**Course Outline- Virtual Foundations, HOT**

MTC –

**MAJOR TOPICS**

1. The Healthcare Industry overview:

* Medical and Dental Careers: Physician, LPN, Certified Nursing Assistant, Emergency Medical Technician, Registered Nurse, Dental Assistant, Pharmacy Technician, etc.
* Types of Medical Facilities

1. What do nurses do? A Guide to the Role of Nursing
2. Customer Service in Healthcare
3. Anatomy & Physiology: The Nine Major Body Systems: Circulatory, Skeletal, Respiratory, Digestive, Nervous, Muscular, Excretory, Endocrine System and Immune system

1. The four main vital signs: Body Temperature, Pulse Rate, Respiration rate, Blood pressure
2. Basic Pharmacology
3. Basic Safety in the HealthCare Field
4. Math in the Healthcare field:

The Metric System of Measurement

Conversion of Temperature: Fahrenheit & Celsius

Metric Conversions

1. Basic Medical Terminology and Abbreviations
2. Nutritional Components of Food: The food pyramids
3. Teeth and Gum care

**Teaching Resources**

1. **What do Nurses do? A Guide to the Role of Nursing.**

<https://www.careeronestop.org/Videos/IndustryVideos/health-science-occupations.aspx>

Registered Nurse: https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=29114100

LPN/LVN: <https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=29206100>

CNA: https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=31101400

Home Health Aide: <https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=31101100>

Medical Asst: https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=31909200

Pharmacy Tech: <https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=29205200>

Dental Asst: <https://www.careeronestop.org/videos/careeronestop-videos.aspx?videocode=29205200>

**Possible Exercises**: 1) Have students look up the salary levels and number of openings for each of these occupations in their home area. 2) Have students use internet resource to find potential employers in their home area. 3) Discuss with students with the required level of education and certifications needed for each of these occupations. 4) Have students look up educational institutions/schools in their home area where higher level nursing skills are offered.

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1. **Types of Healthcare Facilities**

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1. **Customer Service in Healthcare:**

Resources: <https://www.youtube.com/watch?v=bZj79exE96g>

PowerPoint:

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1. **The Major Body Systems:** Circulatory system, skeletal system, respiratory system, digestive system, nervous system, muscular system, excretory system, endocrine system, immune system

Resources:

<https://biologydictionary.net/body-systems/>

<https://www.ohio.k12.ky.us/userfiles/1421/Classes/16601/body%20systems.pdf?id=17814>

<https://www.wsfcs.k12.nc.us/cms/lib/NC01001395/Centricity/Domain/8472/Body%20Systems%20Interactions%20chart.pdf>

Power Point Presentations <https://docs.google.com/viewer?a=v&pid=sites&srcid=cm91bmRyb2NraXNkLm9yZ3x3bXM3c2NpZW5jZXxneDozNzhkMTljNGFiNTA3NjVl>

<https://docs.google.com/viewer?a=v&pid=sites&srcid=cm91bmRyb2NraXNkLm9yZ3x3bXM3c2NpZW5jZXxneDoyOTMyYjdlM2JhYjY2ZjUy>

<https://docs.google.com/viewer?a=v&pid=sites&srcid=cm91bmRyb2NraXNkLm9yZ3x3bXM3c2NpZW5jZXxneDo0YmRiNzg3MDhhMWU2YTE2>

https://docs.google.com/viewer?a=v&pid=sites&srcid=cm91bmRyb2NraXNkLm9yZ3x3bXM3c2NpZW5jZXxneDo2ODI2MzgzNjM1NzlmOTQz

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1. **The four main vital signs** Body Temperature, pulse rate, respiration rate, blood pressure

Resources:

https://www.hopkinsmedicine.org/health/conditions-and-diseases/vital-signs-body-temperature-pulse-rate-respiration-rat

<https://www.youtube.com/watch?v=EYcX2ttNkGU> temperature

<https://www.youtube.com/watch?v=gUWJ-6nL5-8>

**Power Point** <https://www.youtube.com/watch?v=gUWJ-6nL5-8>

1. **Medical Terminology**

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1. **Basic pharmacology:**

Resources: https://www.ccctc.k12.oh.us/Downloads/PharmPPBasics2.pdf

<https://www.youtube.com/watch?v=Z37UviMBXfk>

<https://www.youtube.com/watch?v=saxaFkiMjY>

https://www.youtube.com/watch?v=HiWfE-Pi4Bw

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1. **Legal Issues for Healthcare Workers**



1. **Math in the Healthcare Field:**

**“Basic Math for Healthcare Professionals”**

Resources: <https://www.nwtech.k12.wa.us/cms/lib/WA01001349/Centricity/Domain/45/Medical%20Math1.pdf>

This site is an 84-page document that covers all of the basic math components that relate to the healthcare profession. It can be divided into sections to review each different math component. Pages 64 – 84 provide an overview of medications and basic pharmacology calculations.

The Khan Academy videos provide a complete explanation of all of the math operations listed below.

Decimals Operations:

* Addition, subtraction, multiplication and division

Fraction operations:

* Addition, subtraction, multiplication, and division

Ratio and proportions:

* Define ratio and proportions
* Solve for x or an unknown in a proportion
* Determine for two ratios are a proportion

Dosage calculations and formulas:

* R/100 = P/B = proportion formula
* D/H X Q = X = equation formula
* mg: ml = mg: xml = ratio formula

Conversion of Temperature and formulas:

* Degrees Celsius C = 5/9 (F – 32)
* Degrees Fahrenheit F = 9/5 (C) + 32

Conversion in metric/English system**:** time, length, volume, liquid capacity, mass, temperature

The MTC Math Lessons and Problems for Healthcare, located on the Inside MTC Webpage, offers good lessons related to healthcare situations:

<https://employee.mtctrains.com/wp-content/uploads/education-and-training/student-training/academics/curriculum/foundations/curriculum-health-foundations-math-manual.pdf>

Introduction to the Metric System - Lessons and activities <https://www.mathsisfun.com/measure/metric-system.htm>

Article: Why don’t Americans use the Metric System?

<http://mysizeid.com/why-dont-americans-use-the-metric-system/>

1. **Nutrition:**

Resources: <https://www.safefood.net/healthy-eating/guidelines>

<https://www.choosemyplate.gov>

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1. **Teeth and Gum Care:**

Resource: <https://www.webmd.com/oral-health/guide/oral-health-overview-facts>