine binocularity.
9. Deliver vision therapy procedures. <ol style="list-style-type: none"> Perform the aperture rule test on both eyes. Estimate the amount of heterotropia and phoria present. Perform the hectogram test on both eyes. Perform the vergences test on both eyes.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 1 The student understands the roles of eyecare specialists and ancillary personnel.
 CPE 2 The student is competent in practice management.
 CPE 6 The student understands ophthalmic prescriptions.
 CPE 7 The student understands ophthalmic lenses.
 CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
 R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
 M9 Algebraic Operations
 L2 Sentence Formation (fragments, run-on, clarity)
 L3 Paragraph Development (topic sentence, supporting sentence, sequence)
 L4 Capitalization (proper noun, titles)
 L5 Punctuation (comma, semicolon)
 L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)

S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

CS4 Information and Communication Skills

CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

Carlson, N., & Kurtz, D. (2004). *Clinical procedure for ocular examination*. Boston: McGraw-Hill.

Cassin, B. (1995). *Fundamentals for ophthalmic technical personnel*. St. Louis, MO: Saunders.

Cassin, B., & Rubin, M.L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.

Jameson, M. (2000). *Self study course for optometric assisting* (2nd ed.). Woburn, MA: Butterworth Heinemann.

Mississippi Optometric Association. (n.d.). Retrieved August 18, 2005, from <http://www.msptom.org/index.html>

Optometry today. (n.d.). Retrieved August 18, 2005, from <http://www.optometrytoday.com/>

Schwartz., S. (2003). *Visual perception* (3rd ed.). Boston: McGraw Hill.

Slatt, B., Stein, H., & Stein, B. (2000). *The ophthalmic assistant: A guide for ophthalmic medical personnel* (7th ed.). St. Louis, MO: Mosby.

Course Name: Pre-Clinical

Course Abbreviation: OMT 1512

Classification: Vocational-Technical Core

Description: This course prepares students for clinical affiliation by having them complete vision screening on patients from the college. Class discussions are held analyzing the results of the screening as well as the students' performance. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisites: Ophthalmic Pre-Testing (OMT 1413) and Basic Optical Concepts (OMT 1113)

Corequisite: Ophthalmic Specialty Testing (OMT 1423)

Competencies and Suggested Objectives	
1.	Describe receptionist duties. <ol style="list-style-type: none"> Demonstrate appropriately greeting patients and answering the telephone in a professional manner. Manage calls utilizing appropriate screening guidelines. Adhere to ethical conduct of a technician.
2.	Demonstrate how to perform a complete vision screening. <ol style="list-style-type: none"> Demonstrate confirming appointments. Demonstrate how to greet patients. Demonstrate proper hygiene and safety procedures. Perform case history, visual acuity, blood pressure measurement, and auto-refraction. Perform entrance tests, including stereopsis, color vision, pupil testing, cover test, and pupil distance. Demonstrate performing tonometry. Demonstrate performing keratometry. Demonstrate neutralizing patient's current prescription. Describe results and relevance of screening with patient. Summarize results from vision screening.
3.	Examine objective refraction. <ol style="list-style-type: none"> Summarize objective refraction. Summarize objective refraction goals. Explain objective refraction complications.
4.	Discuss binocular vision. <ol style="list-style-type: none"> Differentiate between motor and sensory fusion. Analyze amblyopia. Differentiate between heterotopias and heterophorias. Examine binocularity.
5.	Perform patient case history. <ol style="list-style-type: none"> Identify components of a case history form. Demonstrate how to obtain a patient case history. Demonstrate how to obtain the chief complaint in case history. Differentiate among the types of questions asked during case history.

- e. Identify different types of headaches.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 3 The student understands the anatomy of the eye.
 CPE 10 The student understands common eye disorders.
 CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
 R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
 M9 Algebraic Operations
 L1 Usage (pronoun, tense, subject/verb agreement, adjective, adverb)
 L2 Sentence Formation (fragments, run-on, clarity)
 L3 Paragraph Development (topic sentence, supporting sentence, sequence)
 L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
 S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS1 Global Awareness
 CS4 Information and Communication Skills
 CS5 Thinking and Problem-Solving Skills
 CS6 Interpersonal and Self-Directional Skills

SUGGESTED REFERENCES

- Carlson, N., & Kurtz, D. (2004). *Clinical procedure for ocular examination*. Boston: McGraw-Hill.
- Cassin, B. (1995). *Fundamentals for ophthalmic technical personnel*. St. Louis, MO: Saunders.
- Cassin, B., & Rubin, M.L. (Eds.). (2001). *Dictionary of eye terminology* (4th ed.). Gainesville, FL: Triad.
- Jameson, M. (2000). *Self study course for optometric assisting* (2nd ed.). Woburn, MA: Butterworth Heinemann.

Mississippi Optometric Association. (n.d.). Retrieved August 18, 2005, from <http://www.msptom.org/index.html>

Schwartz., S. (2003). *Visual perception* (3rd ed.). Boston: McGraw Hill.

Slatt, B., Stein, H., & Stein, B. (2000). *The ophthalmic assistant: A guide for ophthalmic medical personnel* (7th ed.). St. Louis, MO: Mosby.

Course Name: Clinical Experience

Course Abbreviation: OMT 1526

Classification: Vocational-Technical Core

Description: Students participate in assigned clinical experience in an optometric or clinical setting. The student is expected to achieve specific educational objectives determined for this experience. (6 sch: 1 hr. lecture, 15 hr. clinical)

Prerequisite: Successful completion of all first and second semester coursework

Competencies and Suggested Objectives	
1.	Adhere to clinical rotation objectives and student expectations. <ol style="list-style-type: none"> Complete the rotational outcomes that are initiated by the office liaison. Examine rotational outcomes initiated by instructor. Complete a daily report.
2.	Employ professional communications. <ol style="list-style-type: none"> Respond to and initiate written communications. Recognize and respond to verbal communications. Recognize and respond to nonverbal communications. Demonstrate telephone techniques.
3.	Practice legal concepts. <ol style="list-style-type: none"> Identify and respond to issues of confidentiality. Perform within legal and ethical boundaries. Establish and maintain the medical record. Document appropriately. Demonstrate knowledge of federal and state health care legislation and regulations.
4.	Demonstrate patient instruction. <ol style="list-style-type: none"> Explain general office policies. Instruct individuals according to their needs. Provide instruction for health maintenance and disease prevention.
5.	Perform contact lens patient education. <ol style="list-style-type: none"> Display self-confidence skills to the patient. Instruct the patient in methods of insertion and removal of contact lenses. Display proper hygiene. Demonstrate the proper care of lenses including solutions. Perform insertion and removal of contact lens on the patient.
6.	Maintain operational functions. <ol style="list-style-type: none"> Perform an inventory of supplies and equipment. Perform routine maintenance of administrative and clinical equipment. Utilize computer software to maintain office systems. Use methods of quality control.
7.	Perform specialty testing skills. <ol style="list-style-type: none"> Demonstrate knowledge of the refractor. Record findings properly.

<ul style="list-style-type: none"> c. Demonstrate knowledge of the slit lamp. d. Identify ocular medications and side effects of the most common systemic medications.
<ul style="list-style-type: none"> 8. Perform front office and clerical skills <ul style="list-style-type: none"> a. Assist with processing insurance claim forms. b. Assist with bookkeeping procedures. c. Perform telephone management. d. Perform appointment book management.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE 1 The student understands the roles of eyecare specialists and ancillary personnel.
- CPE 2 The student is competent in practice management.
- CPE 3 The student understands the anatomy of the eye.
- CPE 8 The student understands ophthalmic dispensing.
- CPE 9 The student understands contact lenses.
- CPE 10 The student understands common eye disorders.
- CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
- R2 Words in Context (same and opposite meaning)
- R3 Recall Information (details, sequence)
- R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
- R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
- M9 Algebraic Operations
- A4 Pre-Algebra and Algebra (equations, inequality)
- L1 Usage (pronoun, tense, subject/verb agreement, adjective, adverb)
- L2 Sentence Formation (fragments, run-on, clarity)
- L3 Paragraph Development (topic sentence, supporting sentence, sequence)
- L4 Capitalization (proper noun, titles)
- L5 Punctuation (comma, semicolon)
- L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
- S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS1 Global Awareness
- CS2 Financial, Economic, and Business Literacy
- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills

CS6 Interpersonal and Self-Directional Skills

SUGGESTED REFERENCES

Association of Schools and Colleges of Optometry. (n.d.). Retrieved August 18, 2005, from <http://www.opted.org/>

Bonewit-West, K. (2003). *Student mastery manual to accompany clinical procedures for medical assistants* (6th ed.). St. Louis, MO: Saunders.

Bonewit-West, K. (2004). *Clinical procedures for medical assistants* (6th ed.). St. Louis, MO: Saunders.

Hemby, M. P. (2001). *Outline review for the medical assistant* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Mississippi Optometric Association. (n.d.). Retrieved August 18, 2005, from <http://www.msptom.org/index.html>

Palko, T., & Palko, H. (2001). *Q&A review for the medical assistant* (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Course Name: Body Structure and Function

Course Abbreviation: OMT 2113

Classification: Vocational-Technical Elective

Description: This course is a study of body structure and function, which is essential to safe and effective optometric care. Each system of the body is covered with application to the optical system. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives	
1.	Utilize terms common to the medical and paramedical professions. <ol style="list-style-type: none"> Define root words commonly used in medical terminology. Describe the use of prefixes and suffixes in medical terminology. Utilize appropriate medical terminology in medical and paramedical situations.
2.	Describe physiological regulation, integration, control, and maintenance of the human body. <ol style="list-style-type: none"> Describe fields of anatomy, including microscopic and clinical anatomy. Distinguish among the components of a cell. Diagram the components of the cell life cycle. Outline the stages of embryonic development. Identify the various types of tissues.
3.	Relate basic chemical reactions to fluid, electrolyte, and acid and base activities occurring in the body. <ol style="list-style-type: none"> Describe the basic chemical reactions in the body. Examine fluid and electrolyte balance in the body. Differentiate between the acid and base reactions in the body.
4.	Distinguish between normal and abnormal conditions of the body systems. <ol style="list-style-type: none"> Distinguish between normal and abnormal conditions of the integumentary system. Distinguish between normal and abnormal conditions of the skeletal system. Distinguish between normal and abnormal conditions of the muscular system. Distinguish between normal and abnormal conditions of the nervous system. Distinguish between normal and abnormal conditions of the cardiovascular system. Distinguish between normal and abnormal conditions of the lymphatic and immune systems. Distinguish between normal and abnormal conditions of the respiratory system. Distinguish between normal and abnormal conditions of the digestive system. Distinguish between normal and abnormal conditions of the urinary system. Distinguish between normal and abnormal conditions of the reproductive system. Distinguish between normal and abnormal conditions of the endocrine system.
5.	Select appropriate methods for the covering, support, and movement of the body. <ol style="list-style-type: none"> Describe appropriate methods for covering, supporting, and moving the body. Recommend appropriate methods for covering, supporting, and moving the body for given medical situations.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

- CPE3 The student understands the anatomy of the eye.
 CPE10 The student understands common eye disorders.
 CPE11 The student applies terminology.

Related Academic Standards

- R2 Words in Context (same and opposite meaning)
 R3 Recall Information (details, sequence)
 R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
 R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
 L2 Sentence Formation (fragments, run-on, clarity)
 L3 Paragraph Development (topic sentence, supporting sentence, sequence)
 L4 Capitalization (proper noun, titles)
 L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
 S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS4 Information and Communication Skills
 CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

The anatomy project: The eye [Computer software]. Calhoun, KY: NIMCO.

Cahill, D. R. (1997). *Lachman's case studies in anatomy* (4th ed.). New York: Oxford University Press.

The eye: Vision and perception [Video]. (1997). New York: Insight Media.

Fong, E., & Scott, A. (2004). *Body structure and functions* (10th ed.). Clifton Park, NY: Thomas Delmar Learning.

Human cardiovascular system: The blood vessels [Video]. (1995). San Francisco, CA: Pearson Benjamin Cummings.

Lafferty, M., & Panella, S. (2004). A.D.A.M. interactive anatomy (Version 3.0) [Computer software]. San Francisco: Pearson Benjamin Cummings.

Lafferty, M., & Panella, S. (2004). *A.D.A.M. interactive anatomy student lab guide* (2nd ed.). San Francisco: Pearson Benjamin Cummings.

Mader, S. (2004). *Human biology* (8th ed.). New York: McGraw Hill.

Patton, K., & Thibodeau, K. (2004). *Structure and function of the body* (12th ed.). St. Louis, MO: Mosby.

Course Name: Ocular Pharmacy

Course Abbreviation: OMT 2223

Classification: Vocational-Technical Elective

Description: This course covers the principles and actions of diagnostic and therapeutic pharmacological agents. This course will also cover the basic knowledge and skills to safely use diagnostic and therapeutic agents within a defined scope of practice. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives	
1. Calculate drug dosages.	<ul style="list-style-type: none"> a. Convert household measures to the apothecary and metric systems. b. Calculate dosages based on body weight and body surface area. c. Solve clinical calculations involved in the administration of medication with 100% accuracy. d. Use knowledge of appropriate methods of rounding doses when administering medications.
2. Identify the major drug classifications.	<ul style="list-style-type: none"> a. List the major drug classifications. b. Name at least five drugs in each drug classification. c. Identify the action, indication, usual dosage, and adverse reactions of commonly used drugs.
3. Identify the five controlled substances schedules.	<ul style="list-style-type: none"> a. Define the five controlled substances schedules and five examples of drugs listed in each. b. Explain storage, inventory, and record keeping for controlled substances. c. Explain the significance of the Controlled Substances Act of 1970. d. Maintain and dispose of controlled substances in compliance with government regulations.
4. State principles of medication administration.	<ul style="list-style-type: none"> a. State the "Five Rights" of proper drug administration. b. State the guidelines for safe drug administration. c. Identify the various methods and routes of administration of medication.
5. Discuss medication orders from the physician.	<ul style="list-style-type: none"> a. Identify and define the standard abbreviations and symbols used in prescribing and administering medications. b. List the nine parts of a prescription. c. Discuss the different types of medication orders.
6. State the routes of medication administration and advantages and disadvantages of each.	<ul style="list-style-type: none"> a. List the five routes of medication administration. b. State the advantages and disadvantages of each medication route.

7. Identify special consideration related to administering medication to infants and children.
 - a. Calculate drug dosages for children.
 - b. Discuss preferred routes of administration of medication.
 - c. State preferred sites of intramuscular (IM) injections in children.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

CPE 11 The student applies terminology.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
- R2 Words in Context (same and opposite meaning)
- R3 Recall Information (details, sequence)
- R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
- R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
- M9 Algebraic Operations
- A1 Numeration (ordering, place value, scientific notation)
- A8 Estimation (rounding, estimation)
- L1 Usage (pronoun, tense, subject/verb agreement, adjective, adverb)
- L2 Sentence Formation (fragments, run-on, clarity)
- L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
- S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

Association of Schools and Colleges of Optometry. (n.d.). Retrieved August 18, 2005, from <http://www.opted.org/>

Deglin, J. H., & Vallerand, A. H. (2003). *Davis drug guide for nurses* (8th ed.). Philadelphia: F. A. Davis.

Deglin, J. H., & Vallerand, A. H. (2004). *MedNotes: Nurse's pocket pharmacology guide*. Philadelphia: F. A. Davis.

Lane, K., & Reed, L. (1999). *Medications: A guide for the health professions* (2nd ed.). Salem, MA: F. A. Davis.

Course Name: Billing & Coding

Course Abbreviation: OMT 2613

Classification: Vocational-Technical Core

Description: This course will present students with the legal aspects and terms associated with vision insurance, medical savings programs, networks, and billing. This course will also provide valuable advice, networking, resources, and strategies in optical billing and coding. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None

Competencies and Suggested Objectives	
1.	Perform procedural and diagnostic coding. <ol style="list-style-type: none"> Locate the correct CPT and ICD-9 code. Identify the importance and use of modifiers in coding. State the meaning of basic abbreviations and symbols in the code books.
2.	Describe the life cycle of a health insurance claim form. <ol style="list-style-type: none"> Abstract from the patient record the information for completing an insurance claim form. Process the Universal Health Insurance Claim Form. Record on the patient's ledger card after submitting a claim. Formulate an insurance claims register or log. Monitor third party reimbursement. Utilize effective oral or written communication with insurance companies regarding erroneous payments. Trace a delinquent insurance claim. Describe electronic claims transmission.
3.	Analyze and apply current third party guidelines. <ol style="list-style-type: none"> Define the major classes of health insurance contracts. Give examples of federal, state, and private insurance plans. Define common insurance, medical, and diagnostic terms. Differentiate among usual, customary, and reasonable fees. Cite the essential features of the Blue Plans, Medicaid, Medicare, Worker's Compensation, Disability, and TRICARE.
4.	Recognize and adhere to managed care policies and procedures. <ol style="list-style-type: none"> Define a Prepaid Health Plan (PHP). Identify the types of prepaid health plans. Define independent practice associations (IPA). Define preferred provider organizations. Identify the purpose of diagnosis related groups. Define terminology related to diagnosis related groups. Describe how payment is made based on diagnosis related groups. Discuss professional review organizations (PRO's). Discuss managed care referrals and precertifications.

STANDARDS

Standards Based on the Certified Paraoptometric Examination Guide

CPE 2 The student is competent in practice management.

Related Academic Standards

- R1 Interpret Graphic Information (forms, maps, reference sources)
- R2 Words in Context (same and opposite meaning)
- R3 Recall Information (details, sequence)
- R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
- R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)
- M9 Algebraic Operations
- L3 Paragraph Development (topic sentence, supporting sentence, sequence)
- L4 Capitalization (proper noun, titles)
- L5 Punctuation (comma, semicolon)
- L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)
- S3 Structural Unit (root, suffix)

Copyright © 1994 by CTB/McGraw-Hill LLC

21st Century Skills

- CS2 Financial, Economic, and Business Literacy
- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills

SUGGESTED REFERENCES

American Medical Association. (2004). *CPT 2005: Current procedural terminology* (Professional ed.). Chicago: Author.

American Medical Association. (2004). *Physician ICD-9-CM 2004: International classification of diseases, clinical modification*. Chicago: American Medical Association.

Fordney, M. T. (2004). *Insurance handbook for the medical office: Text and workbook package* (8th ed.). St. Louis, MO: Saunders.

Mississippi Optometric Association. (n.d.). Retrieved August 18, 2005, from <http://www.msptom.org/index.html>

Rowell, J. C., Green, M. A., & Burke, R. M. (2001). *Workbook to accompany understanding health insurance: A guide to professional billing* (6th ed.). Albany, NY: Thomson/Delmar Learning.

Rowell, J. A., & Green, M. (2004). *Understanding medical insurance: A guide to professional billing* (7th ed.). Albany, NY: Thomson/Delmar Learning.

Recommended Tools and Equipment

CAPITALIZED ITEMS

1. 6-Pot lens dye unit (1 per program)
2. Auto-refractor/keratometer (1 per program)
3. Computer (1 per student)
4. Corneal reflex pupilometers (2 per program)
5. Data projector (1 per program)
6. Electric instrument table (5 per program)
7. Eye model (1 per program)
8. Fitting tables (2 per program)
9. Frame display, hex (2 per program)
10. Frames, glasses, assorted (50 pairs per program)
11. Lensometer (10 per program)
12. Manual keratometer (1 per program)
13. Monitor, TV, 31" color (1 per program)
14. Non-contact tonometer (1 per program)
15. Observation tube (2 per program)
16. Ophthalmic chair (1 per program)
17. Ophthalmic training software (JCAHPO) (1 set per student)
18. Ophthalmic training videos (Academy of Ophthalmology) (1 per program)
19. Printer, laser (1 per 2 computers)
20. Radiuscope (1 per program)
21. Radiuscopes (2 per program)
22. Slit-lamp (1 per program)
23. VCR/DVD player (1 per program)
24. Vigor work station (1 per program)
25. Vision tester (1 per program)

NON-CAPITALIZED ITEMS

1. Allen pre-school testing cards (1 per program)
2. Amsler chart (1 per student)
3. Amsler chart Book (2 per program)
4. Axis pliers (4 per program)
5. Chair, teacher (1 per program)
6. Chairs, patient (1 per program)
7. Computer chair (1 per program)
8. Contact lens accessories (1 set per 2 students)
9. Desk, student (20 per program)
10. Desk, teacher (1 per program)
11. Illiterate box cube (1 per program)
12. Farnsworth dichotomous D-15 color test (1 per program)
13. File cabinets (2 per program)
14. Frame warmers (glass beads) (2 per program)

15. Frame warmers, hot air (2 per program)
16. Gradient machine for dye units (2 per program)
17. Hand tools, assorted set (12 sets per program)
18. Ishahara color blindness Chart (1 per program)
19. Lens calipers (4 per program)
20. Lens holders for dye unit (10 per program)
21. Maddox rod (5 per program)
22. Near point reading cards (20 per program)
23. Occluder (10 per program)
24. Office desk and chair set (1 set per program)
25. Pen lights (20 per program)
26. Pseudo-isochromatic color test (1 per program)
27. Psychoschematic charts (Color Blindness) (1 per program)
28. Pupil cam (1 per program)
29. Random dot "E" screening test (1 per program)
30. Reception chairs (5 per program)
31. Ruler, in millimeter graduations (20 per program)
32. Screwdriver, optical (20 per program)
33. Seg height gauge (10 per program)
34. Snellen charts (visual acuity) (5 per program)
35. Sphygmomanometer, free standing (aneroid or mercury) (1 per student)
36. Sterile sponges/sterile gauze pads (1 per student)
37. Stero fly kit (1 per program)
38. Stethoscope (1 per 2 students)
39. Stools, laboratory (12 per program)
40. Stools, optician (10 per program)
41. Surgical gowns, caps and mask (1 per student)
42. Tangent screen (1 per program)
43. White plastic P.D. ruler (20 per program)

ASSESSMENT

BLUEPRINT

This program is assessed using the MS-CPAS. The following blueprint summary contains the competencies that are measured when assessing this program. Competencies are grouped into *clusters* and a weight is given to each cluster to determine the number of items needed from each cluster. The numbers of C1s and C2s (item difficulty levels) are also indicated on the blueprint.

Title of Program & Code: PS Optometric Assisting

Program Level: Postsecondary

Cluster/Competency	Level 1 (C1)	Level 2 (C2)	TOTAL	%
	Number	Number		
Cluster 1: Concepts Basic Optical Concepts (OMT 1113) Ocular Anatomy (OMT 1122) Body Structure (OMT 1132)	42	14	56	28
Cluster 2: Dispensing Optical Dispensing I (OMT 1213) Optical Dispensing II (OMT 1223) Contact Lenses (OMT 1233)	54	18	72	36
Cluster 3: Relations Human Relations (OMT 1311) Patient Relations and Practice Management (OMT 1322)	18	6	24	12
Cluster 4: Testing Ophthalmic Pre-testing (OMT 1413) Ophthalmic Specialty Testing (OMT 1423)	36	12	48	24
Cluster 5:				
Total Questions:	150	50	200	100

Note: Pre-Clinical (OMT 1512) and Clinical Experience (OMT 1526) will not be tested.

Baseline Competencies

The following competencies and suggested objectives are taken from the publication *Mississippi Curriculum Framework for Allied Health*. These competencies and objectives represent the baseline which was used to develop the community/junior college Optometric Assisting Technology courses. Students enrolled in postsecondary courses should either (1) have documented mastery of these competencies, or (2) be provided with these competencies before studying the advanced competencies in the Optometric Assisting Technology program.

Baseline competencies may be integrated into existing courses in the curriculum or taught as special “Introduction” courses. The “Introduction” courses may be taught for up to six semester hours of institutional credit and may be divided into two courses. If the Baseline Competencies are to be taught as “Introduction” courses, each course should be at least 3 credit hours. The following course number(s) and description should be used:

Course Name(s): Introduction to Optometric Assisting Technology, Introduction to Optometric Assisting Technology I, or Introduction to Optometric Assisting Technology II

Course Abbreviation(s): OMT 100(3-6), OMT 1013, OMT 1023

Classification: Vocational-Technical Core

Description: These courses contain the baseline competencies and suggested objectives from the high school curriculum which directly relate to the community college program. The courses are designed for students entering the community college who have had no previous training or documented experience in the field. (3-6 semester hours based upon existing skills for each student, may be divided into 2 courses for a maximum total of 6 hours of institutional credit.)

Competencies and Suggested Objectives:

1. Review material related to course and professional organizations.
 - a. Identify student and course expectations.
 - b. Identify allied health professional student organizations and their roles in individual career development.
 - c. Compare the timeline of medical history.
2. Recognize safety procedures and policies.
 - a. Describe basic safety procedures.
 - b. Describe accident prevention methods and disaster plans of the local school district.
 - c. Discuss a safe and clean environment.
 - d. Follow state and facility guidelines, including dress requirements for clinical-type experiences.
3. Explain effective communication skills.
 - a. Identify the main factors required for the communication process.
 - b. Identify factors which can interfere with the communication process.
 - c. Demonstrate effective teamwork skills.
 - d. Explore professional literature and medical references.

4. Introduce careers in the health care industry.
 - a. Introduce careers in health care information and administration.
 - b. Introduce careers in direct health care.
 - c. Introduce careers in medical therapy.
 - d. Introduce careers in diagnostic health care.
5. Discuss education and credentials required for health care careers.
 - a. Discuss educational levels for health careers, including certification, associate degree, bachelor's degree, master's degree, and doctoral degree.
 - b. Compare the credentials needed for careers in health care, including certification, registration, and licensure.
6. Discuss professional ethics.
 - a. Explain professional ethics.
 - b. Discuss confidentiality.
 - c. Discuss HIPAA, the Health Insurance Portability and Accountability Act of 1996.
7. Discuss legal responsibility and client's rights.
 - a. Explain torts and legal responsibility.
 - b. Identify ways to promote clients' rights and privacy.
 - c. Discuss the requirement for health care workers to undergo a background check.
8. Explain standard precautions.
 - a. Explain importance of standard precautions in life practices and health care.
 - b. Explain the state and federal government's role in standard precautions.
 - c. Relate standard precautions to the transmission of infectious diseases including HIV, AIDS, HBV, and TB.
9. Perform basic emergency procedures.
 - a. Explain first aid procedures for sudden illness.
 - b. Explain first aid procedures for accidents.
10. Explain medical terminology.
 - a. Spell designated medical terms correctly.
 - b. Demonstrate the use of medical references to spell medical terms correctly.
 - c. Define and divide medical terms into root words, prefixes, and suffixes.
11. Recognize and use medical terminology.
 - a. Interpret the common medical abbreviations and symbols including meanings and uses.
 - b. Demonstrate the use of medical terms and abbreviations in reading, speaking, interpreting, and writing simulated medical records.
12. Review the relationship among cells, tissues, organs, and systems.
 - a. Review the main parts of a cell.
 - b. Review the functions of the main parts of a cell.
 - c. Compare types of tissues and their relationships to body organs and systems.
13. Identify the body planes, directions, and cavities.
 - a. Identify the names of the planes and the directional terms.
 - b. Locate the body cavities.
 - c. Identify the body organs in each cavity.
 - d. Describe the abdominal regions.
14. Interpret the basic structures and functions of the integumentary system.
 - a. Identify the parts of the integumentary system.
 - b. Explain the functions of the integumentary system.

- c. Discuss related diseases and disorders.
15. Perform the patient care procedures related to the integumentary system.
 - a. Demonstrate patient hygiene.
 - b. Perform bed-making skills.
 - c. Perform patient positioning to prevent pressure areas.
 16. Interpret the basic structures and functions of the muscular system.
 - a. Identify major muscles.
 - b. Explain the function of the muscles.
 - c. Discuss related diseases and disorders.
 - d. Demonstrate active range of motion exercises and indications for use.
 17. Interpret the basic structure and function of the skeletal system.
 - a. Identify the bones of the body.
 - b. Explain functions of the skeletal system.
 - c. Discuss related diseases and disorders.
 - d. Demonstrate procedures for patient transfer using a stretcher, wheelchair, or a pneumatic lift.
 18. Interpret the basic structures and functions of the circulatory system.
 - a. Identify components of blood and their function.
 - b. Identify the types of blood vessels and the action of each.
 - c. Identify the anatomy of the heart.
 - d. Explain the flow of blood through the heart.
 - e. Discuss related diseases and disorders.
 19. Measure vital signs.
 - a. Measure oral temperature.
 - b. Explain procedures for measuring axillary, rectal, and tympanic temperatures.
 - c. Identify the body's pulse points.
 - d. Demonstrate radial pulse measurement.
 - e. Measure blood pressure.
 20. Interpret the basic structures of the respiratory system.
 - a. Identify the structures of the respiratory system.
 - b. Discuss related diseases and disorders.
 - c. Auscultate lung sounds.
 21. Interpret the basic functions of the respiratory system.
 - a. Discuss how gas exchange occurs in the lungs.
 - b. Recognize factors that cause respiratory disorders.
 - c. Count respirations.
 22. Interpret the basic structures and functions of the digestive system.
 - a. Identify organs of the digestive system.
 - b. Discuss the functions of organs of the digestive system.
 - c. Discuss related diseases and disorders.
 23. Interpret the basic structures and functions of the urinary system.
 - a. Identify structures of the urinary system.
 - b. State the functions of each structure of the urinary system.
 - c. Discuss related diseases and disorders.
 24. Interpret basic structure and functions of the sensory systems.
 - a. Label the basic structures of the sensory organs.

- b. Identify the functions of the sensory organs.
- 25. Interpret the basic structures of the endocrine system.
 - a. Define key terms related to the endocrine system.
 - b. Label structures of the endocrine system.
- 26. Interpret the basic functions of the endocrine system.
 - a. Analyze the actions of hormones on various body functions.
 - b. Recognize diseases and disorders of the endocrine system.
- 27. Discuss stages of growth and development.
 - a. Review the reproductive system.
 - b. Identify physical, mental, emotional, and social development characteristics of each of Erikson's stages of development from infancy through late adulthood.
 - c. Identify Maslow's Hierarchy of Human Needs.
 - d. Discuss cultural practices that affect needs.
- 28. Explain concepts related to death and dying.
 - a. Describe the five stages of grief.
 - b. Discuss hospice care.
 - c. Define living will, advance directives, and organ donation.
- 29. Explain procedures related to pharmacology.
 - a. Review the endocrine system.
 - b. Contrast common drug classifications with actions using the PDR and nursing drug reference.
 - c. Determine the components of an authorized drug prescription.
 - d. Calculate medication dosages.
 - e. Review medical abbreviations.
- 30. Explain procedures related to cardiopulmonary.
 - a. Review the respiratory and cardiovascular systems.
 - b. Identify cardiopulmonary tests and treatments.
- 31. Explain procedures related to health care administration.
 - a. File records using alphabetical and numerical systems.
 - b. Utilize correct telephone techniques when using business telephone.
 - c. Utilize dictating equipment and transcribe documentation.
 - d. Complete forms used as part of the medical record including those used in hospitals or physicians' offices.
- 32. Demonstrate job seeking skills.
 - a. Prepare a resume containing essential information utilizing word processing software.
 - b. Complete a job application form on paper or online.
 - c. Discuss procedures for job interviews.
 - d. Demonstrate the role of an applicant in a job interview.
 - e. Describe job interview etiquette.
- 33. Explain job keeping skills.
 - a. Discuss positive relations with clients and peers.
 - b. Write a letter of resignation.

Appendix A: Standards Based on the Certified Paraoptometric Examination Guide¹

- CPE 1 The student understands the roles of eyecare specialists and ancillary personnel.
- CPE 2 The student is competent in practice management.
- CPE 3 The student understands the anatomy of the eye.
- CPE 4 The student is competent in performing an eye examination.
- CPE 5 The student understands refractive status.
- CPE 6 The student understands ophthalmic prescriptions.
- CPE 7 The student understands ophthalmic lenses.
- CPE 8 The student understands ophthalmic dispensing.
- CPE 9 The student understands contact lenses.
- CPE 10 The student understands common eye disorders.
- CPE 11 The student applies terminology.

¹ American Optometric Association Commission on Paraoptometric Certification. (2003). *Policy and procedures manual*. St. Louis, MO: Author.

Appendix B: Related Academic Standards²

Reading

- R1 Interpret Graphic Information (forms, maps, reference sources)
- R2 Words in Context (same and opposite meaning)
- R3 Recall Information (details, sequence)
- R4 Construct Meaning (main idea, summary/paraphrase, compare/contrast, cause/effect)
- R5 Evaluate/Extend Meaning (fact/opinion, predict outcomes, point of view)

Mathematics Computation

- M1 Addition of Whole Numbers (no regrouping, regrouping)
- M2 Subtraction of Whole Numbers (no regrouping, regrouping)
- M3 Multiplication of Whole Numbers (no regrouping, regrouping)
- M4 Division of Whole Numbers (no remainder, remainder)
- M5 Decimals (addition, subtraction, multiplication, division)
- M6 Fractions (addition, subtraction, multiplication, division)
- M7 Integers (addition, subtraction, multiplication, division)
- M8 Percents
- M9 Algebraic Operations

Applied Mathematics

- A1 Numeration (ordering, place value, scientific notation)
- A2 Number Theory (ratio, proportion)
- A3 Data Interpretation (graph, table, chart, diagram)
- A4 Pre-Algebra and Algebra (equations, inequality)
- A5 Measurement (money, time, temperature, length, area, volume)
- A6 Geometry (angles, Pythagorean theory)
- A7 Computation in Context (whole numbers, decimals, fractions, algebraic operations)
- A8 Estimation (rounding, estimation)

Language

- L1 Usage (pronoun, tense, subject/verb agreement, adjective, adverb)
- L2 Sentence Formation (fragments, run-on, clarity)
- L3 Paragraph Development (topic sentence, supporting sentence, sequence)
- L4 Capitalization (proper noun, titles)
- L5 Punctuation (comma, semicolon)
- L6 Writing Conventions (quotation marks, apostrophe, parts of a letter)

Spelling

- S1 Vowel (short, long)
- S2 Consonant (variant spelling, silent letter)
- S3 Structural Unit (root, suffix)

² CTB/McGraw-Hill LLC. (1994). *Tests of adult basic education, Forms 7 and 8*. Monterey, CA: Author. Reproduced with permission of CTB/McGraw-Hill LLC. TABE is a registered trademark of The McGraw-Hill Companies, Inc. Copyright © 1994 by CTB/McGraw-Hill LLC. Reproduction of this material is permitted for educational purposes only.

Appendix C: 21st Century Skills³

CS1 Global Awareness

- Using 21st century skills to understand and address global issues
- Learning from and working collaboratively with individuals representing diverse cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts
- Promoting the study of non-English language as a tool for understanding other nations and cultures

CS2 Financial, Economic, and Business Literacy

- Knowing how to make appropriate personal economic choices
- Understanding the role of the economy and the role of business in the economy
- Applying appropriate 21st century skills to function as a productive contributor within an organizational setting
- Integrating oneself within and adapting continually to our nation's evolving economic and business environment

CS3 Civic Literacy

- Being an informed citizen to participate effectively in government
- Exercising the rights and obligations of citizenship at local, state, national, and global levels
- Understanding the local and global implications of civic decisions
- Applying 21st century skills to make intelligent choices as a citizen

CS4 Information and Communication Skills

- Information and media literacy skills: Analyzing, accessing, managing, integrating, evaluating, and creating information in a variety of forms and media; understanding the role of media in society
- Communication skills: Understanding, managing, and creating effective oral, written, and multimedia communication in a variety of forms and contexts

CS5 Thinking and Problem-Solving Skills

- Critical thinking and systems thinking: Exercising sound reasoning in understanding and making complex choices, understanding the interconnections among systems
- Problem identification, formulation, and solution: Ability to frame, analyze, and solve problems
- Creativity and intellectual curiosity: Developing, implementing, and communicating new ideas to others, staying open and responsive to new and diverse perspectives

CS6 Interpersonal and Self-Directional Skills

- Interpersonal and collaborative skills: Demonstrating teamwork and leadership, adapting to varied roles and responsibilities, working productively with others, exercising empathy, respecting diverse perspectives
- Self-direction: Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another
- Accountability and adaptability: Exercising personal responsibility and flexibility in personal, workplace, and community contexts; setting and meeting high standards and goals for one's self and others; tolerating ambiguity

³ 21st century skills. (n.d.). Washington, DC: Partnership for 21st Century Skills.

- Social responsibility: Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace, and community contexts