

Pharmacy Science - 1 Year Program: Scope & Sequence

Semester 1

PT101 - Pharmacy Science I (89 days)

District Pre-Assessment

Unit Name: (1) History & Foundations of Pharmacy

(10 days- 5 Classroom, 5 Lab)

- Historical Events
- Profession and Role of Pharmacy
- Certification and Licensure
- Code of Ethics
- Job Opportunities/Career Tree
- CTSO Integration (Leadership Skills): CTSO Kick-off, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-D; 2.A-C; 4.A-F; 6.B; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.4,5; ELA.11-12.SL.1; ELA.11-12.L.4; HS.L1U3.23
- Work-Based Learning: Guest Speaker
- Technical Standard: 2.10, 2.11, 2.12, 8.4, 10.4

Unit Name: (2) Pharmacy Law & Ethics

(10 days- 8 Classroom, 2 Lab)

- Pharmacy Law & Regulation: State & Federal Levels
- Controlled substances
- Federal Regulatory Agencies
- Drug Recalls & Standards
- CTSO Integration (Leadership Skills): Officer Elections, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-D; 3.D; 4.A-F; 6.B; 8.A-B,D-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.4,5; ELA.11-12.SL.1, ELA.11-12.L.4
- Work-Based Learning: field trip
- Technical Standard: 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 2.8, 2.9, 2.13, 9.1

Unit Name: (3) Communication & Terminology

(9 days- 4 Classroom, 5 Lab)

- Types & Methods of Communication
- Sources of Drug Information
- Pharmacy Terminology & Abbreviations
- Building & Interpreting Medical Terms
- Processing Prescriptions
- CTSO Integration (Leadership Skills): Officers meeting (POW), Officer Training, Medical Terminology HOSA Competition, Health Career Display HOSA competition
- Professional Skills: 1.A-D; 2.A-C; 4.A-F; 6.B; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.4,5; ELA.11-12.SL.1, ELA.11- 12.L.4
- Work-Based Learning: Field Trip
- Technical Standard: 1.6, 1.10, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 8.1, 8.2, 8.3, 9.1

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HOSA Fall Leadership Conference

Unit Name: (4) Dosage Forms & Routes of Administration

(5 days- 2 Classroom, 3 Lab)

- Drug Sources
- Dosage Considerations
- Dosage Forms of Drugs
- Principles of Drug Administration
- CTSO Integration (Leadership Skills): Monthly Officer Meeting/ Monthly Chapter Meeting, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-D; 2.A-C; 4.A-F; 6.B; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.4,5; ELA.11-12.SL.1; ELA.11- 12.L.4
- Work-Based Learning: Guest Speaker
- Technical Standard: 1.8, 1.9

Unit Name: (5) Pharmaceutical Calculations

(9 days- 5 Classroom, 4 Lab)

- Metric, Household, & Apothecary Measurement Systems
- Converting Within & Between Systems
- Calculation of Oral & Parenteral Medications
- Calculation of Intravenous Solutions
- Pediatric Dosage Calculations
- CTSO Integration (Leadership Skills): Medical Math HOSA Competition, Leadership HOSA Rally
- Professional Skills: 1.C-D; 3.A,C,D; 4.A-F; 5.A; 8.A-I; 9.A-C
- Academic Standards: CAM.5.NF.B.3,6,7; CAM.5.MD.A.1; CAM.6.RP.A.3; CAM.6.EE.A.2; CAM.7.EE.B.3; CAM.7.RP.A.3; CAM.A-CED.A.1
- Work-Based Learning: Mentorship
- Technical Standard: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7

Unit Name: (6) Introduction to Pharmacology

(4 days- 3 Classroom, 1 Lab)

- Medication Errors & Safety
- Pharmacokinetics
- Pharmacodynamics
- Drug Actions & Interactions
- CTSO Integration (Leadership Skills): Pharmacology HOSA Competition, Pharmacy Science HOSA Competition, Advisory Council Meeting
- Professional Skills: 1.A-D; 2.A-C; 3.A-D; 4.A-F; 6.B; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.4,5; ELA.11-12.SL.1; HS.L1U1.20
- Work-Based Learning: Guest Speaker
- Technical Standard: 1.7, 4.1, 4.2, 4.4, 6.1, 6.2, 6.3

Unit Name: (7) Pharmacology - Integumentary System & Special Senses

(10 days- 8 Classroom, 2 Lab)

- Basic Anatomy & Physiology
- Brand & Generic Names, Indications, & Common Side Effects
- Disorders & Terminology
- CTSO Integration (Leadership Skills): Monthly Officer Meeting/ Monthly Chapter Meeting, Pharmacology HOSA Competition, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.D-E; 6.A-C; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.2-10; ELA.11-12.SL.1-6; ELA.11- 12.L.4,6
- Work-Based Learning: Field Trip
- Technical Standard: 1.1, 1.2, 1.3, 1.8, 4.1, 4.2, 4.3, 4.5

Unit Name: (8) Pharmacology - Respiratory System

(5 days- 4 Classroom, 1 Lab)

- Basic Anatomy & Physiology
- Brand & Generic Names, Indications, & Common Side Effects
- Disorders & Terminology
- CTSO Integration (Leadership Skills): Fall Leadership Conference, Community service event, Pharmacology HOSA Competition, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.D-E; 6.A-C; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.2-10; ELA.11-12.SL.1-6; ELA.11-12.L.4,6
- Work-Based Learning: Service Learning Project
- Technical Standard: 1.1, 1.2, 1.3, 1.8, 4.1, 4.2, 4.3, 4.5

Unit Name: (9) Safety in the Workplace

(3 days- 1 Classroom, 2 Lab)

- OSHA Standards
- Pharmacy Standards & Regulations
- Universal Precautions
- CTSO Integration (Leadership Skills): Advisory Council Meeting
- Professional Skills: 1.A-D; 2.B; 3.A-E; 4.A-F; 5.A-B; 6.B; 8.A-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4.10; ELA.11-12.W.4,5; ELA.11-12.SL.1; ELA.11-12.L.4
- Work-Based Learning: Simulated Lab Experience
- Technical Standard: 2.1, 5.2, 5.3

HOSA Regional Online Testing**Unit Name: (10) Sterile Compounding**

(11 days- 0 Classroom, 11 Lab)

- Aseptic Technique
- Equipment & Supplies
- Preparation of Intravenous Admixtures
- Non Injectable Sterile Products
- CTSO Integration (Leadership Skills): Regional OLT Monthly Officer Meeting/ Chapter Meeting, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-D, 2.B, 3.A-E, 4.A-F, 5.A-B, 6.B, ,8.A-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.4,5; ELA.11-12.SL.1; ELA.11-12.L.4; A1.A-CED.A.4, CAM.5.MD.A.1; CAM.6.RP.A.3
- Work-Based Learning: Simulated Lab Experience
- Technical Standard: 3.4, 3.7, 5.1, 5.2, 5.3, 5.4, 5.6, 5.7, 5.8, 7.5, 7.7, 7.8, 7.9, 9.4

Unit Name: (11) Pharmacology - Digestion System

(10 days- 9 Classroom, 1 Lab)

- Basic Anatomy & Physiology
- Brand & Generic Names, Indications, & Common Side Effects
- Disorders & Terminology
- CTSO Integration (Leadership Skills):Pharmacology HOSA Competition, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.D-E; 6.A-C; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.2-10; ELA.11-12.SL.1-6; ELA.11-12.L.4,6
- Work-Based Learning: Guest Speaker
- Technical Standard: 1.1, 1.2, 1.3, 1.8, 4.1, 4.2, 4.3, 4.5

Semester Exam

Semester 2

PT201 - Pharmacy Science II

(93 days)

Unit Name: (12) Community Pharmacy

(13 days- 0 Classroom, 13 Lab)

- Roles and Responsibilities
- Inventory
- Documentation, profile, data entry
- Vaccines and preventive care
- Patient Services and Communications
- Billing and Insurance
- CTSO Integration (Leadership Skills): State OLT, Community Service Event, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.A-E; 6.A-C; 7A-C; 8.A-I; 9A-C
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12;RI.4,10; ELA.11-12.W.4,5; ELA.11-12.SL.1; ELA.11-12.L.4; HS.L1U1.20; CAM.5.MD.A.1; CAM.6.RPA.3
- Work-Based Learning: Simulated Lab Experience, Field Trip
- Technical Standard: 1.6, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 6.3, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 8.4, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 10.1, 10.2, 10.3, 10.4

HOSA State Online Testing

Unit Name: (13) Pharmacology - Cardiovascular & Urinary

Systems

(10 days- 6 Classroom, 4 Lab)

- Basic Anatomy & Physiology
- Brand & Generic Names, Indications, & Common Side Effects
- Disorders & Terminology
- CTSO Integration (Leadership Skills): Monthly Officer Meeting/ Monthly Chapter Meeting, Pharmacology HOSA Competition, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.D-E; 6.A-C; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.2-10; ELA.11-12.SL.1-6; ELA.11-12.L.4,6
- Work-Based Learning: Simulated Lab Experience
- Technical Standard: 1.1, 1.2, 1.3, 1.8, 4.1, 4.2, 4.3, 4.5

HOSA Regional Competition

Unit Name: (14) Pharmacology - Immunology & Alternative Medicine

(8 days- 4 Classroom, 4 Lab)

- CPR/AED and First Aid
- Certification: CPR |AED, American Heart Association
- CTSO Integration (Leadership Skills): Region 2 Conference, CPR/First aid HOSA Competition
- Professional Skills: 1.A-C, 3.A-E, 4.A-F, 5.A-E, 8.A-I
- Academic Standards: 11-12. RL.4,7,9, RI. 4 10, W. 4,5, SL. 1, L. 4
- Work-Based Learning: Simulated Lab Experience
- Technical Standard: 2.14-15

Unit Name: (15) Pharmacology - Musculoskeletal System

(5 days- 3 Classroom, 2 Lab)

- Basic Anatomy & Physiology
- Brand & Generic Names, Indications, & Common Side Effects
- Disorders & Terminology
- CTSO Integration (Leadership Skills): Monthly Officer Meeting/ Monthly Chapter Meeting, Pharmacology HOSA Competition, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.D-E; 6.A-C; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.2-10; ELA.11-12.SL.1-6; ELA.11-12.L.4,6
- Work-Based Learning: Guest Speaker
- Technical Standard: 1.1, 1.2, 1.3, 1.8, 4.1, 4.2, 4.3, 4.5

Unit Name: (16) Hospital Pharmacy

(10 days- 0 Classroom, 10 Lab)

- Policies & Procedures
- Roles & Responsibilities
- Medications Orders
- Medications Dispensing Systems
- CTSO Integration (Leadership Skills): Pharmacy Science HOSA Competition, Advisory Council Meeting
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.A-E; 6.A-C; 7A-C; 8.A-I; 9A-C
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.W.4,5; ELA.11-12.SL.1; ELA.11-12.L.4
- Work-Based Learning: Simulated Lab Experience
- Technical Standard: 1.6, 2.5, 2.7, 2.9, 2.10, 2.11, 2.12, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.4, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 10.4

Unit Name: (17) Pharmacology - Nervous System

(10 days- 6 Classroom, 4 Lab)

- Basic Anatomy & Physiology
- Brand & Generic Names, Indications, & Common Side Effects
- Disorders & Terminology
- CTSO Integration (Leadership Skills): Monthly Officer Meeting/ Monthly Chapter Meeting; Pharmacology HOSA Competition, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.D-E; 6.A-C; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.2-10; ELA.11-12.SL.1-6; ELA.11-12.L.4,6
- Work-Based Learning: Field Trip
- Technical Standard: 1.1, 1.2, 1.3, 1.8, 4.1, 4.2, 4.3, 4.5

HOSA State Leadership Conference

Unit Name: (18) Extemporaneous Compounding

(9 days- 0 Classroom, 9 Lab)

- Terminology and Equipment
- Non-sterile techniques
- Creams/Lotions/lip balms
- CTSO Integration (Leadership Skills): Monthly Officer Meeting/ Monthly Chapter Meeting, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 3.A-E; 4.A-F; 5.A-E; 8.A-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.W.4,5; ELA.11-12.SL.1, ELA.11-12.L.4
- Work-Based Learning: Simulated Lab Experience
- Technical Standard: 3.4, 3.7, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.8, 5.9, 7.5, 7.7, 7.8, 7.9, 9.4

ADE Technical Skills Assessment

Unit Name: (19) Pharmacology - Endocrine & Reproductive Systems

(10 days- 6 Classroom, 4 Lab)

- Basic Anatomy & Physiology
- Brand & Generic Names, Indications, & Common Side Effects
- Disorders & Terminology
- CTSO Integration (Leadership Skills): CTSO Award Banquet, Pharmacology HOSA Competition, Pharmacy Science HOSA Competition
- Professional Skills: 1.A-C; 2.A-C; 3.A-E; 4.A-F; 5.D-E; 6.A-C; 8.A-B,D,F-I
- Academic Standards: ELA.11-12.RL.4,7,9; ELA.11-12.RI.4,10; ELA.11-12.W.2-10; ELA.11-12.SL.1-6; ELA.11-12.L.4,6
- Work-Based Learning: Guest Speaker
- Technical Standard: 1.1, 1.2, 1.3, 1.8, 4.1, 4.2, 4.3, 4.5

District Post-Assessment

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Unit Name: (20) Career Preparation

(13 days- 3 Classroom, 10 Lab)

- Certifications: American Heart Association CPR/AED certification, Pharmacy Technician Board Certification
- CTSO Integration (Leadership Skills): Resumes, Job Application, Mock Interviews
- Professional Skills: 1.A-C; 3.A-E; 4.A-F; 5.A-E; 8.A-I
- Academic Standards: ELA.11-12.RI.2,7,10; ELA.11-12.W.4,5,7; ELA.11-12.SL.4,6
- Work-Based Learning: Resumes, Job Application, Mock Interviews, Simulated Lab Experience
- Technical Standard: 2.11-12

Certifications:

**American Heart Association CPR/AED Certification
Pharmacy Technician Board Certification (PTCB) or
National Healthcareer Association (NHA)**

*Arizona Department of Education (ADE)
Common AZCCR Math Standards (CAMS)
English Language Arts Standards (ELAS)*