



**I. COURSE DESCRIPTION:**

In this course students will be introduced to the principles of biomechanical kinesiology and the therapeutic use of remedial exercise. Student will apply their knowledge of the structure and function of the musculoskeletal system. This course will also familiarize students with the implication of massage practice with infants and children and with the work place.

**II . LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course the student will be able to:

1. Compare and contrast the health and healing role of remedial exercise within massage therapy practice.
  - a) Describe the goal of remedial exercise as it applies to the Massage Therapist's scope of practice
  - b) Identify the fundamental principles of the biomechanics of human movement
    - i) Principles of Kinesiology:
      - Kinematics
        - spacial reference system
        - description of body segments in space
        - displacements (angular and linear)
        - velocity and acceleration
        - torque
        - centre of rotation of joints
      - Kinetics
        - muscle forces
        - ground reaction forces
        - gravitation forces
        - lever systems (emphasize)
        - resultant musculoskeletal forces
        - force vectors
        - centre of gravity
      - Anthropometry
        - mass density and inert properties
        - location of mass centre
        - centre of rotation
        - multi joint muscles
        - mechanical advantage of muscle

**II . LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

- ii) Muscle/Joint/Ligament Biomechanics
  - motor unit
  - size principle
  - slow and fast twitch classification
  - muscle tension: length  
velocity
  - eccentric versus concentric contractors
  - role of articulation surfaces in stabilizing joints

iii) Biomechanics of Balance and Equilibrium

- iv) Mechanical Work, Energy and Power
  - internal versus external work
  - positive versus negative work
  - mechanical energy transfer

c) Describe the technique, effects, uses, indications, contraindications and possible negative side effects of various remedial exercises.

- i) Range of Motion
  - passive
  - active
  - active assisted (self, mechanical)
- ii) Stretching
  - passive
  - self stretching
- iii) Resistive Exercise
  - isometric
  - isotonic
  - isokinetic
  - manual and mechanical
- iv) Aerobic Exercise
  - safe versus unsafe techniques

d) Describe how the following conditions affect the application of therapeutic exercise:

- posture
- cardio-respiratory and vascular
- osteoporosis
- arthritis
- neuropathy
- fractures
- obesity
- myofascial pain syndrome
- trauma and surgery
- age
- nutritional status
- systemic diseases
- fitness level

**II . LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

- e) Describe the technique, effects, uses, indications, contraindications and possible negative side effects of:
    - stretch/hold/relax advanced massage technique (P.N.F.).
    - joint mobilization (Grade I,II,III,IV)
    - trigger point release
    - cyriax friction therapy protocol
  - f) Explain short-term and long-term goals of remedial exercise given clinical situations.
  - g) Design and defend remedial exercise programs given specific clinical situations which promote muscle strength and flexibility for:
    - shoulder                      - knee
    - elbow                              - ankle/feet
    - wrist and hand              - spine
    - hip
  - h) Design remedial exercise programs that progress through stages of injury and inflammation.
  - i) Evaluate remedial exercise programs to determine effectiveness and alter programs in the case of negative reactions.
  - j) Design and defend a safe exercise program for an uncomplicated pregnancy/post partum for the following selected conditions:
    - diastasis recti
    - low back pain
    - pelvic floor dysfunction
2. Compare and contrast the healing role of massage therapy practice when treating infants and children.
- a) Review physiological and psychosocial development of childhood.
  - b) Describe effective communication strategies when dealing with young children (verbal and non verbal).
  - c) Describe the benefits, uses and contraindications of massage on infants and children.
  - d) Discuss adaptation/modification to massage techniques and the environment relevant to young children.

**II . LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

- e) Outline a full body treatment for use with infants and young children.
  - f) Outline effective treatment plans for common health concerns of young children.
    - colic
    - sinus congestion/headache
    - growing pains
    - insomnia
    - constipation
    - tension headache
  - g) Recognize signs and symptoms of child abuse including when and where to report.
3. Describe holistic approaches which can reduce the incidence of work place injuries.
- a) Describe common ergonomic issues in the work place which can lead to preventable injuries.
  - b) Describe holistic preventative approaches relevant to massage practice which can reduce the incidence of work place injuries.
  - c) Review the technique, effect and use of “on-site”/corporate massage.
  - d) Describe the expanding role of the Massage Therapist in the work place of large companies/corporations.
  - e) Design a massage clinic considering ergonomic principles.

**III. TOPICS:**

- 1. Principles of Kinesiology
- 2. Remedial Exercise
  - range of motion
  - stretching
  - resistive
- 3. Advanced Technique
  - stretch/hold/relax
  - joint mobilization (1-4)
  - trigger point release
  - cyriax friction therapy protocol
- 4. Designing and Evaluating Progressive Remedial Exercise Programs
- 5. Massage in Infancy and Childhood
- 6. Ergonomic Issues in the Workplace

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Rattray, F., and Ludwig, L. (2000) Clinical Massage Therapy: Understanding, Assessing and Treating Over 70 Conditions, Talus Incorporated.

**V. EVALUATION PROCESS/GRADING SYSTEM:**

1. The passing grade for this course is 60%
2. The evaluation system will be explained by the teacher within the first two weeks of the course.

***The following semester grades will be assigned to students in postsecondary courses:***

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies &amp; Procedures Manual – Deferred Grades and Make-up</i> ).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades.	

**VI. SPECIAL NOTES:**

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

**VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

**VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.