

# **Course Outline**

# **Table of Contents**

### Contents

Course: Anatomy & Physiology (1&2)	4
Course: Pathology (1&2)	24
Course: Foundations (1)	37
Course: Palpatory Anatomy and Kinesiology (1)	38
Course: Massage Techniques (1)	39
Course: Medical Terminology (1)	41
Course: Ethics (1&2)	42
Course: Research (1 & 2)	46
Course: Orthopedic Assessment (1&2)	47
Course: Treatment Planning (1&2)	48
Course: Self-Care (2)	50
Course: Business (2)	51
Course: Supervised Clinical Experience (1&2)	52
ADDENDUM: List of bony landmarks and muscles	53
ADDENDUM: Adjunctive Therapies	57
ADDENDUM: Outside Scope	57

**Note:** A number one (1) after the course name means it is taught in the first year; a number two (2) after the course name means it is taught in the second year; number one and two (1&2) after the course name means it is taught in both years.

# Course: Anatomy & Physiology (1&2)

SUBJECT MATTER	The branches of science that study the structures and functions of the normal human body.
LEARNING OUTCOMES	Explain the structure and function of the major human body systems, with emphasis on how anatomical and physiological principles relate to massage therapy practice, including tissue response and nervous system regulation.
DELIVERY METHOD	Self-directed online readings and assignments.
	The required textbook is supported by an expanded multimedia Evolve website, featuring Netter's 3D anatomy, active concept maps, audio summaries, case study questions, an audio glossary, an electronic anatomy colouring book, test questions with instant feedback, and 3D animations. This text features instructionally sound learning modules that incorporate animation, interactive exercises, and assessments.
	Applicable sections of anatomy and physiology are embedded directly and indirectly into the related regular program courses.
ASSESSMENT	Academic
Instructors	Two faculty instructors supervise this self-directed course, with technical support provided by the systems administrator.
	Contact via email and Moodle.
COURSE SCHEDULE	This self-directed course runs from the beginning of year one to the end of year two. Students must complete a minimum number of assignments on scheduled dates; however, they have the flexibility to work at a faster pace. Due dates and schedules are available to students on the learning management system, Moodle.
TEXTBOOKS & REFERENCES	Patton, K; Bell, F; Thompson, T; Williamson, P. (2022). Anatomy and Physiology, Ed. 11. Elsevier Inc.
LAST REVISION	September 2022

# CHAPTER 1 - Organization of the Body

Topics	
Science and Society, 3	Anatomical Position, 9
Scientific Method, 3	Anatomical Directions, 9
Cultural Context, 3	Directional Terms, 9
Anatomy and Physiology, 4	Terms Related to Organs, 10
Anatomy, 4	Anatomical Compass Rosette, 11
Physiology, 4	Body Planes and Sections, 11
Language of Science and Medicine, 4	Sagittal Planes, 11
Characteristics of Life, 5	Coronal Planes, 11
Levels of Organization, 6	Transverse Planes, 11
Chemical Level, 6	Other Planes and Sections, 11
Organelle Level, 7	Cavities, 12
Cellular Level, 7	Dorsal Cavities, 13
Tissue Level, 7	Ventral Cavities, 13
Organ Level, 7	Body Regions, 15
System Level, 7	Interaction of Structure and Function, 17
Organism Level, 8	Cycle of Life, 15
	The Big Picture: Organization of the Body, 18
	Case Study, 20

# **CHAPTER 2 - Homeostasis**

Topics	
Homeostasis, 24 The Internal Environment, 24 Relative Stability, 24 Variables, 25 Set Point, 25 Models of Homeostasis, 25 Homeostatic Mechanisms, 26 Feedback Loops, 26 The Response Pathway, 26 Negative Feedback in Control Systems, 27 Positive Feedback in Control System, 28 Changing the Set Point, 29	Feed-Forward in Control Systems, 30 Levels of Control, 31 Summary of Homeostasis, 31 Cycle of Life, 32 The Big Picture: Homeostasis, 32 Mechanisms of Disease, 32 Case Study, 36

# CHAPTER 3 - Chemistry of Life

Topics	
Units of Matter, 39     Elements and Compounds, 39     Atoms, 40  Atomic Structure, 41     Cloud Model, 41     Atomic Number and Mass Number, 41     Energy Levels, 41     Isotopes, 42  Attractions Between Atoms, 43     Chemical Bonds, 43     Ionic Bonds, 43     Covalent Bonds, 43  Attractions Between Molecules, 44     Hydrogen Bonds, 44     Other Weak Attractions, 45  Chemical Reactions, 45     Synthesis Reactions, 45     Decomposition Reactions, 46     Exchange Reactions, 46     Reversible Reactions, 46	Metabolism, 46 Body Chemistry, 46 Catabolism, 47 Anabolism, 47 Organic and Inorganic Compounds, 47 Inorganic Molecules, 47 Water, 47 Oxygen and Carbon Dioxide, 48 Electrolytes, 48 The Big Picture: Chemistry of Life, 51 Mechanisms of Disease, 51 Case Study, 52

# **CHAPTER 4 - Biomolecules**

Topics	
Organic Molecules, 56 Carbohydrates, 56 Monosaccharides, 57 Disaccharides and Polysaccharides, 57 Lipids, 58 Triglycerides or Fats, 58 Phospholipids, 59 Steroids, 60 Prostaglandins, 60 Proteins, 61	Nucleic Acids and Related Molecules, 66 DNA and RNA, 66 Nucleotides and Related Molecules, 68 Combined Forms, 69 The Big Picture: Biomolecules, 69 Mechanisms of Disease, 71 Case Study, 72
Amino Acids, 63 Levels of Protein Structure, 64 Importance of Protein Shape, 65	

# CHAPTER 5 - Cell Structure

Topics	
Functional Anatomy of Cells, 76	Nucleus, 87
The Typical Cell, 76	Cytoskeleton, 88
Cell Structures, 77	Cell Fibers, 88
Cell Membranes, 79	Centrosome, 88
Membrane Structure, 79	Molecular Motors, 89
Membrane Function, 80	Cell Extensions, 90
Cytoplasm and Organelles, 82	Cell Connections, 92
Endoplasmic Reticulum, 82	Desmosomes, 92
Ribosomes, 83	Gap Junctions, 92
Golgi Apparatus, 83	Tight Junctions, 92
Lysosomes, 85	The Big Picture: Cell Anatomy and the Whole
Proteasomes, 85	Body, 93
Peroxisomes, 86	Mechanisms of Disease, 93
Mitochondria, 86	Case Study, 94

# CHAPTER 6 - Cell Function

Topics	
Membrane Transport, 99 Overview of Membrane Transport, 99 Passive Transport Processes, 99 Active Transport Processes, 105	Catabolism, 112 Anabolism, 114 The Big Picture: Cell Physiology and the Whole Body, 116
Cell Metabolism, 109 Metabolism, 109 Role of Enzymes, 109	Mechanisms of Disease, 116 Case Study, 117

# CHAPTER 7 - Cell growth and development

Topics	
Protein Synthesis, 121	DNA Replication, 128
Deoxyribonucleic Acid (DNA), 121	Cell Reproduction, 129
Ribonucleic Acid (RNA), 122	Mitosis, 129
Transcription, 123	Meiosis, 130
Editing the Transcript, 123	Regulating the Cell Life Cycle, 131
Translation, 123	Cycle of Life, 133
Post-Translation Processing, 125	The Big Picture: Cell Growth, Reproduction, and
Cell Growth, 126	the Whole Body, 133
Production of Cytoplasm, 127	Mechanisms of Disease, 133
	Case Study, 135

# **CHAPTER 8 - Introduction to tissues**

Topics	
Protein Synthesis, 121	Cell Reproduction, 129
Deoxyribonucleic Acid (DNA), 121	Mitosis, 129
Ribonucleic Acid (RNA), 122	Meiosis, 130
Transcription, 123	Regulating the Cell Life Cycle, 131
Editing the Transcript, 123	Cycle of Life, 133
Translation, 123	The Big Picture: Cell Growth, Reproduction, and
Post-Translation Processing, 125	the Whole Body, 133
Cell Growth, 126	Mechanisms of Disease, 133
Production of Cytoplasm, 127	Case Study, 135
DNA Replication, 128	

# CHAPTER 9 - Tissue types

Topics	
Epithelial Tissue, 156 Types and Locations of Epithelial Tissue, 156 Functions of Epithelial Tissue, 156 Generalizations about Epithelial Tissue, 156 Classification of Epithelial Tissue, 156 Connective Tissue, 162 Functions of Connective Tissue, 162 Characteristics of Connective Tissue, 162 Classification of Connective Tissue, 163 Fibrous Connective Tissue, 163	Bone Tissue, 167 Cartilage Tissue, 169 Blood Tissue, 169 Muscle Tissue, 170 Nervous Tissue, 172 The Big Picture: Tissue Types and the Whole Body, 172 Case Study, 174 Career Choices, 174

# CHAPTER 10 - Skin

Topics	
Structure of the Skin, 181	Flexibility, 192
Overview of Skin Structure, 181	Excretion, 193
Thin and Thick Skin, 181	Hormone (Vitamin D) Production, 193
Epidermis, 182	Immunity, 193
Dermoepidermal Junction, 185	Homeostasis of Body Temperature, 193
Dermis, 185	Appendages of the Skin, 195
Hypodermis, 187	Hair, 195
Skin Color, 188	Nails, 197
Melanin, 188	Skin Glands, 198
Other Pigments, 190	Cycle of Life: Skin, 198
Functions of the Skin, 191	The Big Picture: Skin and the Whole Body, 199
Diversity of Skin Functions, 191	Mechanisms of Disease, 200
Protection, 191	Case Study, 205
Sensation, 192	

# CHAPTER 11 - Skeletal tissue

Topics	
Functions of Bone, 210	Mechanisms of Calcium Homeostasis, 219
Gross Structure of Bones, 210	Development of Bone, 220
Types of Bones, 210	Osteogenesis, 220
Structure of Long Bones, 211	Intramembranous Ossification, 220
Structure of Flat Bones, 212	Endochondral Ossification, 221
Microscopic Structure of Bones, 213	Bone Remodeling, 223
Bone Tissue, 213	Remodeling Process, 223
Compact Bone, 214	Importance of Remodeling, 225
Cancellous Bone, 214	Repair of Bone Fractures, 225
Types of Bone Cells, 216	Cycle of Life, 226
Bone Marrow, 217	The Big Picture: Skeletal Tissues, 227
Cartilage, 218	Mechanisms of Disease, 227
Regulation of Blood Calcium Levels, 219	Case Study, 229
Bone as a Calcium Depot, 219	

## CHAPTER 12 - Axial skeleton

Topics	
Divisions of the Skeleton, 234	Vertebrae, 253
Skull, 236	Sacrum and Coccyx, 253
Cranial Bones, 248	Spinal Curvatures, 253
Facial Bones, 250	Thorax, 255
Eye Orbits, 250	Sternum, 255
Fetal Skull, 250	Ribs, 258
Hyoid Bone, 252	Mechanisms of Disease, 260
Vertebral Column, 253 Overview of the Spine, 253	Case Study, 261

# CHAPTER 13 - Appendicular skeleton

Topics	
Divisions of the Skeleton, 234	Vertebrae, 253
Skull, 236	Sacrum and Coccyx, 253
Cranial Bones, 248	Spinal Curvatures, 253
Facial Bones, 250	Thorax, 255
Eye Orbits, 250	Sternum, 255
Fetal Skull, 250	Ribs, 258
Hyoid Bone, 252	Mechanisms of Disease, 260
Vertebral Column, 253	Case Study, 261
Overview of the Spine, 253	

### **CHAPTER 14 - Articulations**

#### **Topics**

Classification of Joints, 284

Fibrous Joints (Synarthroses), 284

Cartilaginous Joints (Amphiarthroses), 284

Synovial Joints (Diarthroses), 286

Representative Synovial Joints, 286

Vertebral Joints, 289

Humeroscapular Joint, 290

Elbow Joint, 291

Forearm, Wrist, Hand, and Finger Joints, 292

Hip Joint, 293

Knee Joint, 293

Ankle Joint, 295

Movement at Synovial Joints, 298

Range of Motion, 298

Angular Movements, 299

Circular Movements, 299

Gliding Movements, 299

Special Movements, 299

Examples of Joint Movements, 305

Cycle of Life, 305

The Big Picture: Articulations, 305

Mechanisms of Disease, 306

Case Study, 309

#### **CHAPTER 15 - Axial muscles**

#### **Topics**

Skeletal Muscle Structure, 314

Connective Tissue Components, 314

Size, Shape, and Fiber Arrangement, 316

Attachment of Muscles, 317

Muscle Actions, 318

Lever Systems, 318

How Muscles Are Named, 321

Hints on How to Deduce Muscle Actions, 323

Axial Muscles, 323

Muscles of the Head and Neck, 323

Muscles of Facial Expression, 323

Muscles of Mastication, 325

Muscles That Move the Head, 325

Trunk Muscles, 327

Muscles of the Thorax, 327

Muscles of the Abdominal Wall, 327

Muscles of the Back, 329

Muscles of the Pelvic Floor, 331

The Big Picture: Axial Muscles and the Whole

Body, 333

Case Study, 334

### CHAPTER 16 - Appendicular muscles

#### **Topics**

Appendicular Muscles, 338

Upper Extremity Muscles, 338

Muscles Acting on the Shoulder Girdle, 338

Muscles That Move the Arm, 341

Muscles That Move the Forearm, 341

Muscles That Move the Wrist, Hand, and

Fingers, 345

Lower Extremity Muscles, 349

Muscles That Move the Thigh and Leg, 349

Muscles That Move the Ankle and Foot, 356

Posture, 358

How Posture Is Maintained, 358

Cycle of Life, 358

The Big Picture: Appendicular Muscles and the

Whole Body, 359

#### **CHAPTER 17 - Muscle contraction**

### **Topics**

General Functions, 363

Function of Skeletal Muscle Tissue, 363

Functional Characteristics of Muscle, 363

Overview of the Muscle Cell, 363

Myofilaments, 365

Mechanism of Contraction, 367

Energy Sources for Muscle Contraction, 371

Function of Skeletal Muscle Organs, 374

Motor Unit, 374 Myography, 375

The Twitch Contraction, 375

Treppe: The Staircase Phenomenon, 376

Tetanus, 376

Muscle Tone, 378

Graded Strength Principle, 378

Grades of Muscle Strength, 378

Mobilizing and Stabilizing Contractions, 380

Function of Cardiac and Smooth Muscle Tissue, 382

Cardiac Muscle, 382

Smooth Muscle, 383

The Big Picture: Muscle Tissue and the Whole Body,

384

Mechanisms of Disease: Major Muscular Conditions,

385

Career Choices, 388

Case Study, 388

### CHAPTER 18 - Nervous system cells

#### **Topics**

Organization of the Nervous System, 395

Central and Peripheral Nervous Systems, 395

Afferent and Efferent Divisions, 396

Somatic and Autonomic Nervous Systems, 396

Glia, 397

Overview of Glia, 397

Central Glia, 397

Peripheral Glia, 399

Neurons, 401

Structure and Function of Neurons, 401

Classification of Neurons, 403

Reflex Arc, 404

Nerves and Tracts, 406

Nerves, 406

Tracts, 406

White and Gray Matter, 406

Repair of Nerve Fibers, 406

Cycle of Life, 407

The Big Picture: Nervous System Cells and the

Whole Body, 409

Mechanisms of Disease, 409

### CHAPTER 19 - Nerve signaling

#### **Topics**

Electrical Nature of Neurons, 415

Membrane Potentials, 415

Resting Membrane Potentials, 415

Local Potentials, 416

Action Potentials, 417

Mechanism of the Action Potential, 417

Refractory Period, 419

Conduction of the Action Potential, 419

Synaptic Transmission, 420

Structure of the Synapse, 420

Types of Synapses, 421

Mechanisms of Synaptic Transmission, 422

Summation, 424

Synapses and Memory, 425

Neurotransmitters, 426

Functional Classification of

Neurotransmitters, 426

Structural Classification of

Neurotransmitters, 427

Neural Networks, 431

The Network Model, 431

Development of Neural Networks, 431

Complexity in Neural Networks, 431

The Big Picture: Nerve Signaling and the Whole

Body, 433

Mechanisms of Disease, 433

Case Study, 434

### CHAPTER 20 - Central nervous system

#### **Topics**

Coverings of the Brain and Spinal Cord, 439

Cerebrospinal Fluid, 442

Fluid Spaces, 442

Formation and Circulation of Cerebrospinal

Fluid, 442

Spinal Cord, 444

Structure of the Spinal Cord, 444

Functions of the Spinal Cord, 446

Brain, 447

Regions of the Brain, 447

Brain Development, 447

Structure of the Brainstem, 449

Functions of the Brainstem, 450

Structure of the Cerebellum, 451

Functions of the Cerebellum, 452

Diencephalon, 454

Structure of the Cerebrum, 456

Functions of the Cerebral Cortex, 459

Somatic Sensory Pathways, 466

Somatic Motor Pathways, 467

Final Common Path, 467

Pyramidal Tracts, 468

Extrapyramidal Tracts, 469

Facilitatory and Inhibitory Tracts, 469

Cycle of Life: Central Nervous System, 469

The Big Picture: The Central Nervous System and

the Whole Body, 471

Mechanisms of Disease, 471

# CHAPTER 21 - Peripheral nervous system

Topics	
Spinal Nerves, 482 Structure of Spinal Nerves, 482 Nerve Plexuses, 484 Dermatomes and Myotomes, 488 Cranial Nerves, 491 Olfactory Nerve (CN I), 492 Optic Nerve (CN II),493 Oculomotor Nerve (CN III), 493 Trochlear Nerve (CN IV), 493 Trigeminal Nerve (CN V), 493 Abducens Nerve (CN VI), 494	Facial Nerve (CN VII), 494 Vestibulocochlear Nerve (CN VIII), 494 Glossopharyngeal Nerve (CN IX), 495 Vagus Nerve (CN X), 496 Accessory Nerve (CN XI), 496 Hypoglossal Nerve (CN XII), 497 Somatic Motor Nervous System, 497 Divisions of the Peripheral Nervous Systems, 497 The Big Picture: Peripheral Nervous System and the Whole Body, 500 Case Study, 501

# CHAPTER 22 - Autonomic nervous system

Topics	
Overview of the Autonomic Nervous System, 506 Role of the Autonomic Nervous System, 506 Divisions of the Autonomic Nervous System, 507 Structure of the Autonomic Nervous System, 507 Basic Plan of Autonomic Pathways, 507 Structure of the Sympathetic Pathways, 508 Structure of the Parasympathetic Pathways, 509 Autonomic Neurotransmitters and Receptors, 511 Norepinephrine and Its Receptors, 511 Acetylcholine and Its Receptors, 512	Nonadrenergic-Noncholinergic Transmission, 513 Synaptic Complexity, 513 Pharmacology, 513 Functions of the Autonomic Nervous System, 514 Overview of Autonomic Function, 514 Functions of the Sympathetic Division, 516 Functions of the Parasympathetic Division, 516 The Big Picture: Autonomic Nervous System and the Whole Body, 518 Case Study, 519

## CHAPTER 23 - General senses

Topics	
Sensory Receptors, 523	Sense of Touch, 527
Receptor Response, 523	Skin Movement, 527
Distribution of Receptors, 523	Itch, 528
Classification of Receptors, 524	Tickle, 528
Classification by Sensory Pathway, 524	Light Touch, 529
Classification by Location, 524	Deep Touch, 529
Classification by Stimulus Detected, 524	Sense of Proprioception, 529
Classification by Structure, 525	The Big Picture: General Senses, 530
Sense of Pain, 525	Case Study, 531
Sense of Temperature, 527	

# CHAPTER 24 - Special senses

Topics	
Sense of Smell, 535	Balance, 543
Olfactory Receptors, 535	Sense of Vision, 544
Olfactory Pathway, 536	Structure of the Eye, 545
Sense of Taste, 536	The Process of Seeing, 550
Taste Buds, 536	Cycle of Life, 555
Neural Pathway for Taste, 538	The Big Picture: Special Senses, 556
Senses of Hearing and Balance, 538	Mechanisms of Disease, 556
Structure of the Ear, 539	Case Study, 560
The Process of Hearing, 540	

# CHAPTER 25 - Endocrine regulation

Topics	
Organization of the Endocrine System, 566 Classification of Hormones, 567 Steroid Hormones, 567 Nonsteroid Hormones, 567 How Hormones Work, 570 General Principles of Hormone Action, 570 Mechanisms of Steroid Hormone Action, 570 Mechanisms of Nonsteroid Hormone Action, 571 Regulation of Hormone Secretion, 573	Regulation of Target Cell Sensitivity, 574 Eicosanoids, 576 Tissue Hormones, 576 Prostaglandins, 577 Thromboxanes and Leukotrienes, 577 The Big Picture: Endocrine Regulation and the Whole Body, 579 Mechanisms of Disease, 579

# CHAPTER 26 - Endocrine glands

Topics	
Pituitary Gland, 584 Structure of the Pituitary Gland 584 Adenohypophysis (Anterior Lobe of Pituitary), 584 Neurohypophysis (Posterior Lobe of Pituitary), 590 Pineal Gland, 591 Thyroid Gland, 592 Structure of the Thyroid Gland, 592 Thyroid Hormone, 592 Calcitonin, 594 Parathyroid Glands, 595 Structure of the Parathyroid Glands, 595 Parathyroid Hormone, 595 Adrenal Glands, 596 Structure of the Adrenal Glands, 596 Adrenal Cortex, 596 Adrenal Medulla, 599 Pancreatic Islets, 600	Structure of the Pancreatic Islets, 600 Pancreatic Hormones, 601 Gonads, 602 Testes, 602 Ovaries, 603 Placenta, 603 Thymus, 603 Gastric and Intestinal Mucosa, 603 Heart, 603 Adipose Tissue, 605 Other Endocrine Glands and Hormones, 605 Cycle of Life, 605 The Big Picture: The Endocrine System and the Whole Body, 606 Mechanisms of Disease, 606 Case Study, 609 Career Choices, 609

# CHAPTER 27 - Blood

Topics	
Blood Composition, 617	White Blood Cell Numbers, 629
Blood Tissue, 617	Formation of White Blood Cells, 630
Blood Plasma, 617	Platelets, 630
Formed Elements, 618	Structure and Function of Platelets, 630
Hematopoiesis, 618	Formation and Life Span of Platelets 631
Blood Volume, 619	Hemostasis, 631
Hematocrit, 620	Vasoconstriction, 631
Red Blood Cells, 620	Platelet Plug Formation, 631
Structure of Red Blood Cells, 620	Blood Clotting (Coagulation), 632
Function of Red Blood Cells, 621	Conditions That Oppose Clotting, 633
Hemoglobin, 621	Conditions That Hasten Clotting, 633
Formation of Red Blood Cells, 622	Clot Dissolution, 634
Life Cycle of Red Blood Cells, 622	The Big Picture: Blood and the Whole Body, 636
Blood Types, 624	Mechanisms of Disease, 636
White Blood Cells, 628	Case Study, 640
Granulocytes, 629	
Agranulocytes, 629	

## CHAPTER 28 - Heart

Topics	
Heart Structure, 645	Electrocardiogram, 658
Location of the Heart, 645	Cardiac Cycle, 661
Size and Shape of the Heart, 645	Heart Sounds, 663
Coverings of the Heart, 649	Cycle of Life, 664
Structure of the Heart, 650	The Big Picture: Heart, 664
The Heart as a Pump, 657	Mechanisms of Disease, 664
Conduction System of the Heart, 657	Case Study, 669

## CHAPTER 29 - Blood vessels

Topics	
Blood Vessel Types, 674	Systemic Arteries, 680
Arteries, 674	Systemic Veins, 683
Capillaries, 674	Fetal Circulation, 697
Veins, 677	Organization of Fetal Circulation, 697
Structure of Blood Vessels, 677	Changes in Circulation at Birth, 699
Circulatory Routes, 678	Cycle of Life, 699
Systemic Circulation, 678	The Big Picture: Blood Vessels and the Whole
Pulmonary Circulation, 678	Body, 699
Circulatory Bypasses, 679	Mechanisms of Disease, 700
Systemic Circulation, 680	Case Study, 704

## CHAPTER 30 - Circulation of blood

Topics	
Hemodynamics, 708	Minute Volume of Blood, 725
Primary Principle of Circulation, 709	Velocity of Blood Flow, 726
Arterial Blood Pressure, 710	Pulse, 727
Cardiac Output, 710	Mechanism, 727
Peripheral Resistance, 713	Pulse Wave, 727
Venous Return to the Heart, 719	Where the Pulse Can Be Felt, 728
Stress-Relaxation Effect, 719	Venous Pulse, 728
Effect of Gravity, 719	Cycle of Life, 729
Venous Pumps, 719	The Big Picture: Blood Flow and the Whole Body,
Total Blood Volume, 720	730
Measuring Blood Pressure, 723	Mechanisms of Disease, 730
Arterial Blood Pressure, 723	Case Study, 732
Blood Pressure and Bleeding, 724	

# CHAPTER 31- Lymphatic system

Topics	
Overview of the Lymphatic System, 737 Lymph and Interstitial Fluid, 738 Lymphatic Vessels, 739 Distribution of Lymphatic Vessels, 739 Structure of Lymphatic Vessels, 739 Functions of Lymphatic Vessels, 740 Circulation of Lymph, 740 Origin of Lymph, 740 The Lymphatic Pump, 741 Lymph Nodes, 742 Structure of Lymph Nodes, 742 Locations of Lymph Nodes, 743 Functions of Lymph Nodes, 745 Lymphatic Drainage of the Breast, 746 Distribution of Lymphatics in the Breast, 746	Lymph Nodes Associated With the Breast, 747 Tonsils, 747 Thymus, 748 Location and Appearance of the Thymus, 748 Structure of the Thymus, 748 Function of the Thymus, 748 Spleen, 749 Location of the Spleen, 749 Structure of the Spleen, 749 Functions of the Spleen, 750 Cycle of Life, 751 The Big Picture: Lymphatic System and the Whole Body, 751 Mechanisms of Disease, 752 Case Study, 754

# CHAPTER 32 - Innate immunity

Topics	
Organization of the Immune System, 758	Phagocytosis, 762
Defense of the Body, 758	Natural Killer Cells, 764
Innate Immunity, 758	Interferon, 765
Species Resistance, 759	Complement, 765
Mechanical and Chemical Barriers, 760	Toll-Like Receptors, 767
Inflammation and Fever, 760	The Big Picture: Innate Immunity and the Whole
The Inflammatory Response, 760	Body, 767
Fever, 761	

# CHAPTER 33 - Adaptive immunity

Topics	
Overview of Adaptive Immunity, 771	Activation and Functions of T Cells, 780
B Cells and Antibody-Mediated Immunity, 773	Types of Adaptive Immunity, 783
Development and Activation of B Cells, 773	Summary of Adaptive Immunity, 784
Antibodies (Immunoglobulins), 773	The Big Picture: Immune System and the Whole
Clonal Selection Theory, 778	Body, 787
T Cells and Cell-Mediated Immunity, 779	Mechanisms of Disease, 787
Development of T Cells, 779	Case Study, 791

## **CHAPTER 34 - Stress**

Topics	
Selye's Concept of Stress, 795	Role of the Brain in Stress, 801
Development of Selye's Stress Concept, 795	Stress and Disease, 803
Definitions, 795	Indicators of Stress, 804
Stressors, 795	Effects of Intrauterine Stress, 805
General Adaptation Syndrome, 797	Summary of the Allostatic Model, 805
Mechanism of Stress, 797	The Big Picture: Stress and the Whole Body, 806
Some Current Concents About Stress, 799	Case Study, 807

Career Choices, 808

# CHAPTER 35 - Respiratory tract

Allostatic Load Model, 799

Stress Syndrome, 800

Topics	
Structural Organization, 813	Lungs, 824
Upper Respiratory Tract, 814	Thorax, 827
Nose, 814	Cycle of Life, 828
Pharynx, 816	The Big Picture: Respiratory Tract, 829
Larynx, 817	Mechanisms of Disease, 829
Lower Respiratory Tract, 819	Case Study, 833
Trachea, 819	
Bronchi and Alveoli, 819	

### **CHAPTER 36 - Ventilation**

Topics	
Mechanism of Ventilation, 837 Primary Principle of Ventilation, 837 Inspiration, 838 Expiration, 841 Pulmonary Volumes and Capacities, 843 Pulmonary Volumes, 843 Pulmonary Capacities, 846	Homeostasis of Blood Gases and pH, 850 Respiratory Control Centers, 850 Feedback and Responses, 850 Other Influences on Ventilation, 853 E Big Picture: Ventilation and the Whole Body, 250 Chanisms of Disease, 854 E Study, 857

# CHAPTER 37 - Gas exchange and transport

Topics	
Pulmonary Gas Exchange, 861	Transport of Carbon Dioxide, 866
Partial Pressure, 861	Systemic Gas Exchange, 868
Exchange of Gases in the Lungs, 862	The Big Picture: Gas Exchange and Transport and
How Blood Transports Gases, 864	the Whole Body, 870
Hemoglobin, 864	Case Study, 871
Transport of Oxygen, 864	

# CHAPTER 38 - Upper digestive tract

Topics	
Organization of the Digestive System, 874	Stomach, 885
The Digestive Tract, 874	Size and Position of the Stomach, 885
Wall of the Gastrointestinal Tract, 875	Divisions of the Stomach, 885
Mouth, 877	Curves of the Stomach, 885
Structure of the Oral Cavity, 877	Sphincter Muscles, 885
Salivary Glands, 879	Stomach Wall, 886
Teeth, 880	Functions of the Stomach, 886
Pharynx, 882	Cycle of Life, 887
Esophagus, 882	Mechanisms of Disease, 887
Overview of Esophagus, 882	Case Study, 892
Esophageal Sphincters, 883	
Gastroesophageal Reflux, 883	

# CHAPTER 39 - Lower digestive tract

Topics	
Small Intestine, 896	Functions of the Liver, 905
Size and Position of the Small Intestine, 896	Gallbladder, 906
Divisions of the Small Intestine, 896	Size and Location of the Gallbladder, 906
Wall of the Small Intestine, 897	Structure of the Gallbladder, 906
Large Intestine, 898	Functions of the Gallbladder, 906
Size of the Large Intestine, 898	Pancreas, 906
Divisions of the Large Intestine, 899	Size and Location of the Pancreas, 906
Wall of the Large Intestine, 900	Structure of the Pancreas, 906
Vermiform Appendix, 900	Functions of the Pancreas, 907
Peritoneum, 901	Cycle of Life: Lower Digestive Tract, 907
Liver, 901	The Big Picture: The Digestive Tract, 908
Location and Size of the Liver, 901	Mechanisms of Disease, 908
Liver Lobes and Lobules, 902	Case Study, 911
Bile Ducts, 902	

# CHAPTER 40 - Digestion and absorption

Topics	
Overview of Digestive Function, 915	Control of Gastric Secretion, 931
Digestion, 916	Control of Pancreatic Secretion, 931
Mechanical Digestion, 916	Control of Bile Secretion, 932
Chemical Digestion, 920	Control of Intestinal Secretion, 932
Secretion, 926	Absorption, 933
Saliva, 926	Process of Absorption, 933
Gastric Juice, 927	Mechanisms of Absorption, 933
Pancreatic Juice, 928	Elimination, 936
Bile, 929	The Big Picture: Digestion and the Whole Body,
Intestinal Juice, 929	937
Control of Digestive Gland Secretion, 931	Case Study, 938
Control of Salivary Secretion, 931	

# CHAPTER 41 - Nutrition and metabolism

Topics	
Nutrition and Metabolism, 943	Vitamins and Minerals, 962
Overview, 943	Vitamins, 962
Nutrients, 943	Minerals, 964
A Balanced Diet, 943	Metabolic Rates, 966
Metabolic Pathways, 944	Basal Metabolic Rate, 966
Energy Transfer During Metabolism, 944	Total Metabolic Rate, 968
Carbohydrates, 945	Energy Balance and Body Weight, 969
Categories of Carbohydrates, 945	Mechanisms for Regulating Food Intake, 970
Carbohydrate Metabolism, 947	Role of Hypothalamus, 970
Control of Glucose Metabolism, 955	Temperature of Blood, 970
Lipids, 957	Blood Glucose, 970
Types and Sources of Lipids, 957	Hormones and Neurotransmitters, 970
Transport of Lipids, 957	Body Temperature, 971
Lipid Metabolism, 958	Cycle of Life, 971
Proteins, 960	The Big Picture: Nutrition, Metabolism, and the
Sources of Proteins, 960	Whole Body, 971
Protein Metabolism, 961	Mechanisms of Disease, 972
	Case Study 976

# CHAPTER 42 - Urinary system

Topics	
Anatomy of the Urinary System, 981	Regulation of Urine Volume, 998
Gross Structure, 981	Micturition, 1000
Microscopic Structure, 985	Urine Composition, 1001
Physiology of the Urinary System, 991	Cycle of Life, 1004
Overview of Kidney Function, 991	The Big Picture: Urinary System and the Whole
Filtration, 991	Body, 1004
Reabsorption, 993	Mechanisms of Disease, 1004
Secretion, 998	Case Study, 1009

# CHAPTER 43 - Fluid and electrolyte balance

Topics	
Fluid and Electrolyte Balance, 1014	Factors That Alter Fluid Loss, 1019
Total Body Water, 1014	Regulation of Water and Electrolytes, 1022
Body Fluid Compartments, 1014	Starling's Law of the Capillaries, 1022
Electrolytes in Body Fluids, 1015	Edema, 1023
Extracellular vs. Intracellular Fluids, 1015	Regulation of Water and Electrolytes in
Measuring Electrolyte Reactivity, 1017	Intracellular Fluid, 1024
Avenues of Water Entry and Exit, 1017	Regulation of Sodium and Potassium, 1025
General Principles of Fluid Balance, 1017	Cycle of Life, 1026
Homeostasis of Total Fluid Volume, 1018	Big Picture: Fluid and Electrolyte Balance, 1027
Regulation of Fluid Intake, 1018	Mechanisms of Disease, 1027
Regulation of Urine Volume, 1019	Case Study, 1030

## CHAPTER 44 - Acid-base balance

Topics	
pH of Body Fluids, 1034	Respiratory Mechanisms, 1040
Review of the pH Concept, 1034	Overview of Respiratory Mechanisms, 1040
Factors That Affect pH of Body Fluids, 1035	Respiratory Adjustment of Blood pH, 1040
pH Control Mechanisms, 1036	Principles Relating Respiration to pH, 1040
Overview of pH Control Mechanisms, 1036	Arterial Blood Gas Analysis, 1040
Integration of pH Control, 1036	Urinary Mechanisms, 1042
Chemical Mechanisms, 1036	Overview of Urinary Mechanisms, 1042
Buffers Defined, 1036	Regulating pH of Urine and Blood, 1042
Buffer Pairs, 1036	The Big Picture: Acid-Base Balance, 1044
Buffer Activity, 1037	Mechanisms of Disease, 1045
Role of Buffers in pH Control, 1040	Case Study, 1048
	Career Choices, 1049

### CHAPTER 45 - Male reproductive system

#### **Topics**

Sexual Reproduction, 1055

Male Reproductive Organs, 1055

Male Reproductive Tract, 1055

Perineum, 1056

Testes, 1057

Structure and Location, 1057

Microscopic Anatomy of the Testis, 1057

Functions of the Testes, 1058

Spermatozoa, 1060

Reproductive Ducts, 1062

Epididymis, 1062

Vas Deferens, 1062

Ejaculatory Duct, 1062

Urethra, 1062

Accessory Reproductive Glands, 1064

Seminal Vesicles, 1064

Prostate Gland, 1064

Bulbourethral Glands, 1065

Supporting Structures, 1065

Scrotum, 1065

Penis, 1066

Spermatic Cords, 1066

Composition and Course of Seminal Fluid, 1066

Male Fertility, 1066

Cycle of Life, 1067

The Big Picture: Male Reproductive System, 1067

Mechanisms of Disease, 1068

Case Study, 1070

### CHAPTER 46 - Female reproductive system

#### **Topics**

Overview of the Female Reproductive System,

1074

Function, 1074

Structure, 1074

Perineum, 1075

Ovaries, 1076

Location of the Ovaries, 1076

Microscopic Structure of the Ovaries, 1077

Functions of the Ovaries, 1077

Ova, 1077

Uterine Tubes, 1077

Location of the Uterine Tubes, 1077

Structure of the Uterine Tubes, 1078

Function of the Uterine Tubes, 1079

Uterus, 1079

Structure of the Uterus, 1079

Functions of the Uterus, 1081

Vagina, 1081

Location of the Vagina, 1081

Structure of the Vagina, 1082

Functions of the Vagina, 1082

Vulva, 1082

Structure of the Vulva, 1082

Functions of the Vulva, 1083

Female Reproductive Cycles, 1084

Recurring Cycles, 1084

Control of Female Reproductive Cycles, 1087

Importance of Female Reproductive Cycles,

1088

Infertility, 1089

Menarche and Menopause, 1091

Breasts, 1093

Location and Size of the Breasts, 1093

Structure of the Breasts, 1093

Function of the Breasts, 1094

Cycle of Life, 1096

The Big Picture: Female Reproductive System

and the Whole Body, 1096

Mechanisms of Disease, 1096

### CHAPTER 47 - Growth, development, and aging

#### **Topics**

Human Reproduction, 1107

Production of Sex Cells, 1107

Ovulation and Insemination, 1109

Fertilization, 1112

Prenatal Period, 1113

Cleavage and Implantation, 1113

Placenta, 1114

Periods of Development, 1117

Stem Cells, 1118

Formation of the Primary Germ Layers, 1118

Histogenesis and Organogenesis, 1119

Birth, 1122

Stages of Labor, 1123

Multiple Births, 1124

Postnatal Period, 1126

Growth, Development, and Aging, 1126

Infancy, 1126

Childhood, 1128

Adolescence and Adulthood, 1128

Older Adulthood, 1129

Aging, 1129

Mechanisms of Aging, 1129

Effects of Aging, 1130

Causes of Death, 1133

The Big Picture: Growth, Development, Aging,

and the Whole Body, 1134

Mechanisms of Disease, Conditions of Pregnancy

and Early Development, 1134

Case Study, 1137

### CHAPTER 48 - Genetics and heredity

#### **Topics**

The Science of Genetics, 1142

Chromosomes and Genes, 1142

Mechanism of Gene Function, 1142

The Human Genome, 1142

Distribution of Chromosomes to Offspring,

1145

Gene Expression, 1146

Hereditary Traits, 1146

Sex-Linked Traits, 1148

Genetic Mutations, 1149

Medical Genetics, 1150

Mechanisms of Genetic Diseases, 1150

Nuclear Inheritance, 1150

Single-Gene Diseases, 1152

Multiple-Gene Diseases, 1154

Epigenetic Conditions, 1154

Chromosomal Diseases, 1155

Genetic Basis of Cancer, 1155

Prevention and Treatment of Genetic Diseases,

1156

Genetic Counseling, 1156

Treating Genetic Diseases, 1158

The Big Picture: Genetics, Heredity, and the

Whole Body, 1160

Case Study, 1162

Career Choices, 1162

# Course: Pathology (1&2)

SUBJECT MATTER	Concepts of health and disease.  Mechanisms of disease as they relate to the systems of the body.  Pharmacology and Medication.
LEARNING OUTCOMES	Discuss anatomy and physiology of systems of the body.  Identify signs and symptoms of common pathologies of each system of the body.  List appropriate massage considerations for common pathologies. (Each chapter below lists <i>specific</i> outcomes)
DELIVERY METHOD	Self-directed online assignments and narrated PowerPoint presentations.  Applicable sections of pathology are embedded directly and indirectly into related regular program courses.
ASSESSMENT	Academic, simulated, clinical
INSTRUCTORS	Two faculty instructors supervise this self-directed course, with technical support provided by the systems administrator.  Contact is via email and Moodle.
COURSE SCHEDULE	This self-directed course runs from the beginning of year one to the end of year two. Students must complete a minimum number of assignments on scheduled dates; however, they have the flexibility to work at a faster pace. Due dates and schedules are available to students on the learning management system, Moodle.
TEXTBOOKS & REFERENCES	Salvo, Susan G.: Pathology for the Massage Professionals, 5th ed. Elsevier, 2022
LAST REVISION	September 2022

# CHAPTER 1 - Concepts of health and disease, standard precautions, transmission-based precautions, cleaning and disinfection procedures

### **Learning Outcomes and Competencies**

- Define massage and concepts of health.
- Identify concepts of disease.
- Recall types of diseases and disorders.
- Describe the chain of infection and processes of disease transmission.
- Summarize standard precautions and transmission-based precautions.
- Discuss cleaning and disinfecting procedures for surfaces, objects, and laundry.

Topics	
Introduction,	Deficiency Diseases,
Concepts of Health,	Degenerative Diseases,
Biomedical Model,	Genetic Diseases,
Biopsychosocial Model,	Metabolic Diseases,
Biopsychosocial-Spiritual Model,	Infectious Diseases,
Social-Ecologic Model,	Chain of Infection: the Process of Disease
Concepts of Disease,	Transmission,
Disease, Illness, Pathology, Diagnosis,	Infection,
and Prognosis,	Inflammation,
Signs and Symptoms,	Treatment of Disease,
Etiology and Risk Factors,	Precautions to Prevent Transmission of
Disease Complications,	Infectious Agents: Standard and Transmission-
Local and Systemic Diseases,	Based Precautions,
Disease Outbreaks: Endemics,	Hand Hygiene,
Epidemics, and Pandemics,	Personal Protective Equipment,
Acute and Chronic Diseases,	Respiratory Hygiene and Cough
Morbidity, Incidence, Prevalence, and	Etiquette,
Mortality,	Disinfecting Procedures for Surfaces, Objects,
Types of Diseases and Disorders,	and Laundry,
Congenital Disorders,	Hard Surfaces,
Traumatic Disorders,	Soft Surfaces,
Autoimmune Diseases,	Reusable Objects,
Cancerous Diseases (Cancer),	Laundry,

# CHAPTER 3 - Pharmacology and medications

- Discuss drugs, their effects, and differences between prescription and nonprescription drugs.
- Indicate how to query clients about medication use, their routes of administration, and incorporate this information into a treatment plan.
- Describe how to modify massage for clients who use pain and inflammation-reducing drugs and medications to manage diabetes and cardiovascular disease.
- Explain how to modify massage for clients who use drugs to manage respiratory disorders, mood disorders, and gonadal hormones.

Тор	pics
Introduction,	Vasodilators,
Drugs and Drug Effects,	Antiarrhythmic Drugs,
Therapeutic Effects,	Angiotensin-Converting Enzyme
Side Effects,	Inhibitors,
Adverse Events,	Angiotensin II-Receptor Blockers,
Drug Distribution: Prescription, Over-The-	Alpha Blockers,
Counter, And Behind-The-Counter Drugs,	Beta Blockers,
Prescription Drugs,	Calcium Channel Blockers,
Over-the-Counter Drugs,	Diuretics,
Behind-the-Counter Drugs,	Lipid-Lowering Drugs,
Medications and Treatment Planning,	Massage and Lipid-Lowering Drugs,
Routes of Administration,	Medications to Manage Respiratory Disorders,
Oral Route,	Antihistamines,
Inhalation Route,	Antitussives,
Injection Route,	Bronchodilators,
Transdermal (Topical) Route,	Decongestants,
Medications to Manage Pain and	Expectorants,
Inflammation,	Medications To Manage Mood Disorders,
Nonsteroidal Anti-inflammatory Drugs,	Antianxiety, Sedative, and Hypnotic
Corticosteroids,	Drugs,
Skeletal Muscle Relaxants,	Antidepressant Drugs,
Narcotics and Opioids,	Antipsychotic Drugs,
Medications to Manage Diabetes,	Gonadal Hormones,
Hypoglycemics and Antidiabetic	Estrogens and Progesterone,
Agents,	Testosterone,
Medications to Manage Cardiovascular Disease,	
Anticoagulants and Antiplatelets,	

### CHAPTER 4 - Dermatologic pathologies, conditions, injuries

- Discuss anatomy, physiology, and lesions of the integumentary system.
- Define bacterial skin infections and list appropriate massage modifications.
- Summarize fungal skin infections and list appropriate massage modifications.
- Outline viral skin infections and list appropriate massage modifications.
- Discuss inflammatory skin conditions and list appropriate massage modifications.
- List miscellaneous skin conditions and list appropriate massage modifications.
- Describe lice and scabies infestations and state appropriate massage modifications.
- Identify bruises and scars, their massage considerations, and discuss scar tissue massage.
- Discuss burns, stretch marks, corns/calluses, decubitus ulcers, including massage considerations.
- Describe skin cancers and their appropriate massage considerations.
- Explain skin pigmentations and state appropriate massage modifications.

Topics	
Integumentary System Review,	Rosacea,
Skin Lesions,	Pityriasis Rosea,
Primary Skin Lesions,	Lichen Planus,
Secondary Skin Lesions,	Scleroderma,
Bacterial Skin Infections,	Hives (Urticaria),
Acne,	Ichthyosis Vulgaris,
Folliculitis,	Epidermoid Cyst,
Impetigo,	Actinic Keratosis,
Boils and Carbuncles,	Seborrheic Keratosis,
Cellulitis,	Skin Tags,
Paronychia,	Lice and Scabies Infestations,
Fungal Skin Infections,	Lice Infestation,
Ringworm,	Scabies Infestation,
Athlete's Foot,	Skin Injuries,
Nail Fungal Infection,	Bruises,
Jock Itch,	Scars,
Viral Skin Infections,	Burns,
Cold Sores (Herpes Simplex),	Stretch Marks,
Chickenpox,	Corns and Calluses,
Shingles,	Decubitus Ulcers,
Warts,	Skin Cancers,
Inflammatory and Other Skin Conditions,	Basal Cell Carcinoma,
Eczema (Atopic Dermatitis),	Squamous Cell Carcinoma,
Psoriasis,	Melanoma,
Contact Dermatitis,	Skin Pigmentation Disorders and Conditions,
Seborrheic Dermatitis,	

### CHAPTER 5 - Musculoskeletal pathologies, disorders, and injuries

#### **Learning Outcomes**

- Discuss anatomy and physiology of the musculoskeletal system.
- Define osteoporosis, fibromyalgia syndrome, myofascial pain syndrome, headaches (tension, migraines, cluster), and Dupuytren contracture and list appropriate massage modifications.
- Explain bunions, hammertoes, mallet toes, pes planus and pes cavus, bone cancer, Paget disease, osteomalacia and rickets, Marfan syndrome, and muscular dystrophy and list appropriate massage considerations.
- Identify spinal deviations and list appropriate massage modifications.
- Distinguish joint disorders and list appropriate massage considerations.
- Describe osteoarthritis and spondylosis, joint replacement surgeries, and massage considerations for each including postsurgical scar tissue massage.
- List other types of arthritis including rheumatoid arthritis, juvenile rheumatoid arthritis, ankylosing spondylitis, gout, and Lyme disease and list appropriate massage modifications.
- Summarize dislocations and subluxations, fractures, osteomyelitis, and myositis ossificans and list appropriate massage considerations.
- Discuss sprains and strains, patellofemoral pain syndrome and chondromalacia patellae, tendinopathies, Osgood-Schlatter disease, torticollis, and whiplash-associated disorders and list appropriate massage modifications.
- Identify adhesive capsulitis, rotator cuff tears, impingement syndrome, compartment syndrome, shin splints, and plantar fasciitis and list appropriate massage considerations.

#### **Topics**

Skeletal System Review, Muscular System Review,

Musculoskeletal Pathologies and Disorders,

Osteoporosis, Fibromyalgia Syndrome, Myofascial Pain Syndrome, Headaches (Tension, Migraine, and Cluster), Dupuytren Contracture, Bunions, Hammertoes, and Mallet Toes, Pes Planus and Pes Cavus, Bone Cancer, Paget Disease, Osteomalacia and Rickets, Marfan Syndrome, Muscular Dystrophy,

Spinal Deviations,

Hyperkyphosis (Kyphosis), Hyperlordosis (Lordosis), Scoliosis

Joint Disorders.

Spondylolisthesis and Spondylolysis, Ganglion Cyst, Baker Cyst, Bursitis, Temporomandibular Disorders,

Arthritis,

Osteoarthritis and Spondylosis, Rheumatoid Arthritis and Juvenile Rheumatoid Arthritis, Ankylosing Spondylitis, Gout, Lyme Disease, Traumatic and Repetitive Musculoskeletal Injuries,

Soft Tissue Injuries: The Inflammatory Response and Recommended Protocols,

Dislocations and Subluxations,
Fractures, Osteomyelitis, Myositis
Ossificans, Sprains and Strains,
Patellofemoral Pain Syndrome and
Chondromalacia Patellae,
Tendinopathies: Tendinitis, Tendinosis,
Tenosynovitis (De Quervain
Tenosynovitis), and Epicondylitis,
Osgood-Schlatter Disease,
Torticollis (Cervical or Spasmodic
Dystonia), Whiplash-Associated
Disorder, Adhesive Capsulitis (Frozen
Shoulder), Rotator Cuff Tears and
Impingement Syndrome,

Shin Splints (Medial Tibial Stress Syndrome), Plantar Fasciitis,

Compartment Syndrome,

### Chapter 6 - Neurologic Pathologies and disorders

- Discuss anatomy and physiology of the nervous system.
- Identify central nervous system disorders, such as spina bifida, cerebral palsy, attention deficit—hyperactivity disorder, and autism spectrum disorder and list appropriate massage considerations.
- Explain seizure disorders, their massage considerations, and discuss first aid measures for this condition.
- Identify traumatic brain injuries (concussions, contusions, and coup-contrecoup), spinal cord injuries, and brain and spinal cord tumors and list their appropriate massage considerations.
- Define neurodegenerative diseases of the nervous system and list appropriate massage considerations.
- Discuss neurovascular disorders and infectious diseases and state appropriate massage considerations.
- Describe intervertebral disc disorders and list appropriate massage considerations.
- Summarize peripheral nerve disorders and list appropriate massage considerations.

Topics	
Nervous System Review, Central Nervous System Disorders, Spina Bifida, Cerebral Palsy, Attention Deficit-Hyperactivity Disorder, Autism Spectrum Disorder, Seizure Disorders (Epilepsy), Traumatic Brain Injuries (Concussions, Contusions, Coup-Contrecoup), Spinal Cord Injuries, Brain and Spinal Cord Tumors, Neurodegenerative Diseases, Dementia, Alzheimer Disease, Parkinson Disease, Amyotrophic Lateral Sclerosis (Lou Gehrig Disease), Multiple Sclerosis, Huntington Disease,	Neurovascular Disorders,     Transient Ischemic Attack,     Stroke, Infectious Diseases,     Meningitis,     Encephalitis,     Poliomyelitis and Postpolio Syndrome, Intervertebral Disc Disorders,     Degenerative Disc Disease,     Herniated Disc and Bulging Disc,     Sciatica (Piriformis Syndrome), Peripheral Nerve Disorders,     Trigeminal Neuralgia,     Bell Palsy,     Myasthenia Gravis,     Guillain-Barré Syndrome,     Peripheral Neuropathy,     Thoracic Outlet Syndrome,     Carpal Tunnel Syndrome,

### **CHAPTER 7 - Endocrine Pathologies**

#### **Learning Outcomes**

- Discuss anatomy and physiology of the endocrine system.
- Define diseases of the pituitary and list appropriate massage considerations.
- Summarize diseases of the thyroid and parathyroids and list appropriate massage considerations.
- Identify diseases of the adrenal cortex and list appropriate massage considerations.
- Define types of diabetes and list appropriate massage considerations.
- Discuss amputations and list appropriate massage modifications.

Topics	
Endocrine System Review,	Diseases of the Parathyroids,
Diseases of the Pituitary,	Hyperparathyroidism,
Gigantism, Acromegaly, Dwarfism,	Hypoparathyroidism,
Diabetes Insipidus,	Diseases of the Adrenal Cortex,
Diseases of the Thyroid,	Cushing Disease and Cushing
Graves Disease (Hyperthyroidism),	Syndrome (Hypercortisolism),
Hashimoto Disease (Hypothyroidism),	Addison Disease (Hypocortisolism),
Thyroid Cancer	Diseases of the Pancreas
Trigiola Caricei	Diabetes Mellitus, Type 1 and 2

# CHAPTER 8 - Cardiovascular pathologies and disorders

- Discuss anatomy and physiology of the cardiovascular system.
- Define blood disorders and list appropriate massage considerations.
- Describe hypertension, angina pectoris, and congestive heart failure and list appropriate massage considerations.
- Summarize rheumatic fever and rheumatic heart disease, carditis, and myocardial infarction and list appropriate massage modifications.
- Identify arterial diseases and list appropriate massage considerations.
- Define venous diseases and list appropriate massage modifications.

Topics	
Cardiovascular System Review, Diseases and Disorders of Blood, Anemia, Leukemia, Multiple Myeloma, Diseases and Disorders of the Heart, Hypertensive Heart Disease (Hypertension), Angina Pectoris, Congestive Heart Failure, Rheumatic Fever and Rheumatic Heart Disease,	Diseases and Disorders of the Arteries, Atherosclerosis, Coronary Artery Disease, Peripheral Artery Disease, Aneurysm, Raynaud Disease (Raynaud Syndrome), Buerger Disease (Thromboangiitis Obliterans), Diseases and Disorders of the Veins,
Carditis: Pericarditis, Myocarditis, and Endocarditis, Myocardial Infarction,	Deep Vein Thrombosis, Thrombophlebitis, and Venous Thromboembolism, Phlebitis, Varicose Veins

### CHAPTER 9 - Lymphatic and immune pathologies and conditions

#### **Learning Outcomes**

- Discuss anatomy, physiology, and the effects of aging on the lymphatic system and immunity.
- Define conditions of the lymphatic system outlined in the chapter and list appropriate massage considerations for each.
- Identify conditions of immunity featured in the chapter and list appropriate massage considerations for each.

#### **Topics**

Lymphatic System Review,

Pathologies and Conditions of the Lymphatic System,

Lymphedema and Edema,

Lymphoma: Hodgkin and Non-Hodgkin,

Pathologies and Conditions of Immunity,

Allergies,

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome,

Systemic Lupus Erythematosus,

Human Immunodeficiency Viral Infection,

### CHAPTER 10 - Respiratory pathologies, disorders, and conditions

- Discuss anatomy and physiology of the respiratory system.
- Define upper respiratory tract infections and list appropriate massage considerations.
- Identify lower respiratory tract infections and appropriate massage modifications.
- Explain asthma and list its appropriate massage considerations.
- Summarize bronchitis, emphysema, pneumoconiosis, cystic fibrosis, and obstructive sleep apnea and appropriate massage modifications.
- Explain pulmonary edema and pulmonary embolism and appropriate massage considerations.
- Discuss hay fever and its appropriate massage considerations.

Topics	
Respiratory System Review,	Chronic Obstructive Pulmonary Diseases,
Upper Respiratory Tract Conditions,	Asthma,
Common Cold,	Bronchitis,
Sinusitis,	Emphysema,
Pharyngitis,	Pneumoconiosis,
Laryngitis,	Cystic Fibrosis,
Laryngeal Cancer,	Obstructive Sleep Apnea,
Influenza,	Vascular Disorders,
Mononucleosis,	Pulmonary Edema,
Lower Respiratory Tract Conditions,	Pulmonary Embolism,
Pneumonia, Tuberculosis,	Immune Disorders,
Pleurisy, Lung Cancer,	Hay Fever,

### CHAPTER 11 - Gastrointestinal pathologies, dysfunctions, and disorders

- Discuss anatomy and physiology of the gastrointestinal system.
- Define general dysfunctions of the gastrointestinal tract and list appropriate massage considerations.
- Identify diseases of the upper gastrointestinal tract and list appropriate massage modifications.
- Summarize diverticulosis, diverticulitis, irritable bowel syndrome, ulcerative colitis, and Crohn disease, and discuss colostomies and ileostomies; include their appropriate massage considerations.
- Define appendicitis, hemorrhoids, and colorectal cancer and include appropriate massage considerations.
- Explain diseases of the liver, gallbladder, and pancreas and include appropriate massage considerations.
- Identify types of hernias and peritonitis and list appropriate massage modifications.
- Discuss disorders of nutrient intake and absorption and list appropriate massage considerations.

Topics	
Gastrointestinal System Review,	Appendicitis,
General Dysfunctions of the Gastrointestinal	Hemorrhoids,
Tract,	Colorectal Cancer,
Nausea,	Diseases of the Liver, Gallbladder, and
Vomiting,	Pancreas,
Constipation,	Hepatitis,
Diarrhea,	Cirrhosis,
Jaundice,	Liver Cancer,
Diseases of the Upper Gastrointestinal Tract,	Gallstones,
Thrush,	Cholecystitis,
Oral, Pharyngeal, and Esophageal	Pancreatitis,
Cancers,	Pancreatic Cancer,
Tonsillitis,	Hernias and Peritonitis,
Gastroesophageal Reflux Disease, Peptic Ulcer Disease: Esophageal,	Hernias: Hiatal, Umbilical, Inguinal, Femoral, and Incisional,
Stomach, and Intestinal Ulcers,	Peritonitis,
Gastritis,	Disorders of Nutrient Intake and
Gastroenteritis,	Malabsorption,
Stomach Cancer,	Overweight and Obesity,
Diseases of the Lower Gastrointestinal Tract,	Celiac Disease,
Diverticulosis and Diverticulitis,	Anorexia Nervosa,
Irritable Bowel Syndrome,	Bulimia Nervosa,
Ulcerative Colitis,	Binge Eating Disorder,
Crohn Disease,	

### **CHAPTER 12 - Urinary Pathologies**

#### **Learning Outcomes**

- Discuss anatomy and physiology of the urinary system.
- Define disorders of the kidneys and list appropriate massage considerations.
- Explain dialysis and list appropriate massage modifications.
- Summarize disorders of the lower urinary tract and appropriate massage considerations.

#### **Topics**

Urinary System Review,

Pathologies and Disorders of the Kidney,

Glomerulonephritis,

Kidney Cancer,

Kidney Stones,

Kidney Infection (Pyelonephritis),

Polycystic Kidney Disease,

Kidney Failure,

Dialysis,

Pathologies and Disorders of the Lower Urinary Tract,

Urinary Tract Infections (Urethritis and Cystitis),

Bladder Cancer,

Urinary Incontinence,

### CHAPTER 13 - Reproductive pathologies, conditions, and disorders

- Discuss anatomy and physiology of the reproductive system.
- Define conditions of the female reproductive system, while stating appropriate massage considerations.
- Identify premenstrual syndrome, dysmenorrhea, endometriosis, uterine fibroids, endometrial cancer, cervical cancer, ovarian cysts, polycystic ovary syndrome, and ovarian cancer while stating their appropriate massage considerations.
- Identify pelvic organ prolapse, pelvic inflammatory disease, and vaginal candidiasis while stating their appropriate massage modifications.
- Discuss infertility and pregnancy-related pathologies/disorders and list appropriate massage considerations.
- Summarize pathologies and disorders of the breasts and list massage considerations.
- Describe prostatic pathologies and disorders, as well as sexually transmitted diseases and list appropriate massage modifications.

Topics	
Reproductive System Review,	Preterm Labor,
Conditions of the Female Reproductive System,	Preeclampsia,
Menstruation,	Gestational Diabetes Mellitus,
Pregnancy and Childbirth,	Placenta Previa,
Menopause,	Placental Abruption,
Pathologies and Disorders of the Female	Prenatal Depression,
Reproductive System,	Postpartum Depression,
Premenstrual Syndrome,	Pathologies and Disorders of the Breasts,
Dysmenorrhea (Menstrual Cramps),	Fibrocystic Breasts,
Endometriosis,	Mastitis,
Uterine Fibroids,	Breast Cancer,
Endometrial (Uterine) Cancer,	Pathologies and Disorders of the
Cervical Cancer,	Prostate,
Ovarian Cysts and Polycystic Ovary	Benign Prostatic Hyperplasia,
Syndrome,	Prostatitis,
Ovarian Cancer,	Prostate Cancer,
Pelvic Organ Prolapse,	Sexually Transmitted Diseases,
Pelvic Inflammatory Disease,	Chlamydia,
Vaginal Candidiasis (Yeast Infection),	Gonorrhea,
Infertility and Pathologies/Disorders of Pregnancy,	Syphilis,
Infertility,	Genital Herpes,
Hyperemesis Gravidarum,	Genital Warts,
Miscarriage (Spontaneous Abortion),	Trichomoniasis,
Ectopic Pregnancy,	

### CHAPTER 14 - Cancer and oncology massage

#### **Learning Outcomes**

- Define cancer, cancer cell characteristics, and tumors.
- State cancer progression, metastasis, diagnosis, risk factors, and cancer signs and symptoms.
- Summarize cancer treatments, including chemotherapy, radiation, and surgery.
- Discuss oncology massage and massage modifications for cancer-related surgery, radiation therapy, and chemotherapy.

Topics	
Introduction,	Cancer Signs and Symptoms,
Cancer,	C-A-U-T-I-O-N,
Cancer Cell Characteristics,	Cancer Treatments and Hospice Care,
Tumors,	Surgery, Chemotherapy, Radiation
Benign Tumors and Nomenclature,	Therapy, Hospice Care,
Malignant Tumors and Nomenclature,	Oncology Massage,
Tumor Nomenclature Exceptions,	Be a Team Player, Educate Yourself,
Cancer Progression, Metastasis, Diagnosis,	Be Accepting and Reverent,
and Prognosis,	Teach Massage to Family, Friends,
Progression, Metastasis, Diagnosis,	and Caregivers of Cancer Patients,
Prognosis: Staging and Grading,	Teach Self-Massage to Cancer
Risk Factors for Cancer,	Patients,
External Risk Factors, Internal Risk	Oncology Massage: General
Factors,	Considerations,

# CHAPTER 15 - Mental Disorders and disorders of sleep, anxiety, mood, eating, and substance use

#### **Learning Outcomes**

- Define anxiety and mood disorders outlined in this chapter and list appropriate massage considerations for each.
- Identify eating disorders and those related to substance use and describe appropriate massage considerations for each.

#### **Topics**

Introduction,

Mental Disorders,

Sleep and Sleep Disorders,

Sleep Disorders (Insomnia, Hypersomnia, Narcolepsy, Parasomnia, Sleep Apnea, and Restless Leg Syndrome),

Anxiety Disorders,

Generalized Anxiety Disorder, Panic Attack and Panic Disorder, Specific Phobias, Obsessive-Compulsive Disorders,

Acute Stress and Posttraumatic Stress Disorder,

Mood Disorders.

Major Depressive and Persistent Depressive Disorders, Seasonal Affective Disorder, Bipolar Disorders,

Prenatal and Postpartum Depression,

Eating Disorders and Substance Use Disorders,

Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Substance Use Disorders,

### CHAPTER 16 - Geriatric Massage

#### **Learning Outcomes**

- Define geriatric massage and discuss physiologic effects of aging and age-related diseases.
- Discuss practice settings and body positions for elderly clients, and geriatric massage techniques.
- Describe impairments of vision, hearing, and mobility, appropriate practice settings and technique modifications for these populations, and the duty to protect through mandatory reporting.

#### **Topics**

#### Introduction,

Aging: Physiologic Effects and Associated Diseases,

Aging and the Integumentary System,

Aging and the Musculoskeletal System,

Aging and the Nervous System,

Aging and the Endocrine System,

Aging and the Cardiovascular System,

Aging and the Lymphatic System/Immunity,

Aging and the Respiratory System,

Aging and the Gastrointestinal System,

Aging and the Urinary System,

Aging and the Reproductive System,

#### Geriatric Massage,

Practice Setting,

Determine Client Robustness or Frailty,

Body Positions for Elderly Clients,

Geriatric Massage Techniques,

Impairments of Vision, Hearing, and Mobility,

Visual Impairments,

Hearing Impairments,

Mobility Impairments,

The Duty to Protect,

# Course: Foundations (1)

SUBJECT MATTER	Massage tables, accessories, linens, lubricants, the massage environment, body mechanics, massage clinic equipment and supplies. Therapist wellness, wellbeing, and self-care. Client Safety. Concepts of Disease. Introductory anatomy and physiology of the skeletal, muscular, integumentary, and nervous systems.
LEARNING OUTCOMES	<ul> <li>Define massage table features and state how to care for table fabrics.         Discuss table accessories: face rests and bolsters, and massage linens.         Discuss massage lubricants: how to choose, dispense, apply, and store them.</li> <li>Describe the massage room environment and safety guidelines.</li> <li>Define body mechanics.</li> <li>State and demonstrate principles of effective body mechanics.</li> <li>Define vocabulary and terms used to discuss disease and disease transmission. Discuss disinfecting procedures. Introduction to emergency preparedness.</li> <li>Define career longevity, wellness, wellbeing, self-care, and the wellness and biopsychosocial models.</li> <li>Discuss the physical dimension of wellness.</li> <li>Outline the occupational, intellectual, emotional, social, and spiritual dimensions of wellness.</li> <li>Introduction to the anatomy and physiology of the skeletal, muscular, integumentary, and nervous systems.</li> </ul>
DELIVERY METHOD	Lecture, demonstration, applied, simulated
ASSESSMENT	Academic, simulated, clinical
Instructors	Vicars' faculty. Out-of-class contact is via email and Moodle.
COURSE SCHEDULE	Year one. Dates and schedules are available to students on the learning management system, Moodle.
TEXTBOOKS & REFERENCES	Salvo, Susan G.: Massage Therapy Principles and Practice, 7th ed. Elsevier, 2023. Chapter 3, Tools of the Trade; Chapter 7, Body Mechanics, Client Positioning, and Draping; Chapter 4, Career Longevity; Chapter 9, Concepts of Disease, etc., Chapters 18-23, Anatomy and Physiology  Patton, K; Bell, F; Thompson, T; Williamson, P.: Anatomy and Physiology, Ed. 11. Elsevier Inc. 2022.  Intermediate First Aid and CPR C
LAST REVISION	In-house handbooks September 2025
	September 2023

# Course: Palpatory Anatomy and Kinesiology (1)

SUBJECT MATTER	Bones and bony landmarks of skeletal system; origins, insertions, actions of the muscular system, and accessory structures of the musculoskeletal system.
LEARNING OUTCOMES	<ul> <li>Identify bones, bony landmarks, muscles and accessory structures.</li> <li>Locate bones, bony landmarks, muscles and accessory structures.</li> <li>Palpate bones, bony landmarks, muscles and accessory structures.</li> </ul>
DELIVERY METHOD	Lecture, demonstration, applied, simulated
ASSESSMENT	Academic, simulated, clinical
INSTRUCTORS	Vicars' faculty. Out-of-class contact is via email and Moodle.
COURSE SCHEDULE	Year one. Dates and schedules are available to students on the learning management system, Moodle.
TEXTBOOKS & REFERENCES	Biel, Andrew: Trail Guide to the Body, 6th ed. Books of Discovery, 2019 Biel, Andrew: Trail Guide to the Body, 6th ed. Student Workbook, Books of Discovery, 2019 Biel, Andrew: Trail Guide to the Body Flashcards, 6th ed. Books of Discovery, 2019 Muscolino, Joseph: Musculoskeletal Anatomy Coloring Book, Mosby, 2004
LAST REVISION	September 2019
LIST OF STRUCTURES	See addendum: List of bony landmarks and muscles at the end of this document.

# Course: Massage Techniques (1)

Subject Matter	Manual techniques applicable to massage therapy.
	Indications, safety considerations, effects, outcomes and modifications for a variety of manual techniques.
	Client draping in a therapeutic setting.
	Application of massage techniques while the client is sitting erect or reclining.
	Use of massage techniques to create a nurturing and bonding experience between infant and caregiver.
Learning Outcomes	Apply the qualities and characteristics, as they apply to massage, of intention, touch, depth and direction of pressure, speed, frequency, rhythm, continuity, duration, sequence, and principles of massage.
	<ul> <li>Explain and demonstrate appropriate draping variations using sheets and towels.</li> </ul>
	<ul> <li>Demonstrate appropriate draping maintenance for client turning and getting off the table.</li> </ul>
	<ul> <li>Identify common client positions.</li> </ul>
	<ul> <li>Demonstrate effective use of bolsters to support various client body positions.</li> </ul>
	Demonstrate skill in explaining and performing all variations of effleurage, stroking, petrissage, skin rolling, vibration, tapotement, non-specific joint mobilization, friction, muscle stripping, muscle approximation, Golgi tendon organ techniques, manual lymphatic drainage techniques, trigger point techniques, myofascial techniques, joint mobilization techniques, and diaphragmatic breathing techniques
	<ul> <li>Identify cautionary sites and general massage contraindications.</li> </ul>
	<ul> <li>Define seated massage and list major considerations when buying a massage chair.</li> </ul>
	<ul> <li>Perform a basic seated massage sequence.</li> </ul>
	<ul> <li>Direct caregivers in the performance of bonding massage techniques on their infants.</li> </ul>
Delivery Method	Lecture, demonstration, applied, simulated
Assessment	Academic, simulated, clinical
Instructors	Vicars' faculty. Out-of-class contact is via email and Moodle.
Course Schedule	Year one. Dates and schedules are available to students on the learning management system, Moodle.

Textbooks and References	Salvo, Susan G: Massage Therapy Principles and Practice, 7th ed. Elsevier, 2023. Chapter 7, Body Mechanics, Client Positioning and Draping, Chapter 8, Massage Techniques, Mobilizations, Stretches, Endangerment Sites, and Emergency Preparedness, Chapter 15, Seated Massage: Principles and Practice.  Standards of Practice MTAA 2012  In-house video resources on Moodle  In-house handbooks
Last Revision	September 2023

# Course: Medical Terminology (1)

SUBJECT MATTER	The terminology of science and medicine; pronunciation and etymology of scientific and medical terms
LEARNING OUTCOMES	<ul> <li>Identify common medical prefixes, suffixes, and roots.</li> </ul>
	<ul> <li>Identify combining vowels and forms.</li> </ul>
	<ul> <li>Identify terms and definitions of common medical words.</li> </ul>
	<ul> <li>Identify directional terms relating to the human body.</li> </ul>
	<ul> <li>Identify numerical values.</li> </ul>
	<ul> <li>Identify terms relating to surgical procedures.</li> </ul>
	<ul> <li>Identify terms relating to diagnostic procedures.</li> </ul>
	<ul> <li>Identify terms relating to the five senses.</li> </ul>
	<ul> <li>Identify common synonyms relating to medical terms.</li> </ul>
	<ul> <li>Identify the etymology of terminology relating to anatomy and physiology.</li> </ul>
	<ul> <li>Verbalize the terms relating to medical terminology.</li> </ul>
DELIVERY METHOD	Lecture, demonstration, applied, simulated
ASSESSMENT	Academic, simulated, clinical
INSTRUCTORS	Vicars' faculty. Out-of-class contact is via email and Moodle.
COURSE SCHEDULE	Year One. Dates and schedules are available to students on their learning management system, Moodle.
TEXTBOOKS & REFERENCES	Salvo, Susan G: Massage Therapy Principles and Practice, 7th ed. Elsevier, 2023. Chapter 18, <i>Medical Terminology</i> .
	Biel, Andrew: Trail Guide to the Body, 6th ed. Books of Discovery, 2019 Linton, Dr. Corinne B: Medical Terminology, The Basics, 2000 / 2002 BarCharts Inc. Patton, K; Bell, F; Thompson, T; Williamson, P. (2022). Anatomy and Physiology, Ed. 11. Elsevier Inc.
LAST REVISION	September 2017

### Course: Ethics (1&2)

#### SUBJECT MATTER

The interpersonal skills necessary for developing an effective therapeutic relationship with a client, including ethical behaviour, professional boundaries, confidentiality, and conflict resolution.

#### **LEARNING OUTCOMES**

#### **Ethical Foundations**

- Define the Therapeutic Relationship
- Recognize the significance of Power Differentials
- Identify the signs of Transference and Countertransference
- Identify Universal Ethical Principles
  - o Identify Sources of Ethical Guidance
  - o Official Codes and Regulations
- Personal Ethics and Self-Accountability
- Employ a framework for Resolving Ethical Dilemmas

#### **Boundaries**

- Recognize Types of Boundaries
- Recognize How Boundaries Develop
- Identify Boundary Models
- Recognize Boundary Crossings and Violations
- Identify Why Boundary Crossings Occur
- Establish, Maintain, and Change Boundaries

#### **Dual and Sequential Relationships**

- What Are Dual Relationships?
- Recall An Historic Perspective
- Recognize The Range of Dual Relationships
- Examine The Benefits of Dual Relationships
- Analyze The Risks of Dual Relationships
- Examine Sequential Relationships
- Practice Minimizing Concerns
- Compare the role of teachers in The Special Case of Schools

**Dynamics of Effective Communications** 

- Recognize Communication Barriers
- Evaluate Challenging Topics of Conversation
- Assess Communications Beyond the Treatment Room

Communication Techniques and Strategies

- Demonstrate the value of Reflecting
- Demonstrate the value of Inviting Input
- Employ various learning styles
- Practice The Assertion Sequence

Sex, Touch, and Intimacy: Students will develop a culturally competent understanding of the distinctions between sex, touch, and intimacy, and learn to ethically navigate psychosexual dynamics in practice.

- A Psychosocial Overview
- Touch
  - o Exploring Touch and Culture
- Intimacy
- Sex
  - Examining Cultural Values
- Sex and Touch Therapy
- Sexual Misconduct and Sexual Harassment
- Desexualize the Touch Experience through Preparation, Language, and Behaviour

Practice Management: In this section, the student will identify, apply and practice

- Professionalism
- Scope of Practice
- Standards of Practice
- Client/Practitioner Expectations
- Time Management
- Confidentiality
- Informed Consent
- Working with Minors
- Declining Potential New Clients
- Referring Out
- Dismissing a Client
- Client Policy Statements

### The Team Approach

- Describe and discuss Office Ethics
- Describe and discuss Working for Others
- Describe and discuss Care Coordination and Case Management
- Describe and discuss Group Practices
- Describe and discuss Spas
- Describe and discuss Hospitals and Hospices
- Describe and discuss Medical Clinics

#### **Business Ethics**

- Recognize Attitudes About Money
- Compare Fee Structures
- Debate Gratuities
- Debate Barter
- Debate Gift Certificates
- Recognize Taxes
- Debate Product Sales
- Discuss Referrals
- Discuss Fraudulent Practices
- Compare and Contrast Marketing Materials
- Discuss Social Media Ethics
- Discuss Legal Issues
- Discuss Insurance Reimbursement Issues

Support Systems: In this section, the student will compare and discuss the following topics

- Supervision
- Peer Support Groups
- Mentoring
- Mastermind Groups
- Coaching
- Internships, Externships, and Apprenticeships
- Online Discussion Forums

	Working with Trauma Survivors
	<ul> <li>Comprehend the meaning of Trauma and Abuse</li> </ul>
	<ul> <li>Describe and discuss the Benefits of Touch Therapy for Survivors</li> </ul>
	<ul> <li>Identify the Prerequisites for Working with Survivors</li> </ul>
	<ul> <li>Identify and practice the Protocol for Working with Self-Disclosed Survivors</li> </ul>
	<ul> <li>Define Trauma-Informed Care</li> </ul>
DELIVERY METHOD	Lecture, demonstration, applied, simulated
ASSESSMENT	Academic, simulated, clinical
INSTRUCTORS	Vicars' faculty. Out-of-class contact is via email and Moodle.
COURSE SCHEDULE	Year one and year two. Dates and schedules are available to students on the learning management system, Moodle.
TEXTBOOKS & REFERENCES	Ben E. Benjamin, PhD, Cherie Sohnen-Moe, Ethics of Touch, 3 <sup>rd</sup> ed. Sohnen-Moe Associates, 2021.
LAST REVISION (Y1)	September 2022
LAST REVISION (Y2)	August 2024

# Course: Research (1 & 2)

Subject Matter	Types of research, research articles, and research literacy that lead to understanding how massage therapy affects the physiology and psychology of the client.
Learning Outcomes	<ul> <li>Define research.</li> <li>Discuss types of research.</li> <li>Explain the scientific method.</li> <li>Identify parts of a scientific article.</li> <li>Explain why research is important to the massage profession.</li> <li>Demonstrate research literacy skills.</li> <li>Discuss the funding of research and the importance of professional involvement.</li> <li>Describe and explain the mechanical, physiologic, and psychologic effects of massage therapy.</li> <li>Explain how massage therapy affects various systems of the body.</li> <li>List psychological aspects of massage therapy and indications for specific conditions and populations.</li> <li>Explain common misconceptions and false claims related to massage therapy treatment and effects.</li> <li>Describe the importance of keeping up to date on new massage therapy knowledge.</li> <li>Write a case report.</li> </ul>
Delivery Method	Lecture, website article search, scientific journal review
Assessment	Academic
Instructors	Vicars' faculty. Out-of-class contact is via email and Moodle.
Course Schedule	Year one and year two.
Textbooks and References	Salvo, Susan G: Massage Therapy Principles and Practice, 7th ed. Elsevier, 2023. Chapter 5, Evidence Informed Practice and Research Literacy.  Tracy Walton, 5 Myths and Truths About Massage Therapy  Other possible references:  Vicars' Reference and Research Library (on-going update and revision in Forms and Resources)
Last Revision (Y1)	September 2025
Last Revision (Y2)	November 2024

# Course: Orthopedic Assessment (1&2)

Subject Matter	
Subject Matter	To gather information and make informed decisions about treatment.
Learning Outcomes	<ul> <li>List and implement essential skills used during a client interview.</li> </ul>
	<ul> <li>Compare and contrast open-ended and closed-ended questions.</li> </ul>
	<ul> <li>Identify and implement the elements of a client intake.</li> </ul>
	<ul> <li>Identify and implement all elements of informed consent.</li> </ul>
	<ul> <li>Define scope of practice.</li> </ul>
	<ul> <li>Define and state the value of documentation.</li> </ul>
	<ul> <li>State aspects and significance of client confidentiality.</li> </ul>
	<ul> <li>Compare and contrast different documentation formats.</li> </ul>
	<ul> <li>Compare and contrast subjective and objective information.</li> </ul>
	<ul> <li>Year one: list and identify the sequence and rationale of an orthopedic assessment</li> </ul>
	<ul> <li>Year two: Identify and interpret the significant results of an orthopedic assessment</li> </ul>
	<ul> <li>Use critical thinking skills to determine an appropriate treatment plan.</li> </ul>
	<ul> <li>Recognize importance of community collaboration and interdisciplinary treatment.</li> </ul>
	<ul> <li>Identify common pulse points.</li> </ul>
	<ul> <li>Palpate common pulse points.</li> </ul>
	Monitor blood pressure.
Delivery Method	Lecture, demonstration, applied, simulated
Assessment	Academic, simulated, clinical
Instructors	Vicars' faculty. Out-of-class contact is via email and Moodle.
Course Schedule	Year one and year two. Dates and schedules are available to students on the learning management system, Moodle.
Textbooks and References	Magee, David J: <i>Orthopedic Physical Assessment</i> , 7 <sup>th</sup> ed. Saunders, an imprint of Elsevier, 2014. In-house video
	Salvo, Susan G: Massage Therapy Principles and Practice, 7th ed. Elsevier, 2023. Chapter 14, <i>Clinical Massage</i>
	In-house videos and handbooks (Forms and Resources)
Last Revision (Y1)	September 2023
Last Revision (Y2)	May 2025

### Course: Treatment Planning (1&2)

### **Subject Matter**

Scope of practice, standards of care, assessments, documentation, informed consent, treatment planning, and referrals.

Clients in different stages of their lives.

Clients with physical challenges and health-related issues.

Presence of a disease or condition that requires the therapist to postpone massage, avoid an area, or modify the client's position or the delivery of procedures or techniques.

The documented process of planning a client-centred massage treatment and plan according to client goals, subjective and objective intake information, the client's current health status, and current best evidence for practice.

External therapeutic use of all forms of water.

#### **Learning Outcomes**

- Discuss the scope of practice and standards of care.
- Describe massage-related assessments and documentation.
- Compare local, general, modified, and absolute contraindications.
- Conduct client assessments using a client interview.
- Define special populations, disability, and quality of life.
- Discuss pregnancy massage, state modifications for spa hydrotherapy, and high-risk pregnancies by trimester, for childbirth and the postpartum period.
- Discuss massage modifications for infants, children, and adolescents.
- Describe aging and its physiologic effects by body systems with their associated diseases.
- Identify massage modifications for aging adults and clients with visual, hearing, and mobility impairments, as well as mandatory reporting.
- Define informed consent and state the benefits and potential risks related to massage.
- Explain treatment planning and the importance of evidence in a massage practice.
- Utilize standardized client documentation formats and explain how to refer a client to a healthcare provider for medical evaluation.
- Identify the indications, benefits, and appropriate referral for selected adjunctive therapies. See the addendum: Adjunctive Therapies for a list.
- Define hydrotherapy.

	body of hydrotherapy.
	<ul> <li>Describe the therapeutic effects and benefits of heat and cold on the body.</li> </ul>
	<ul> <li>Describe the indications for the therapeutic application of heat and cold on the body.</li> </ul>
	<ul> <li>Describe contraindications for the therapeutic application of heat and cold on the body.</li> </ul>
	<ul> <li>Demonstrate the application of therapeutic heating, cooling, ice massage, and contrast treatments.</li> </ul>
	<ul> <li>Identify and implement the client's goals for hydrotherapy, massage, and exercise into a treatment plan.</li> </ul>
	<ul> <li>Identify and instruct the client goals for self-care.</li> </ul>
	<ul> <li>Reassess and adapt treatment plan as needed according to client goals and therapeutic outcomes.</li> </ul>
S	See Inter-Jurisdictional Practice Competencies and Performance Indicators for Massage Therapists at Entry-to-Practice <i>Appendix</i> for list of commonly occurring conditions
Delivery Method	<ul> <li>Lecture, demonstration, applied, simulated</li> </ul>
Assessment	<ul> <li>Academic, simulated, clinical</li> </ul>
Instructors	Vicars' faculty. Out-of-class contact is via email and Moodle.
	Year one and year two. Dates and schedules are available to students on the learning management system, Moodle.
References	Salvo, Susan G: Massage Therapy Principles and Practice, 7 <sup>th</sup> ed. Elsevier, 2023. Chapter 10, <i>Professional Standards</i> , Chapter 11, <i>Special Populations</i> , Chapter 12, <i>Hydrotherapy</i> , Chapter 14, <i>Clinical Massage</i> ,
	Salvo, Susan G: Pathology for Massage Professionals, 5 <sup>th</sup> ed. Elsevier, 2022
	In-house handbooks (Forms and Resources)
Last Revision (Y1)	September 2023
Last Revision (Y2)	May 2025

# Course: Self-Care (2)

Subject Matter	Techniques and strategies for self-care.
Learning Outcomes	Identify the recovery process relevant to the client. Determine and demonstrate appropriate progression of active and passive exercises to maintain, improve, and restore client health. Incorporate the appropriate exercises into a treatment and self-care plan.
	For the following
	Stretching
	Range of motion
	Strengthening exercises
	Proprioception exercises
	<ul> <li>Functional exercises to restore capacity in activities of daily living</li> </ul>
	Students will be able to
	<ul> <li>Demonstrate knowledge of indications, safety considerations, effects and outcomes</li> </ul>
	Demonstrate and direct the client in the exercises
	Incorporate the strategies into treatment
	<ul> <li>Modify the exercises based on client history, presentation, and response</li> </ul>
Delivery Method	Lecture, demonstration, applied, simulated
Assessment	Academic, simulated, clinical
Instructors	Vicars' faculty. Out-of-class contact is via email and Moodle.
Course Schedule	Year two. Dates and schedules are available to students on the learning management system, Moodle.
Textbooks and References	In-house handbooks (Forms and Resources)
	Salvo, S. Salvo, Susan G: Massage Therapy Principles and Practice, 7 <sup>th</sup>
	ed. Elsevier
	In-house video resource on Moodle
Last Revision	May 2025

## Course: Business (2)

Subject Matter	Business, marketing, accounting, and finance.
Learning Outcomes	<ul> <li>Write a vision and mission statement.</li> </ul>
	<ul> <li>Define professionalism and list qualities of a professional massage therapist.</li> </ul>
	<ul> <li>List employment opportunities for massage therapists and explain differences between an employee and an independent contractor.</li> </ul>
	<ul> <li>Compare and contrast types of business entities.</li> </ul>
	<ul> <li>Outline pertinent licenses, permits, and registrations required to operate a professional practice.</li> </ul>
	<ul> <li>List types of insurance and describe their purpose.</li> </ul>
	<ul> <li>Identify several marketing and advertising strategies.</li> </ul>
	<ul> <li>Prepare a resume and curriculum vitae.</li> </ul>
	<ul> <li>List business resources and explain their importance.</li> </ul>
	<ul> <li>Describe a typical day for a massage therapist.</li> </ul>
	<ul> <li>Create a plan to avoid professional burnout.</li> </ul>
	<ul> <li>Delineate financial aspects of the business, ex. fee determination, start-up costs, managing bad accounts.</li> </ul>
	<ul> <li>List ways to diversify income.</li> </ul>
	<ul> <li>Discuss insurance reimbursement for professional services.</li> </ul>
	<ul> <li>Discuss the role of professional associations and provincial regulatory bodies.</li> </ul>
	<ul> <li>Describe aspects of accounting practices, such as the use of checking accounts, petty cash payments, and payroll.</li> </ul>
	<ul> <li>List financial reports and describe their purpose.</li> </ul>
	<ul> <li>Identify tax responsibilities and appropriate tax deductions.</li> </ul>
	<ul> <li>Develop a business plan.</li> </ul>
Delivery Method	Lecture
Assessment	Academic, clinical
Instructors	Vicars' faculty. Out-of-class contact is via email and Moodle.
Course Schedule	Year two. Dates and schedules are available to students on the learning management system, Moodle.
Textbooks and References	Salvo, Susan G: Massage Therapy Principles and Practice, 7th ed. Elsevier, 2023. Chapter 17, <i>Business Practices</i> .
Last Revision	May 2025

# Course: Supervised Clinical Experience (1&2)

Subject Matter	Practical application of theory and massage techniques performed in the context of a therapeutic relationship while in a supervised clinical setting.  Module clinics and public clinics (general public); special conditions
	(clients diagnosed with a variety of medical conditions); outreach (variety of off-campus settings)
Learning Outcomes	<ul> <li>Demonstrate and apply the competencies learned in <i>Treatment Planning</i>.</li> </ul>
	<ul> <li>Demonstrate and apply the competencies learned in Orthopedic Assessment.</li> </ul>
	<ul> <li>Demonstrate and apply the competencies learned in Therapeutic Relationship.</li> </ul>
	<ul> <li>Demonstrate and apply the competencies learned in Self-Care.</li> </ul>
	<ul> <li>Demonstrate application of critical thinking skills with clients.</li> </ul>
	<ul> <li>Demonstrate application of critical thinking skills and collaboration with staff, faculty, and peers.</li> </ul>
	<ul> <li>Demonstrate use of electronic scheduling and booking system.</li> </ul>
Delivery Method	Applied: module clinic year one
	Applied: special conditions year two
	Applied: public clinic year one and two
	Applied: outreach year one and two
Assessment	Academic, simulated, clinical
Instructors	Faculty supervised at all times
Course Schedule	Year one and year two
Textbooks and References	In-house Objectives Journal
Last Revision	June 2025

## ADDENDUM: List of bony landmarks and muscles

## Bony landmarks

acromioclavicular joint	greater tubercle of	sesamoid bones: 1st MTP joint
	humerus	
coracoid process	inferior angle of scapula	external occipital protuberance
spine of scapula	sternoclavicular joint	lesser tubercle of the humerus
lateral epicondyle of humerus	medial border of scapula	acromion
superior angle of scapula	infraglenoid tubercle	supraglenoid tubercle
infraspinous fossa	supraspinous fossa	subscapular fossa
clavicle	intertubercular groove	lateral border of the scapula
lesser tubercle of the humerus	hook of hamate	olecranon process
pisiform	head of radius	Lister's tubercle
lateral epicondyle	olecranon fossa	styloid process of ulna
head of ulna	lateral supracondylar ridge: humerus	medial supracondylar ridge: humerus
medial epicondyle of humerus	5th metacarpal	styloid process of radius
shaft of 1st proximal phalange	scaphoid	lunate
triquetrum	pisiform	trapezium
trapezoid	capitate	hamate
spinous process of C-1	jugular notch	xiphoid process
1st rib	TVP of cervical vertebrae	manubrium
deltoid tuberosity	spinous process of C-7	spinous process of T-12
iliac crest	costal cartilage of ribs	lamina groove
body of sternum	12th rib	spinous process of T-7
anterior superior iliac spine	ischial tuberosity	gluteal tuberosity
pubic crest	greater trochanter	sacroiliac joint
iliac fossa	posterior superior iliac spine	anterior inferior iliac spine

sacrum	соссух	patella
head of fibula	adductor tubercle	navicular tubercle
lateral malleoli	medial malleoli	peroneal trochlea
tibial tuberosity	tibial plateau	medial epicondyle of femur
tuberosity of 5 <sup>th</sup> metatarsal	sustentaculum tali	shaft of tibia
pes anserinus tendon	lateral epicondyle of femur	calcaneus
occiput	parietal bone	zygomatic arch
sphenoid bone	mandible	external occipital protuberance
temporal bone	styloid process	nasal bone
ramus of mandible	condyle of mandible	coronoid process of mandible
superior nuchal line	mastoid process	frontal bone
maxilla	angle of mandible	hyoid bone
talus	navicular	cuneiforms
cuboid	femur	humerus
radius	ulna	tibia
fibula	trachea	external auditory meatus
phalanges	metacarpals	metatarsals
lamina groove of vertebrae	ethmoid bone	lacrimal bone

## List of muscles to palpate origin, insertion, and describe action

deltoid	flexor carpi ulnaris	pectineus
trapezius	flexor digitorum superficialis	gracilis
latissimus dorsi	flexor digitorum profundus	tensor fasciae latae
teres major	pronator teres	iliotibial tract
supraspinatus	pronator quadratus	sartorius
infraspinatus	supinator	piriformis
teres minor	splenius capitis	psoas major

subscapularis	splenius cervicis	iliacus
rhomboid major	quadratus lumborum	gastrocnemius
rhomboid minor	rectus abdominis	soleus
levator scapula	external oblique	plantaris
serratus anterior	internal oblique	popliteus
pectoralis major	transverse abdominis	peroneus longus and brevis
pectoralis minor	diaphragm	peroneus longus and brevis
subclavius	serratus posterior superior	tibialis anterior
biceps brachii	serratus posterior inferior	extensor digitorum longus
triceps brachii	rectus femoris	extensor hallucis longus
coracobrachialis	vastus medialis	tibialis posterior
brachialis	vastus lateralis	flexor digitorum longus
brachioradialis	vastus intermedius	flexor hallucis longus
extensor carpi radialis longus	biceps femoris	sternocleidomastoid
extensor carpi radialis brevis	semitendinosus	anterior scalene
extensor carpi ulnaris	semimembranosus	middle scalene
extensor digitorum	gluteus maximus	posterior scalene
anconeus	gluteus medius	masseter
extensor indicis	gluteus minimus	temporalis
flexors of wrist and hand	adductor magnus	platysma
flexor carpi radialis	adductor longus	occipitofrontalis
palmaris longus	adductor brevis	medial and lateral pterygoids

## List of muscles to identify name, action, and general location

opponens pollicis	oblique capitis superior	lumbricals
adductor pollicis	oblique capitis inferior	geniohyoid
abductor pollicis brevis	external intercostals	mylohyoid
flexor pollicis brevis	internal intercostals	stylohyoid
abductor pollicis longus	intertransversarii	digastrics
extensor pollicis longus & brevis	interspinalis	sternohyoid
flexor pollicis longus	quadratus femoris	sternothyroid
lumbricals	obturator internus	thyrohyoid
palmar interossei	obturator externus	omohyoid
dorsal interossei	gemellus superior	longus capitis
hypothenar eminence	gemellus inferior	longus colli
abductor digiti minimi	extensor digitorum brevis	
flexor digiti minimi brevis	flexor digitorum brevis	
opponens digiti minimi	abductor hallucis	
spinalis	abductor digiti minimi	
longissimus	extensor hallucis brevis	
Iliocostalis	flexor hallucis brevis	
multifidi	adductor hallucis	
rotatores	flexor digiti minimi	
semispinalis capitis	quadratus plantae	
rectus capitis posterior major	plantar interossei	
rectus capitis posterior minor	dorsal interossei	

## **ADDENDUM: Adjunctive Therapies**

Aromatherapy	Electrical therapy techniques including:
Extracorporeal Shockwave Therapy	<ul> <li>Frequency Specific Microcurrent (low</li> </ul>
Interferential Current (IFC) Therapy	energy protocol only)
Low Level Cold Laser Treatment	<ul><li>Low Intensity Laser Therapy</li></ul>
TENS	<ul><li>Pulsed High Frequency</li></ul>
Cranio-sacral therapy	Therapeutic Ultrasound
Strapping and taping	Visceral manipulation
Bowen Technique	Acupuncture
Osteopathy	Active Release Technique
Fire Cupping	Graston Technique
Trigenics	Watsu

## **ADDENDUM: Outside Scope**

This is not an exhaustive list. Refer to the professional massage associations.

Aboriginal Healing	Acupuncture
Allergy Testing	Ayurvedic Medicine
Bach Flower Therapy	Biodynamics
Biofeedback	Colon Hydrotherapy
Dry Needling	Endermology
Herbology	Homeopathy
Intramuscular Stimulation (IMS)	Iridology
Lypossage	Metaphysical Healing
Nutrition Counseling	Orthobionomy
Orthotics	Osteopathy
Personal Training	Psychotherapy
Raindrop therapy	Reiki levels 2 and higher
Religious/Spiritual Healing	Sound Therapy
Success Through Alignment Restoration	Traditional Chinese Medicine
(S.T.A.R.)	