

CTE Course Description and Standards Crosswalk

Course Information	
Course Name	Medical Math
Course Number	84100
Number of High School Credits	0.5
Sequence or CTEPS (You must first have the Sequence or CTEPS entered into the EED-CTE system.)	Allied Health, Health Informatics, Pre-Nursing, Sports and Fitness, Biomedical Science
Date of district Course Revision	February 2015
Career & Technical Student Organization (CTSO)	
CTSO embedded in this sequence	HOSA
Occupational Standards	
Source of Occupational Standards	National Consortium on Health Science and Technology Education Model Curriculum for Pharmacy Technician Education and Training Programs
Names/Numbers of Occupational Standards	Accountability for National Health Care Cluster Foundation Standards: 1-11 Model Curriculum Goals
Registration Information	
Course Description (brief paragraph – as shown in your student handbook or course list)	Provides students with the interpretive skills to read, decode and process a variety of prescriptions requiring mathematical computations. Introduces the basic concepts needed to calculate oral, parenteral, pediatric and elderly drug dosages. Skills for interpreting intravenous flow rates, compounding, commercial and office management calculations are also included. Students with an interest in becoming a certified nursing assistant, medical assistant, medical, pharmacy, or dental technician, nurse, dentist, physician or pharmacist will find this course beneficial.
Instructional Topic Headings (please separate each heading by a semi-colon)	Oral dosing calculations (age and weight issues explored); Office and clerical math (profit, markup, accounting); Compounding, flow rates, dilutions and other formulae specific issues; Conversion between systems (apothecary, avoirdupois, metric and household); Employability standards of practice; Career exploration; Encourage involvement in Career and Technical Student Organizations
Summative Assessments and Standards	
Technical Skills Assessment (TSA)	HOSA K024
Course addresses:	
New Alaska ELA and Math Standards	Yes

DISTRICT NAME: Matanuska Susitna Borough School District

Alaska Cultural Standards	Yes
All Aspects of Industry (AAI)	Yes
Core Technical Standards	Yes
Employability Standards	Yes
Employability Standards	
Source of Employability Standards	State of Alaska
Tech Prep	
Current Tech Prep Articulation Agreement? (Y/N)	No
Date of Current Agreement	
Postsecondary Institution Name	
Postsecondary Course Name	
Postsecondary Course Number	
# of Postsecondary Credits	

Source/Organization/ Agency	Acronym	Website or Location of Information	Section, Chapters, etc. referenced in Performance Standards	Date of Edition or Version
Model Curriculum for Pharmacy Technician Education and Training Programs (American Society of Health-System Pharmacists)	ASHP	http://www.ashp.org/DocLibrary/Accreditation/Model-Curriculum.pdf	Model Curriculum Goals	Copyright, 2013 Third Edition
National Consortium on Health Science and Technology Education	NCHSTE	http://www.nchste.org/	Accountability for National Health Care Cluster Foundation Standards: 1-11	October 2013

Additional CTE Course Information

Author	
Course developed by	Kathi Baldwin and Kathy Foxley
Course adapted from	UAA Pharmacy Technology Program
Date of previous course revision	2010
Course Delivery Model	
Is the course brokered through another institution or agency? (Y/N)	No

Standards Alignment

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Accurately read and interpret prescription orders to calculate drug dosages using the metric, the apothecary and household systems of measurement.	<u>ASHP</u> 11, 12, 13, 18, 20, 23, 25, 36 <u>NCHSTE</u> 1.3	HL-SUP1 HL 1	SL.9-12.1 a-d SL.9-12.2 L.9-12.4.a-d L.9-12.6 RST.9-12.4 RST.9-10.7 RST.11-12.9	N-Q.1. N-Q.3. A-CED.4. A-REI.3.	B2, E3, E4	A-2	Tech Pro Skills	Class Discussions Written Assignment Assessments Unit Assessments Final Exams Student Demonstration Research Project Student Presentation Portfolio
Explore, compare and contrast potential medical careers with respect to education	<u>ASHP</u> 1, 2, 3, 4, 5,	CRP 7	SL.9-12 a-d	S-IC.1. S-IC.6.	B2, B4, E3, E4	A- 1,2,5	Planning Principles	Class Discussions

DISTRICT NAME: Matanuska Susitna Borough School District

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
and opportunities.	6, 7, 8, 10, 13, 14, 42, 43 <u>NCHSTE</u> 4.3, 4.4		SL.9- 12.4 L.9-12.6 WHST.9- 12.8			B-1,4,5	Tech Tech Pro Skills Labor Community	Written Assignment Interviews Skill Station Assessments Unit Assessments Final Exams Student Demonstratio n Research Project Student Presentation Portfolio
Calculate selling price, gross profit, gross margin, gross sales, percent markup, overhead, net profit, inventory levels and depreciation.	<u>ASHP</u> 12, 31, 32, 33, 39 <u>NCHSTE</u> 1.3	HL 1, HL-SUP3, 4, 5	SL.9- 12.1 a-d SL.9- 12.2 L.9- 12.4.a-d L.9-12.6 RST.9- 12.4 RST.9- 10.7 RST.11- 12.9	N-Q.1. N-Q.3. A-CED.4. A-REI.3.	B2, E3	A - 2	Tech Pro Skills, Finance	Class Discussions Written Assignment Unit Assessments Final Exam Research Project Student Presentation Portfolio
Accurately read and interpret prescription orders to calculate the flow rate of an IV medication when given the total volume, total	<u>ASHP</u> 12, 18, 23, 35	HL-SUP 1,	SL.9- 12.1 a-d SL.9-	N-Q.1. N-Q.3. A-CED.4.	B2, B4, E3, E4	A – 2, 6	Tech Pro Skills	Class Discussions Written

DISTRICT NAME: Matanuska Susitna Borough School District

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
time of administration and drops delivered per milliliter by the administration set.	<u>NCHSTE</u> 1.3	HL 1	12.2 L.9- 12.4.a-d L.9-12.6 RST.9- 12.4 RST.9- 10.7 RST.11- 12.9	A-REI.3.				Assignment Skill Station Assessments Unit Assessments Final Exams Student Demonstratio n
Solve practical health-related problems by choosing appropriately from a variety of mathematical techniques.	<u>ASHP</u> 12 <u>NCHSTE</u> 1.3	HL 1 HL-SUP 3	SL.9- 12.1 a-d SL.9- 12.2 L.9- 12.4.a-d L.9-12.6 RST.9- 12.4 RST.9- 10.7 RST.11- 12.9	N-Q.1. N-Q.3. A-CED.4. A-REI.3. S-IC.1. S-IC.6.	B2, C4, E3, E4	A – 2,6 B – 1, 4, 5	Tech Pro Skills	Class Discussions Written Assignment Skill Station Assessments Unit Assessments Final Exams Student Demonstratio n
Calculate the final strength and volume of a diluted substance when given the original strength and volume.	<u>ASHP</u> 12 <u>NCHSTE</u> 1.3	HL 1 HL-SUP 3	SL.9- 12.1 a-d SL.9- 12.2 L.9- 12.4.a-d L.9-12.6 RST.9- 12.4	N-Q.1. N-Q.3. A-CED.4. A-REI.3.	B2, E3, E4	A – 2,6	Tech Pro Skills	Class Discussions Written Assignment Skill Station Assessments Unit Assessments Final Exams

DISTRICT NAME: Matanuska Susitna Borough School District

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/Career Readiness Standards	All Aspects of Industry/Systems	Assessment
			RST.9-10.7 RST.11-12.9					Student Demonstration
Be aware of CTSO activities, including the HOSA Medical math examination	<u>ASHP</u> 2, 5, 6, 7 <u>NCHSTE</u> 1.3, 4.3	CRP1,2,4 6	S.9-12.1 a-d L.9-12.6		A7, B2, C2, C3, E1, E3, E7	A – 1,2,3,4,5 B – 1,2,3,4,5	Bus Planning Mgmt Community Work Habit Tech Pro Skills	Class Discussions Written Assignment Interviews Skill Station Assessments Unit Assessments HOSA Medical Math Exams Student Demonstration Research Project

Instructional Resources

List the major instructional resources used for this course: (websites, textbooks, essential equipment, reference materials, supplies)
Ogden, Sheila J. (2003) *Calculation of drug dosages: An interactive workbook. (Latest edition)*. St. Louis, MO: Mosby, Inc.

Other Instructional Resources:

American Pharmacists Association. (2004). *The pharmacy technician*. (Latest edition). Englewood: CO: Morton.

Ballington, D., & Laughlin, M. (2002). *Pharmacy practice*. St. Paul, MN: Paradigm.

DISTRICT NAME: Matanuska Susitna Borough School District

Hansten, P.D., & Horn, J.R. (2006). *The top 100 drug interactions: A guide to patient management*. Edmonds, WA: H & H.

Harteker, L.R. (1998). *The pharmacy technician companion*. Washington, DC: American Pharmaceutical Association.

Kastrup, E.R. (2006). *Drug facts and comparisons*. St. Louis, MO: Walters Kluwer.

Medical Economics Company. (2004). *Physicians' desk reference*. Montvale, NJ: Author.

Taber, C.W. (1977). *Taber's cyclopedic medical dictionary*. Philadelphia: F.A. Davis Company.

Young, L.Y., & Koda-Kimble. (1995). *Applied therapeutics: The clinical use of drugs*. Vancouver, WA: Applied Therapeutics, Inc.