Qualifications for TA/TM Positions in the Department of Biomedical Physiology and Kinesiology

The Department of Biomedical Physiology and Kinesiology includes a wide range of specializations and, in order to be appointed, a person must have sufficient knowledge in the discipline of the course to interpret the course material, as demonstrated by either having a strong performance in the course or an equivalent, or thorough knowledge of the discipline and registration in a graduate degree in the discipline or applicable equivalent.

Additional Requirements for Specific Courses

W Courses (BPK 180W, 304W and 408W):
As these are writing-intensive courses, some marking TAs may be responsible for providing feedback on written work. For appointment to a position responsible for teaching writing in the discipline, applicants must demonstrate above average writing ability, sufficient to assess and critique written work. Applicants may be asked to provide writing samples or other evidence of writing proficiency. TA will be required to attend a W workshop or equivalent.

The following is a list of additional qualifications:

BPK 141C requires the TM to have demonstrable knowledge of fitness conditioning programming. Typically the TM would usually have previously taken a strength and conditioning course and ideally a basic exercise physiology course.

Specifically the TM should

- understand fundamental movement patterns and resistance training exercises.
- understand the design of basic resistance training (RT) program design and also more advanced split routine and block periodized RT programs.
- Understand cardiovascular physiology and the effect aerobic training programs has on this system and human health.
- understand the design of aerobic conditioning programs.
- understand human energy systems and the design of high intensity interval training programs.
- have knowledge of the human musculoskeletal system related to not only RT and aerobic exercise movements, but also myofascial release, joint distraction, and stretching techniques.
- understand sports nutrition and ergogenic aids.
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**BPK 142** requires the TA to have a current CPR certificate. Please note that as this is a first year survey course, a broad range of subject matter is taught – anatomy, biomechanics, anthropometry, exercise physiology, environmental physiology, neural control of movement, and motor learning. The TA will need to have knowledge in all of these areas.

**BPK 143** requires the TA to have a current CPR certificate and demonstrable knowledge of fitness conditioning programming. They must have sufficient knowledge in the discipline of the course to interpret the course material and the ability to teach/coach practical components of the course. Typically the TA would usually have previously taken a strength and conditioning course and ideally a basic exercise physiology course. In addition, the TA must be physically fit enough to demonstrate functional movements and participate in exercise sessions.

Specifically the TA should

- understand fundamental movement patterns and resistance training exercises.
- be able to demonstrate and describe proper squat and deadlift technique, discuss common movement errors and the corrections (coaching cues) for those movements.
- understand the design of basic resistance training (RT) program design and also more advanced split routine and block periodized RT programs.
- understand cardiovascular physiology and the effect aerobic training programs has on this system and human health.
- understand the design of aerobic conditioning programs.
- understand human energy systems and the design of high intensity interval training programs.
- have knowledge of the human musculoskeletal system related to not only RT and aerobic exercise movements, but also myofascial release, joint distraction, and stretching techniques.
- understand sports nutrition and ergogenic aids.

**BPK 180W** – The TA must have, at minimum, an introductory knowledge of ergonomic principles and demonstrated ability to conduct an ergonomic evaluation in the workplace.

**BPK 201** requires the TA to have a good understanding of Newtonian mechanics as it applies to the human body. The TA should understand biomechanical research methods and analyses. They will help students use formal problem solving and critical thinking skills to make observations and draw conclusions about human movement. The TA should have a good grasp of anatomy to be able to describe skeletal muscle mechanics and connective tissue mechanics.

**BPK 207** requires the TA to have experience in motor learning, sensorimotor control and/or systems-level neuroscience.
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**BPK 208** – Applicants must have taken BPK 205 or equivalent, and have experience (relevant coursework or a degree) in the field of biomedical engineering (or engineering).

**BPK 241** – The TA must have completed BPK 241 and 326, or equivalent courses. In addition, the TA requires a current CPR certificate and a current Sports First Responder Certification. Previous experience as a team trainer is highly desirable.

**BPK 303** – The TA is required to have demonstrated experience with anthropometrics as well as assessment of human movement. The TA must have completed BPK 326 or equivalent course. Previous clinical experience in anthropometric setting is highly desirable.

**BPK 304W** – The TA position requires demonstrated experience conducting statistical analysis and using SPSS and Excel at an intermediate level.

**BPK 325F** – The TA is required to have demonstrated experience with human anatomy, comparative anatomy, and vertebrate dissection. The TA must have demonstrated excellent dissection skills in an equivalent anatomy course. Previous experience teaching in an anatomy lab is highly desirable.

**BPK 326** – The TA is required to have demonstrated experience with human anatomy, comparative anatomy, and vertebrate dissection. The TA must have demonstrated excellent dissection skills in an equivalent anatomy course. Previous experience teaching in an anatomy lab is highly desirable.

**BPK 340** requires that the scriptmarker must attend one hour of lecture on four separate occasions during the semester.

**BPK 343** – The marker must have demonstrable knowledge of exercise prescription and fitness assessment and completed BPK 343 or equivalent course.

**BPK 375** requires the marker to have experience in upper-division embryology and endocrinology; recent completion of BPK 375 is considered a strong asset.
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**BPK 407** requires the TA to have a current CPR certificate. The TA should have demonstrated experience with most of the testing protocols used in the course. This includes extensive experience using the iWorx Human Physiology Testing kit. Successful completion of BPK 407 is preferred.

**BPK 408W** – This is an upper-level cell biology/molecular physiology lab course, and the TA will be working closely with the instructor to support the students. Techniques we would need the TA have practical experience with include (most or all of): PCR, fluorescence microscopy, cell culture, basic molecular biology techniques. To give effective feedback on lab reports and student independent projects, the TA should have a general understanding of cell biology and regulation of gene expression; and strong writing/communication skills. Theoretical or practical knowledge of electrophysiology (e.g. BPK306 or BISC307 or similar) would be an asset.

**BPK 409** – The TA must have completed two of the following three courses: BPK 301, 308 and 407, or equivalent courses. The TA should have demonstrated experience with: systems physiology, biomechanics, wearable computing, or, microcontrollers, wearable computing, repository management, Python, machine learning.

**BPK 415** requires the marker to have an advanced degree in neuroscience or very closely related field, extensive research experience directly related to a significant portion of the primary course topics, and have used several of the techniques or equipment discussed.

**BPK 420** *(Cell & Molecular Vascular Physiology)* requires the marker to advance knowledge of vascular physiology. Experience in BPK 305 or similar knowledge *(3rd/4th level)* of vascular physiology would be an asset.

**BPK 426** is an upper-level functional neuroanatomy course. The TA will help students interpret and evaluate recent research in neuroscience, and will facilitate discussion of research articles in a journal-club format. In addition, the TA will work with the instructors to evaluate students’ ability to distill and present research findings effectively, in both a one-page written scientific summary and a 10-minute conference-style presentation. In order to support and evaluate students effectively, the TA needs to have sufficient knowledge of Neuroanatomy and Neuroscience, and very strong skills in oral and written scientific presentation, demonstrated by evidence of research and instruction experience in those fields.

**BPK 443** – The TA will have knowledge, skills and experience in the process of evidence-based practice (including systematic literature searching and formal critical appraisal of studies) as well as knowledge of exercise prescription equivalent to that covered in BPK 343.
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**BPK 446** requires the marker to have advanced knowledge of Neuroscience and Immunology and evidence of experience in those fields preferably with a graduate degree.

**BPK 448** – In order to be qualified to mark BPK 448, candidates must be familiar with current and emerging approaches that can restore or replace key functions of affected muscles or organs, including advanced neuroprosthetic therapies that use targeted electrical stimulation to protect, restore or enhance voluntary control of basic functions and/or support independence in activities of daily living, and their relative risks, ethics, costs, & benefits.

**BPK 458C** – Completion of an undergraduate degree in a subject area related to medicine, physiology, pathology or pharmacology. In addition:
- Demonstrated experience providing instruction online and face-to-face courses at the undergraduate level.
- Advanced knowledge of cardiovascular disease.
- Experience teaching, assessing, and facilitating discussion of interdisciplinary topics related to medicine, physiology, pathology, pharmacology, biochemistry, and disease prevention/health promotion to foster critical thinking in these fields.
- Ability to work independently and as part of a multi-departmental collaboration.

**BPK 481** – The TA is required to have demonstrated experience with human anatomy and musculoskeletal conditions; applicants must have taken BPK 326 or equivalent anatomy course. The TA must have completed BPK481 or equivalent course. Previous clinical experience in an orthopaedic setting is highly desirable.