

INNOVATIVE CURRICULAR DESIGN & BEST PRACTICES FOR PREPARING EXERCISE SCIENCE PROFESSIONALS

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Objectives

- Present gaps between college course-work & young professionals preparedness in exercise professions
- Discuss future of exercise science professionals
- Describe Purdue's evolving curricular model
- Discuss best practices for exercise science curriculum & brainstorm innovative curricular design

Current State of Exercise Science Curriculums:

Various degree titles/pathways to create same professionals

Examples:

- Exercise science
- Exercise and sport science
- Exercise physiology
- Kinesiology
- Exercise science w/ specialization in exercise physiology
- Physical education w/ specialization in exercise science

Differences in name of department and title of degree

- > 30 different departments names and > 9 different academic degrees in a random sample of 62 institutions (Boone, PEP 2000)
- Similar results from recent analysis of 10 institutions

→ Confusion created amongst future and current undergrad students

Current State of Exercise Science Curriculums:

Varying Coursework Included in Degree Pathways:

- Anatomy/physiology
 - Biomechanics
 - Exercise physiology
 - Exercise/sport psychology
 - Wellness/fitness courses
 - Physical education
 - Adult fitness, youth fitness, special populations
 - Exercise testing & exercise prescription/programming
 - Health promotion, public health
 - Clinical courses
 - Courses w/ experiential learning emphasis
- Any or all of these courses could be included in a degree path
- Rarely opportunities for specialization/focus on future career path

Current State of Exercise Science Curriculums:

Varying Coursework Included in Degree Pathways:

- Often follow standards set by professional organizations:
 - ACSM (American College of Sports Medicine)
 - ASEP (American Society of Exercise Physiologists)
 - NSCA (National Strength & Conditioning Association)
 - NASPE (National Association for Sport and Physical Education)

- Issue:
 - Varying 'standards'/objectives/criteria for different organizations
 - Lack of adherence to stated curricular focus
 - Accreditation?

Elder et al. J Strength Cond. Res. 2003

Current State of Exercise Science Curriculums:

Young Professionals Predicament

- Preparedness for entry-level career?
- Competitive candidate for grad/professional school?

Ultimately, the degree path wasn't what they thought it was....

Left wondering... where do they go from here



Future of Exercise Science Professionals

Causes of the Young Professionals Predicament:

- Lack of licensing
- Multiple certifying organizations...



AMERICAN SOCIETY
OF EXERCISE PHYSIOLOGISTS



ACE →

- Inconsistent degree paths & curriculum
 - Inconsistent educational background of young professionals
 - confuses future employers & job market
 - Varying job titles, qualifications, roles/responsibilities, compensation, etc.
- Instability w/ in the profession
- Often not viewed as specialists
 - In danger of being replaced by other allied health professionals

Purdue's Curricular Model

Department of Health & Kinesiology Overview

Mission & Areas of Specialty:

Mission: Excel in discovery, learning, and engagement activities within sciences of health, exercise, human movement & physical activity, and sports behavior & performance across the lifespan

Exercise Physiology

Biomechanics, Motor control & Motor development

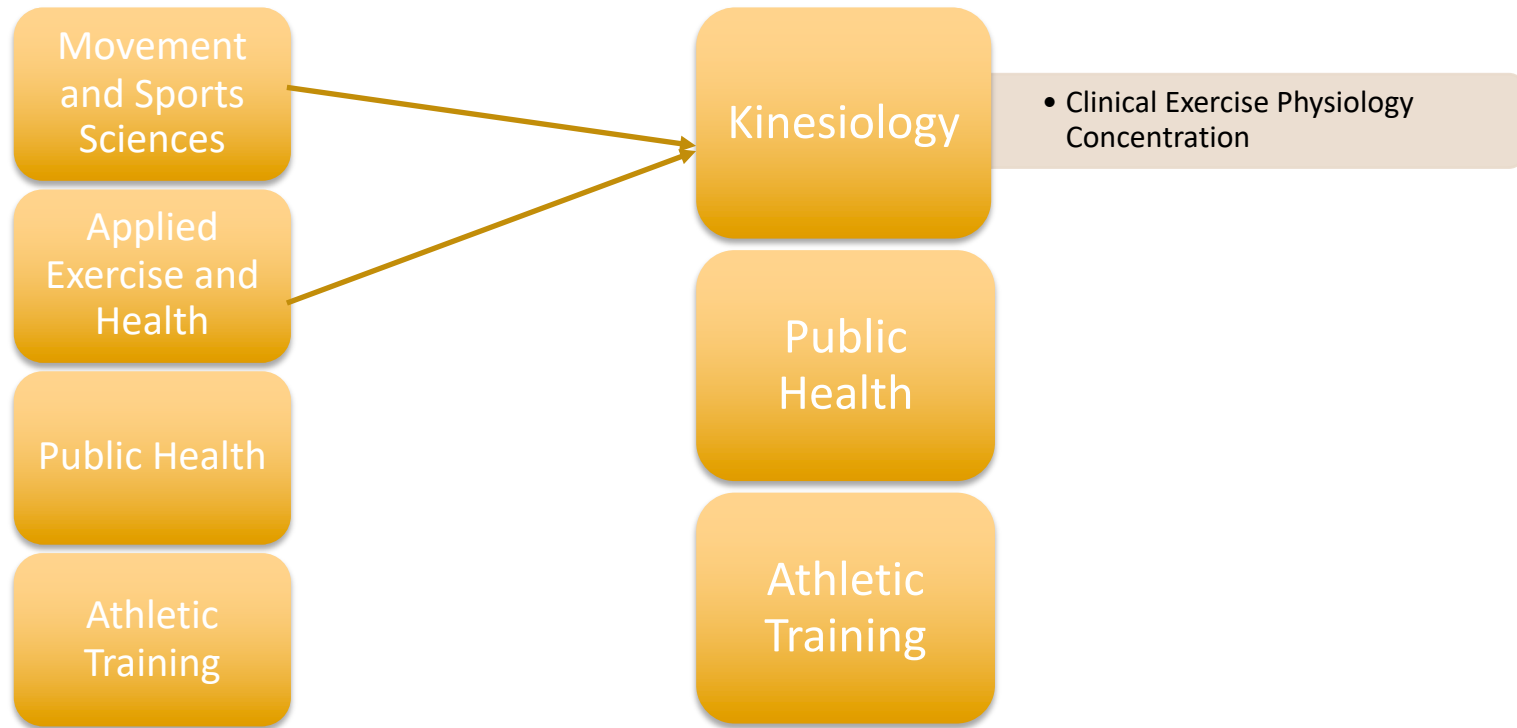
Athletic Training

Public Health

Sports Psychology

Purdue's Curricular Model

Degree Program Changes



Health and Human Sciences
Department of Health and Kinesiology

Purdue's Curricular Model

Reasons for Change in Degree Programs

Student Benefit

- Guidance for future
- Student preparedness
- Career / degree flexibility
- Course Options
- Marketability

Departmental Benefit

- Efficient use of faculty lines
- Efficient use of faculty time
- Positive impact: improves program reputation/visibility

Purdue's Curricular Model

New Curriculum Goals



Purdue's Curricular Model

Clinical Exercise Physiologist Concentration

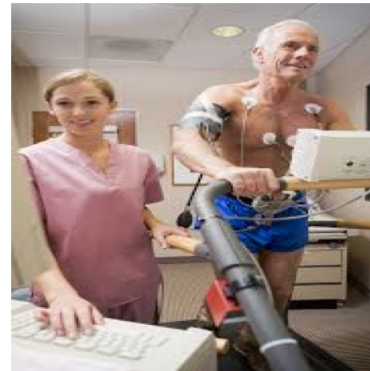
OPTIONAL CONCENTRATION IN CLINICAL EXERCISE PHYSIOLOGY (CEXP)

(34 credits - includes 14 credits of Kinesiology Selectives)

- ___ (2) HK 22100 Foundations for the Fitness Professional (prerequisite: HK 10000)
- ___ (3) HK 26100 Applied Anatomy and Kinesiology (prerequisite: BIOL 20400)
- ___ (1) HK 26900 Career Development and Preparation for the Health and Fitness Fields
- ___ (2) HK 31800 Strength & Conditioning and Exercise Instruction Across the Lifespan (prerequisite: HK 22100) **Fulfills Kinesiology Selective**
- ___ (2) HK 41100 Clinical Applications of Health/Fitness Concepts III (prerequisite: HK 42200; HK 42400, HK 46900)
- ___ (3) HK 42100 Health Screening & Fitness Evaluation and Design (prerequisite: HK 36800) **Fulfills Kinesiology Selective**
- ___ (3) HK 42200 Basic Concepts in Exercise Program Design (prerequisite: HK 42100) **Fulfills Kinesiology Selective**
- ___ (3) HK 46900 Exercise Testing & Prescription in Special Populations (prerequisite: HK 42100) **Fulfills Kinesiology Selective**
- ___ (3) HK 48500 Electrocardiography, Cardiovascular Disease, & Exercise (prerequisite: HK 42100) **Fulfills Kinesiology Selective**
- ___ (9) HK 49201 Internship for Exercise and Health (400 hour internship; prerequisites: HK 26900, HK 411, Consent of Instructor)
- ___ (3) NUTR 30300 Essentials of Nutrition

Purdue's Curricular Model

Clinical Exercise Physiology Concentration: Experiential Learning



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Best Practices for Exercise Science Curriculum

Create mainstream title/s for profession

Exercise Physiology vs Exercise Science

vs. Exercise and Health, Exercise and Sport Sciences, Physical Education with specialty in exercise science...

Compare to other Allied Health Professions

Physical Therapists

Athletic Trainers

Dental Hygienists

Medical Assistants

... these college degrees all have the same title and almost identical course content

Best Practices for Exercise Science Curriculum

Create mainstream course content for degree path

Foundational Coursework: Anatomy & Physiology, Exercise Physiology, Biomechanics, Motor Behavior/Motor Control,

- Health screening/assessments/testing
- Exercise prescription/programming
- Lifestyle modifications/counseling/exercise psychology
- Nutrition / sports nutrition
- Special populations/chronic conditions
- Stress testing and ECG
- Experiential learning courses/opportunities*
 - Courses designed to incorporate instructing/training
 - Fieldwork experience, internships, clinical rotations

Best Practices for Exercise Science Curriculum

Innovative Curricular Design Ideas Thoughts/ Discussion

- Standard title for degree path: Exercise Physiology
 - Ideas/thoughts?
 - Necessary?
- Curricular requirements for degree path
 - What course content is necessary vs optional?
- Experiential Learning course-work
 - Essential?
 - In what context should it be implemented?
- Is accreditation the answer ? (the only answer?)
 - Exphys/Ex sci: CAAHEP - CoAES
 - Clin Ex Phy: ASEP





THANK YOU

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