

**Introduction**

We welcome you to the Neuromotor Science (NMS) Graduate Program at Temple University. The study of human movement, both as an outcome of health and functioning and as a means to understand the mechanisms underlying neuromotor system integration and behavior, is foundational to many health professions. The skills needed to be successful in fields of related study require fluency across the disciplines of engineering, kinesiology, neuroscience, and rehabilitation. The need exists for rigorously trained scientists with interdisciplinary training in neuromechanics, neurobiology, and biomechanics of the sensorimotor system, and the impact of health conditions, disease, and disability on human movement. Our Neuromotor Science (NMS) program trains scientists to advance the science of neuromotor control and biomechanics of human posture and movement in individuals across the lifespan and spectrum of health and disability levels. The M.S. in Neuromotor Science (MS NMS) program is designed for individuals in the fields of Engineering, Exercise Science, Kinesiology, Occupational Therapy, Physical Therapy, Rehabilitation Science, and the like, preparing them to:

- advance the science and understanding of neuromotor processes, including assessment and evaluation of movement, neuromotor function and integration, and its impact on movement on health, functioning, and disability, and
- contribute to the development of interventions to improve human movement, particularly posture and locomotor control and function across the lifespan.

We have prepared this Handbook to help guide your academic and professional development as you progress through the Program. We believe that successful achievement of your goal to become a neuromotor scientist will be achieved through the mutual efforts of the faculty, administration, staff, and students. As such, we have constructed and adopted policies intended to assist in your development by assuring the highest quality professional education possible. Such topics as programs of study, admission standards and procedures, financial aid, and graduate faculty are covered. Full details of policies and procedures governing graduate programs, including the NMS program, at Temple University can be found at [http://www.temple.edu/grad/policies/gradpolicies.htm](http://www.temple.edu/grad/policies/gradpolicies.htm) for additional information. Graduates school forms can be accessed at: [http://www.temple.edu/grad/forms/](http://www.temple.edu/grad/forms/)

Although advisors, faculty resources, and other members of the department and professional staff are here to assist you through various methods of contact, the final responsibility for compliance with all policies ultimately rests with you. All students who are enrolled in the NMS graduate programs are expected to comply with all policies and standards of scholarship and academic performance as established by Temple University, the College of Public Health (CPH), and the Departments of Kinesiology (KN) and Physical Therapy (PT).

**Program Contact Information**

If you have questions that are not answered in these materials, contact the NMS Graduate Program Director:

**Dr. Carole A Tucker**, PhD
Department of Physical Therapy, Jones Hall 617
Temple University, 3307 North Broad St, Philadelphia, PA 19140
215.707.4877
carole.tucker@temple.edu (email preferred mode of contact)

For administrative or application questions, please contact NMS Program Student Services Coordinator:

Sarah M. Carroll
Student Services Coordinator,
College of Public Health: Physical Therapy
P: 1-215-707-4828
E: sarah.carroll@temple.edu
Temple University

Temple University is one of the East Coast's major urban, state-related universities. The main campus is located at Broad Street and Montgomery Avenue in the heart of North Philadelphia. Seven other campuses also comprise Temple University, including the Medical School/Health Science Campus, the Center City campus, and the suburban Ambler Campus. The university consists of 17 schools and colleges, including international campuses, which enroll more than 38,000 students in over 300 academic programs and employ over 1,900 faculty.

Tuition

Current graduate tuition rates (2014-2015 academic year) are $831/credit for Pennsylvania residents and $1143/credit for out-of-state residents. These rates are subject to change by action of the Board of Trustees and may vary slightly every new fiscal year (on July 1). For academic year updated listing of tuition rates visit the following site: [http://www.temple.edu/grad/admissions/tuition_fees.htm](http://www.temple.edu/grad/admissions/tuition_fees.htm)

Housing

One and two bedroom apartments are located on the main campus and are available to graduate students. Further information may be obtained by contacting:

Office of University Housing and Residential Life
1910 Liacouras Walk, Suites 201-301
Temple University, Philadelphia, PA 19122
215.204.7184
housing@temple.edu

[http://www.temple.edu/studentaffairs/housing/jump-page/graduate-students/](http://www.temple.edu/studentaffairs/housing/jump-page/graduate-students/)

This office also maintains a list of other rooms, apartments, and houses which are located in the greater Philadelphia area and available for student rental. The local Philadelphia newspapers may also be helpful. Another source of information about housing is other graduate students in the department.

College of Public Health

Temple University's College of Public Health was founded in 1966 to meet the growing need for highly skilled professionals, and continues to adapt today to increasingly sophisticated needs as it leads the design and delivery of effective health care programs through education, training, research, and service. The College of Public Health excels as a regional and national leader in the education of health professionals and innovative health-related research. The College fosters interdisciplinary collaboration among students, staff, industry leaders, clients, and the community to better address health needs, eliminate disparities in care, increase lifespan, and improve quality of life. The Dean of the College of Public Health is Dr. Laura Siminoff. Four of the College's graduate programs have been ranked among the top 50 programs of their type in the nation by *U.S. News and World Report*: Communication Sciences & Disorders, Occupational Therapy (now part of Rehabilitation Sciences), Physical Therapy, and Public Health.

There are nine academic programs in the College of Public Health:
- Communication Sciences & Disorders
- Epidemiology and Biostatistics
- Health Services, Administration, and Policy
- Kinesiology
- Nursing
- Physical Therapy
- Rehabilitation Sciences (including Occupational Therapy and Therapeutic Recreation)
Graduate Program Admission Requirements

Applicants for the Neuromotor Science graduate degree programs will be evaluated using the criteria listed below.

**Academic Achievement**
Applicants must have a bachelor's degree or its equivalent from an accredited institution of higher learning and an overall grade point average (GPA) of at least 3.0 (on a 4.0 scale). One copy of official transcripts are required from each institution of higher education attended by the applicant. It is the applicant's responsibility to request these transcripts. Please refer to the Application for Admission materials for details concerning the forwarding of transcripts. University Graduate School policy requires that applicants have an overall undergraduate GPA of 3.0 points (out of a 4-point grade scale) for admission consideration. Exceptions to this policy can be met by one of the following criteria: a) standardized test scores at or above the 65\(^{th}\) percentile, b) have achieved a 3.25 graduate GPA in at least 9 credit hours of didactic graduate coursework, or c) have a 3.5 or higher undergraduate GPA in the final 2 years of their degree program.

**Analytical Skills**
Applicants must demonstrate competency in analytical skills pertinent to their graduate goals. All graduate applicants (master’s or doctoral) are required to take the Graduate Record Examination (GRE). Both the verbal and quantitative sections of the GRE are required. Recommended minimum GRE total score is at or above the 50\(^{th}\) percentile. In addition, proficiency in analytical skills may be further supported through: (a) course work* providing prerequisite skills necessary for research and statistical understanding and other pertinent graduate course knowledge that are required by the program of study; and (b) previous experiences such as publication of research articles in which the student selects and interprets statistics or other quantitative applications in research related to the chosen area of graduate study.

**Statement of Goals**
Applicants are required to submit a 1-2 page written statement of their career/professional goals.

**Resume (Curriculum Vitae: CV) and References**
Applicants demonstrate the extent of experiences which may contribute to the assessment of their application by submitting a current resume (CV) which includes previous and current educational and work experiences; professional publications and presentations; memberships in professional organizations; certifications; attendance at professional conferences and workshops; and any other pertinent information. Applicants must also submit the names and contact information for two references. These contact individuals can be academic and/or professional references. You will need to provide the telephone and email contact information for these two individuals. Letters of recommendation are NOT required, but please alert the two references that they may be contacted during the application review process.

**Portfolio**
Applications may be enhanced by the inclusion of a portfolio which might include any other supporting materials (publications) which demonstrate the applicant's abilities in the program area of the application.

**International Applicants**
International applications have added requirements defined by the Graduate School. These requirements are
detailed on the Graduate School website in the Graduate School Manual on the Policy Number 02.23.13 and
Number 02.23.13.01 and can be viewed at:

http://www.temple.edu/grad/policies/gradpolicies.htm

Further details on international applications are described the Prospective Students - International Application
website of the Graduate School at the following url:

http://www.temple.edu/grad/admissions/international.htm

If admitted and offered a Graduate Teaching Assistantship, international students must contact the International
Teaching Assistant (ITA) program in order to assess their English fluency. Those ITAs whose country of origin
does not have English as its native language will be required to take the Speaking Proficiency English Assessment
(SPEAK) Test. This test is administered by the Office of International Teaching Assistants Program and specifics
(including exemptions) are detailed at the following url:

http://www.temple.edu/ita/

The Office of International Students and Scholar Services (ISSS) provides support services for all Immigration
and Naturalization related requirements including the Certification of Eligibility requirements (I-20 or DS-2019)
for international applicants. International students must be enrolled in a full-time (9 credit hours per semester)
course of study to satisfy the regulations established by the Immigration and Naturalization Service concerning
the issuance of a student visa. International students should contact the ISSS at the following site for further
details:

International Students and Scholar Services
1700 North Broad Street
Suite 203B
Philadelphia, PA 19122 USA
215.204.7708
issss@temple.edu
http://www.temple.edu/isss/index.html

Graduate Program Application Procedures

Application
Applicants can access and complete the on-line application at the Graduate School web site:

http://www.temple.edu/grad/admissions/AccessGradApp.htm

Progress of application can be tracked by logging onto the same website listed above and open your
submitted application; updates on materials received will be posted.

Fee
A nonrefundable application fee of must accompany the application. Refer to the above Graduate School’s
website for the specified amount of the application fee.

Supporting Materials
Supporting materials (i.e., official transcripts, resume [CV], statement of goals, and two references’ contact
information) are forwarded to the Department of Kinesiology Student Services Coordinator, Ms. Megan DiMarco,
at the address listed below. The recommended method of delivery is electronic mail.

Ms. Sarah Carroll
Student Services Coordinator
Department of Physical Therapy
Jones Hall
Temple University
13307 North Broad Street,
Timelines
Review of the application occurs after the University online application is completed and all supporting documents described above have been received. To ensure maximum consideration for Fall semester admission it is recommended that the application be completed by January 2nd. Master’s applications will be reviewed by March 1st and admissions decisions will be completed by April 15th. Doctoral applications, upon completion, will be reviewed on an ongoing basis.

Letters of Admission Decision
Applicants who are recommended for admission to the Neuromotor Science Program will receive two letters: the official letter from the Dean of the Graduate School informing the applicant of the admission decision; if the decision was favorable for admission, a second letter from the DNMS Program will follow. The NMS Program letter will familiarize the applicants with their faculty mentor, as well as supply the applicants with a Tuition Deposit Form. Tuition deposits ensure an applicant’s respective place within the admitted Program for the semester in which admission is granted by the Graduate School. A one semester (or two semesters in rare cases) deferment for enrollment may be requested by the admitted applicant for consideration at the Program level. If the applicant does not enroll while the letter is valid, admission will be cancelled. If a new application is filed, a new application fee must accompany the application.

Financial Aid
Varieties of financial aid are available to full-time graduate students and are described on the following Graduate School website: http://www.temple.edu/grad/finances/index.htm
University financial support is available on a competitive basis for graduate teaching assistantships (TA), research assistantships (RA), academic internships (AI), and University fellowships.

Teaching Assistantships (TA)
The Departments of Kinesiology and Physical Therapy have limited TA positions, and all positions are not vacated each year. Students who fill these positions are assigned to duties within the department. These may include: teaching laboratory sections of undergraduate core courses such as Biomechanics, Physiology of Physical Activity, and Human Anatomy and Physiology; teaching within the professional PT program if appropriately credentialed; supporting the teaching of other undergraduate core courses; or teaching activity courses in a variety of physical activity and sports courses for the general university student population. To be considered for an assistantship, applicants must already be admitted by the Graduate School and advocated by their faculty mentor to the Program Director for assistantship consideration.

Recipients of positions with instructional responsibilities will be required to attend an orientation and training workshop provided by the Teaching and Learning Center in mid/late August. As stated previously in the International Applicants section, if an international student whose country of origin does not have English as its native language is offered a Graduate Teaching Assistantship, the student will be required to take the Speaking Proficiency English Assessment (SPEAK) Test. This test is administered by the Office of International Teaching Assistants Program and specifics are detailed at the following url:
http://www.temple.edu/ita/speak_test.htm

Benefits to include tuition remission, living stipend, and Health Insurance subsidy accorded to TAs are defined by the contractual agreement between the Temple University Graduate Students Association (TUGSA) and Temple University and as such will vary by contractual year.
Each TA will be assigned a workload which is the equivalent of 20 hours per week. Specific loads to meet the 20 hour per week assignment will vary with workload assignment. All recipients of these awards must be enrolled in 6-9 credits of graduate coursework each academic semester to maintain their full-time status and financial assistance. Exceptions to this are for doctoral students in the final non-didactic phases of their degree program.

Master's degree students are eligible for 2-year appointments; doctoral students are eligible for 4-year appointments which are predicated on satisfactory progress in the graduate degree program and satisfactory performance of all assigned duties. Refer to the Annual Program of Study Review for Doctoral Students section in the Handbook for further details on procedures for evaluation of satisfactory progress in the PhD program of study.

**Fellowships and Scholarships**

The Graduate School, in cooperation with the College and Department, administers several different kinds of financial aid. To qualify for any of these, the graduate student must be admitted to the Graduate School and be defined as a full-time graduate student (i.e., enrolled for 6-9 hours of course work or certified by the department as working full-time on the master's thesis or doctoral dissertation). Visit the following website for greater details on these financial awards at: [http://www.temple.edu/grad/finances/index.htm](http://www.temple.edu/grad/finances/index.htm)

The following competitive fellowships are available only to doctoral candidates. Applications for these awards may be obtained from the Graduate School. The application deadline is approximately February 1 of each year.

**Presidential Fellowships.** These are the most prestigious awards offered by the Graduate School of Temple University. They are awarded to unique and exceptional students. Each Presidential Fellowship carries a 12-month stipend and full tuition remission.

**University and Future Faculty Fellowships.** These are available to outstanding incoming students and provide support as a 12-month period stipend and full tuition remission.

**Loans and Work Study**

Students interested in obtaining other kinds of financial aid should contact:

- Student Financial Services
  - Ground Floor - Conwell Hall
  - 1801 N. Broad Street
  - Philadelphia, PA. 19122
  - 215.204.2244; Fax: 215.204.5897
  - sfs@temple.edu
  - [http://sfs.temple.edu/](http://sfs.temple.edu/)

**NMS Program Plans of Study**

A master’s or doctoral student is expected to maintain satisfactory progress toward degree completion. A student's graduate record begins with the first course credited to the degree and includes all subsequent courses, whether or not such work is necessary for the degree. A graduate student may earn no more than two grades of less than B- quality, may receive no more than one grade of F, must have at least a 3.0 GPA at graduation, and may not graduate with an outstanding incomplete (I) grade. Details of this Policy are described in section 02.24 of the Graduate School Policies and can be viewed at the following website [http://www.temple.edu/grad/policies/gradpolicies.htm#GCSS24](http://www.temple.edu/grad/policies/gradpolicies.htm#GCSS24)
## Curriculum Overview: Masters of Science in Neuromotor Science

### Master's Degree in Neuromotor Science (30 CH Total)

<table>
<thead>
<tr>
<th>Required Courses (18 CH) Course Number (CH) Course Title</th>
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<tbody>
<tr>
<td><strong>Core Courses (15 CH)</strong></td>
</tr>
<tr>
<td>NMS 9621 (3 CH) Neuromotor Science 1: Neural Factors</td>
</tr>
<tr>
<td>NMS 9624 (3 CH) Neuromotor Science 2: Mechanics &amp; Models</td>
</tr>
<tr>
<td>NMS 9627 (3 CH) Neuromotor Science 3: Cognition &amp; Learning</td>
</tr>
<tr>
<td>NMS 9623 (3 CH) Neuromotor Science: Programming</td>
</tr>
<tr>
<td>NMS 9622 (3 CH) Neuromotor Science: Instrumentation</td>
</tr>
<tr>
<td><strong>Public Health (0 SH)</strong></td>
</tr>
<tr>
<td>XXXX #### Public Health (self-learning module)</td>
</tr>
<tr>
<td><strong>Research Design &amp; Statistics (3 CH)</strong></td>
</tr>
<tr>
<td>(3 CH) Stats/ Res Design 1</td>
</tr>
<tr>
<td><strong>Research Experience (3 CH)</strong></td>
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<tr>
<td>NMS 9654 (3 CH) Laboratory Rotation and Seminar</td>
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<tr>
<td><strong>Elective Course (9 CH)</strong></td>
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<tr>
<td>Varied Graduate Level Cognate Courses</td>
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</tbody>
</table>

## Curriculum Overview: PhD in Neuromotor Science

### PhD Program in Neuromotor Science (60 CH Total)

<table>
<thead>
<tr>
<th>Required Courses (33 CH) Course Number (SH) Course Title</th>
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<tbody>
<tr>
<td><strong>Core Courses (18 CH)</strong></td>
</tr>
<tr>
<td>NMS 9621 (3 CH) Neuromotor Science 1: Neural Factors</td>
</tr>
<tr>
<td>NMS 9624 (3 CH) Neuromotor Science 2: Mechanics &amp; Models</td>
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<tr>
<td>NMS 9627 (3 CH) Neuromotor Science 3: Cognition &amp; Learning</td>
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<tr>
<td>NMS 9623 (3 CH) Neuromotor Science: Programming</td>
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<tr>
<td>NMS 9622 (3 CH) Neuromotor Science: Instrumentation</td>
</tr>
<tr>
<td>NMS 9653 (3 CH) Grantsmanship</td>
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<tr>
<td><strong>Public Health (0 CH)</strong></td>
</tr>
<tr>
<td>XXXX #### (0 CH) Public Health (proposed self-learning module)</td>
</tr>
<tr>
<td><strong>Research Design &amp; Statistics (9 CH)</strong></td>
</tr>
<tr>
<td>(3 CH) Stats/ Res Design 1</td>
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<tr>
<td>(3 CH) Stats/ Res Design 2</td>
</tr>
<tr>
<td>(3 CH) Stats/ Res Design 3</td>
</tr>
<tr>
<td><strong>Research Experience (6 CH)</strong></td>
</tr>
<tr>
<td>NMS 9654 (3 CH) Laboratory Rotation and Seminar (repeated twice)</td>
</tr>
<tr>
<td><strong>Electives (21 SH)</strong></td>
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<tr>
<td>Varied Graduate Level Cognate Courses</td>
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<tr>
<td><strong>Dissertation Related (6 SH)</strong></td>
</tr>
<tr>
<td>NMS 9994 (1 CH) Qualifying Examination</td>
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<tr>
<td>NMS 9998 (2 CH) Dissertation Proposal</td>
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<tr>
<td>NMS 9999 (3 CH) Dissertation Research</td>
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NMS 9621 Neuromotor Science: Neural Factors. 3 CH.

Description:
Current theories and research pertaining to the neural mechanisms underlying motor control, sensorimotor integration and motor learning will be introduced as a foundation for understanding functional movement and motor deficits. The roles of selected brain regions as they relate to different aspects of motor behavior will be discussed. Lesions studies will be presented to further demonstrate the impact of neural impairments on movement performance and motor learning. Application of neurophysiologic methods that evaluate the relationship between neural circuitry and human movement (e.g., EMG, MRI, PET, EEG, TMS) will be discussed.

Objectives:
1. Students will be able to identify how the neuroanatomy and neurophysiology of important brain regions jointly influence aspects of motor behavior.
2. Students will be able to synthesize current theories and research findings pertaining to the neural mechanisms of perception-action, motor control, sensorimotor integration and motor learning to explain both typical and impaired functional movement.
3. Students will be able to analyze computational models and lesions studies that explain movement performance and motor learning with neural impairment.
4. Students will be able to compare and contrast how neurophysiologic methods can be used to evaluate the relationship between neural circuitry and human movement (e.g., EMG, MRI, PET, EEG, TMS).
5. Students will be able to discuss neurophysiologic mechanisms of neural plasticity and the role in recovery of neuromotor function.

NMS 9624. Neuromotor Science: Mechanics and Models. 3 CH

Description:
Application of mechanical principles to static and dynamic models of human posture and movement and of the mechanical properties of the link-segment systems and biological tissue are introduced in this course. Theoretical frameworks, computational, and statistical models (e.g., dynamical systems, equilibrium point, control theory, Bayesian) are introduced as a basis for understanding the organization of complex movement patterns. Interpretation of the model predictions is based on both healthy individuals and those with movement deficits. The first half of the course will focus on the development of the tools necessary to conduct biomechanics research, process the data, and perform biomechanical data analysis. The second half of the course will work through common biomechanics questions related to human movement in three dimensions.

Objectives:
1. Students will provide a theoretical basis for the analysis of human posture and movement;
2. Students will solve the equations of motion for selected problems in biomechanics;
3. Students will analyze major human movement tasks- reaching, posture, gait;
4. Students will compare and contrast different research methods available to provide data and insight into human movement;
5. Students will discuss major biomechanical issues such as segment interactions, bi-articular muscle function, Hill-type muscle models, optimization, and non-linear analysis of movement.

NMS 9627. Neuromotor Science: Cognition and Learning. 3 CH

Description:
This course focuses on current theories and research related to cognitive and learning processes that influence motor behavior. Objectives include examination of lifespan motor development and learning, attentional mechanisms, perceptual effects on motor output, implicit and procedural memory effects on motor control, automatic compensatory responses and/or strategies following injury or disease, and the factors that influence adaptation and learning to long and short term changes in the body or environment.

Objectives:
1. Students will examine basic principles and concepts about the role of cognition and perception in motor learning theory.
2. Students will be able to describe research on the effects of cognition on motor learning as it relates to various patient populations.
3. Students will be able to relate cognitive factors to their impact on motor learning changes through the lifespan.
4. Students will be able to describe how attention impacts the control of voluntary coordinated movement.
5. Students will compare and contrast how imaging and recording techniques (e.g. EEG, fMRI, TMS) inform us about high-level cortical contributions to motor learning.
6. Students will be able to evaluate various measurement techniques used to examine motor performance.
7. Students will be able to distinguish temporary changes in performance from the relatively permanent changes that accompany learning.
8. Students will be able to explain how pathophysiology affects cognitive processing involved in motor learning.
9. Students will engage in development of rehabilitative strategies based on cognition and motor learning theory and principles

NMS 9622 Neuromotor Science: Instrumentation. 3 CH

Description:
Instrumentation is an introduction to electrical components and circuits, and their role in the function of laboratory instrumentation. The main goal of this class is to develop the student’s competence in managing the instrumentation and the quality of resultant data for motion analyses through an understanding of data acquisition equipment that is appropriate to their chosen research area. The student will be exposed to basic electronic design of filters, amplifiers, and A/D sampling as well as selected pieces of laboratory instrumentation. The class is organized in a lecture/lab structure.

Objectives:
1. Understand the basics of computer hardware and motion capture instrumentation systems
2. Gain exposure to electrical circuits systems and preliminary circuit analysis methods.
3. Demonstrate the ability to determine the possible sources of low quality data within the data acquisition and processing instrumentation and routinely practiced trouble shooting procedures for labs.
4. Demonstrate reliable and effective trouble shooting skills for data collection and experimentation.
5. To encourage students to think creatively about approaches to problem solving for motion analyses instrumentation.

NMS 9623 Neuromotor Science: Programming. 3 CH

Description:
This course is designed for students with little to no programming skills to help them with a general understanding of computer hardware, software, and the interaction between the two. Factors that make the use of the computer useful to neuromotor research will be presented. Basic computer architecture and operating systems will be discussed in this class. The student will gain a basic understanding of software programming logic and structures as well as signal processing techniques for analysis of human movement data. The goal of this course is for students to gain skills in basic programming for scientific data analysis of time series data with Matlab. In addition, students will also be exposed to software packages commonly used for movement analysis such as LabView, C, Visual-3D, and OpenSIM. The class is organized in a lecture/lab structure.

Objectives:
1. Understand basic foundations of computer programming
2. Have a basic understanding of how to test and debug computer programs
3. Have the ability and an appreciation for good documentation of computer programs
4. Understand basic algorithms for: data acquisition, data processing and management, data graphing and plotting, numerical analyses and exporting data for additional analyses or reports
5. Have working knowledge and basic skills of the MATLAB programming environment for movement analyses research
6. To gain exposure to other software commonly used in movement analysis such as LabView, Visual – 3D, and OpenSIM
7. Introduction to basic linear systems analysis techniques in the time and frequency domain (e.g., correlation, spectral analysis).

NMS 9653 Grantsmanship. 3 CH
Description:
This course exposes the Ph.D. level student to the mechanisms and methods of acquiring funding for Behavioral and Somatic Science Research. Students will learn Grantsmanship - the skills required to write a grant proposal. Learning experiences consist of literature review, writing key sections of a grant application, and if applicable, subject recruitment or. Class time will be divided into lectures and discussion of assignments.
Objectives:
1. understand grant overview, funding mechanism and the processes
2. retrieve information about funding opportunities in their research field
3. choose a topic and develop Specific Aims and Significance & Innovation sections
4. critique the relevant literature supporting your idea
5. present a clear concise compelling presentation of their grant topics

NMS 9654 Laboratory Rotation and Seminar Science 3 CH
Description:
This course provides the student with an in-depth exposure to the laboratory methods and focus of a faculty member. Students will learn the conceptual basis for the research as well as technical skills such as instrumentation and data analyses pertinent to the areas of research that are core to the NMS program or in a cognate area of interest to the student. Two rotations (6 CH) are required for the Ph.D. degree and a single rotation (3CH) for MS degree students.
Objectives:
1. Understand the conceptual basis of the research of the laboratory
2. Understand the tools used to answer research questions within the lab’s domain
3. To demonstrate emerging skills in the laboratory techniques and data processing of the laboratory
4. To appreciate how the laboratory research program addresses questions in neuromotor science
5. To gain experience organizing, acquiring and managing data and presenting results from a research question

Statistics or Research Design
[MS degree requires 3 CH; PhD degree requires 9 CH]
Any of the below courses, among others, could be used to fill this requirement.
EPSY 8627 [3 SH] Introduction to Research Design
PBHL 5002 [3 SH] Biostatistics
PBHL 5105 [3 SH] Epidemiology
PBHL 8012 [3 SH] Multivariate Biostatistics
EPSY 8625 [3 SH] Intermediate Education Statistics

Elective Courses
[MS degree requires 9 CH; PhD degree requires 21 CH]
Electives are chosen from existing 5000, 8000 or higher course level to provide a cognate area based on the student’s interests which could include for example courses in neuroscience, kinesiology, public health, rehabilitation science, teaching in higher education, psychology, engineering and independent studies. The Program director and faculty advisor will advise on selection and approve the courses.

Course Credit
A graduate student may take an upper level (3000 or higher) undergraduate course for graduate credit only where:
(a) the course in question is an upper level undergraduate course and covers material which is germane to the
student's area of study and which is not taught in any graduate course offered the same semester; (b) the student is
required to do graduate level work in the course (more advanced work than is required of the undergraduates in
the course), and the nature and extent of that work is specified in writing before the start of the course in a
document signed by both the instructor and the student; (c) the student has the prior permission of the course
instructor and the graduate chair of her or his program; and (d) the student pays graduate tuition for the course.
Information concerning advanced standing, transfer of credit, academic good standing, auditing, dismissals, and
other graduate school policies may be found at the Graduate School’s web site at

http://www.temple.edu/grad/policies/gradpolicies.htm#DECE27

In order to register for the Preliminary Examination requirement (KIN 9994), a student must have completed all
coursework for the degree (i.e., Graduate School Policy # 02.27.11.01). In order to register for the
Dissertation Proposal requirement (KIN 9998) the student must have successfully completed the Preliminary
Examination requirement (i.e., Graduate School Policy # 02.28.12.01). Upon approval of all required
coursework, examination requirements, and approved dissertation proposal, a doctoral student will be raised to
doc toral candidacy by the Graduate School (i.e., Graduate School Policy # 02.27.13.01). In order to register for
the Dissertation requirement (KIN 9999) the student must have doctoral candidacy status. Additionally, a
doctoral candidate must register for KIN 9999 in the term in which the dissertation oral examination is held
(Graduate School Policy # 02.28.13).

**Doctoral Examination and Dissertation Research**

In order to register for the Preliminary Examination requirement (NMS 9994), a student must have completed all
coursework for the degree (i.e., Graduate School Policy # 02.27.11.01). In order to register for the Dissertation
Proposal requirement (NMS 9998) the student must have successfully completed the Preliminary Examination
requirement (i.e., Graduate School Policy # 02.28.12.01). Upon approval of all required coursework, examination
requirements, and approved dissertation proposal, a doctoral student will be raised to doctoral candidacy by the
Graduate School (i.e., Graduate School Policy # 02.27.13.01). In order to register for the Dissertation
requirement (NMS 9999) the student must have doctoral candidacy status. Additionally, a doctoral candidate
must register for NMS 9999 in the term in which the dissertation oral examination is held (Graduate School
Policy # 02.28.13).

All Ph.D. students must complete the following course requirement: NMS 9994 (Preliminary Examination).
Doctoral students must register for 1 credit of NMS 9994 during the semester in which the preliminary
examination is completed and during all semesters between the completion of course work and the completion of
the preliminary examination.

**The** requirement for NMS 9994 Preliminary Exam will be a set of four exam questions to examine the doctoral
students’ competency in their sub discipline. Three questions will examine the core NMS content knowledge, and
a 4th question on research design and statistics.

a. Question format and content will be determined by the student’s preliminary examination committee.
b. The exam will take place at Temple University in the Department under direct supervision (i.e., a member
will have ability to check in on the student in person) of the preliminary examination committee who will
be responsible for review and assessment of performance.
c. The preliminary exam committee will consist of at least 3 members, with at least one from outside the
student’s subdiscipline.
d. The administration of the NMS 9994 Preliminary Exam questions will first take place in a written format.
Following the review of the student’s written performance by the preliminary examination committee
members, an oral examination will take place no more than 2 weeks following the written exam portion.
The oral examination will be attended (in person or via, e.g., conference call) by all of the preliminary
examination committee members. The oral exam format will be determined by the committee. The
committee will judge written and oral examination performances collectively and provide a grade of pass
or fail.
i. The student will have 2 opportunities to pass the Part 1 portion of the Preliminary Examination requirement.

**Dissertation Requirements**

NMS9998 (Pre-Dissertation Res) - Doctoral students must register for 1-3 credits of NMS 9998 during all semesters between completion of the preliminary examination and approval of the dissertation proposal by the Dissertation Sponsoring Committee. Once the dissertation proposal has been approved by the Dissertation Sponsoring Committee, it is submitted to the Graduate School. Defense and submission of the dissertation proposal to the Graduate School requires that the research protocol be submitted for or have received approval by the Institutional Review Board (IRB). The student's research may begin upon the Graduate School's approval of the dissertation proposal and approval by the IRB.

NMS 9999 (Doctoral Dissertation) - After the dissertation proposal has been approved by the dissertation advisory committee and the Graduate School, doctoral students must register for a minimum of 1 credit of NMS 9999 each semester until the dissertation has been successfully defended, approved by the dissertation examination committee, and filed with the Graduate School. A minimum of 3 credits of NMS 9999 is required for graduation.

**Dismissal from the PhD Program**

Students who earn a substandard grade (e.g., less than B-), will receive a warning from the Graduate School. A student who receives more than two grades below "B-" or more than one grade of "F" is dismissed for failure to maintain satisfactory grades. Refer to Graduate School policy [www.temple.edu/grad/policies/gradpolicies.htm#GCSS24](http://www.temple.edu/grad/policies/gradpolicies.htm#GCSS24) (#02.24.11.01 to 02.24.11.05) for further details.

Students not making doctoral program progress (see Annual Program of Study Review document in Appendix B) will receive a warning letter from the Department Graduate Program Director in consultation with the student’s PhD advisor and committee.

a. The warning letter will specifically address the issues and recommend measures along with deadlines for remediation.

b. Students who receive such warnings may lose University or departmental financial support.

c. Students who fail to meet their remedial recommendations in the designated time frame will be dismissed.

**College of Public Health Graduate Learning Module**

Starting in the Fall 2015 semester, a new online learning module is being required for all graduate students in the College of Public Health – “Current and Emerging Issues in Public Health and Health Professions.” This new course is completely online and asynchronous, meaning that you can complete the modules at your own pace. The course is a required pass/fail course, but students will not be charged additional tuition for the course as it is considered a 0 credit course; however, this is mandatory and students will not be eligible for graduation unless the course is completed. It is possible that one or more of your graduate courses have or will be embedding portions of the modules within the course, thereby minimizing any duplicative work.

The course will require all students to complete a set of six learning modules that address some of the core elements of health, including guiding principles, practices and guidelines. Students will then have the option to select an additional six modules from a menu of modules (currently a choice of 12, but new modules are being developed). All of the course content will be available via Blackboard. Each module includes a video presentation, powerpoint slides, additional resources, and a quiz. The video presentation is divided into 3-4 segments of no more than 20 minutes each. Students will be required to view the video presentation (may also print and follow along with the powerpoint slides) and then complete the quiz, receiving a minimum grade of 80%
to receive credit. The Program Directors and/or Advisors within your program will work with you more closely to explain the modules, discuss appropriate timing when you should complete the modules, and monitor to be sure that you have completed the modules prior to the deadline to be cleared for graduation.

**Academic Accommodation:**

The Americans with Disabilities Act and the Rehabilitation Act affords students the opportunity to seek reasonable accommodation to help in their academic success. There may be many reasons for students to seek accommodation. Academic accommodations are one of the most frequently-sought accommodations. According to Temple University’s Disability Resources and Services (DRS) academic accommodations include:

- Test taking accommodations
- Sign language/CART
- Assistive technology
- Alternate format materials
- Note taking

A student seeking academic accommodations must schedule an intake meeting with the DRS. A DRS coordinator will work with the student to determine appropriate reasonable accommodations. The student will receive an accommodation letter from DRS that documents the recommended accommodations. It should be noted that receiving an accommodation letter does not automatically require faculty to make the accommodations. The student must present a copy of the accommodation letter to each faculty member and discuss how accommodation can be made. If the faculty member agrees with the recommended accommodations, the faculty member and the student will sign and date two copies of the letter. One copy is maintained by the student and the other should be given by the faculty member to the departmental Student Services Coordinator to be secured in the student’s file.

If the student has questions about this process, the student should contact the NMS Program Director.

The Program requires demonstration of competence in any psychomotor skills taught throughout the curriculum. [http://www.temple.edu/studentaffairs/disability/accommodations/accommodation-letters.html](http://www.temple.edu/studentaffairs/disability/accommodations/accommodation-letters.html)

**Incomplete Grades ( “I” )**

As specified in the Graduate Bulletin of Temple University (#02.24.12), the assignment of an “I” presumes that the student has completed the majority of the work at a passing level at the point when the “I” is assigned. Incomplete grades are to be used to respond to an intervening event, such as a death in the family, an extreme illness in the family, or personal extreme illness and not intended to defer failure in a course.

The assignment of an “I” grade is allowed only after completion of a written contract for the completion of the work. The contract must be signed by the course coordinator who is the instructor of record for the course and the student. The contract must contain the specific outcomes and timelines necessary to convert the “I” grade into a passing grade. A copy of the written contract must be provided to the NMS Program Director and a copy maintained in the student’s file. At the time that grades are submitted, the course coordinator will assign the “I” grade along with the grade (alternative grade) that the student would have earned without the inclusion of the “I” grade. If the “I” grade is not cleared within one year, the alternative grade will become the official grade of record for the course.

Incomplete grade contracts must be completed in a timely fashion. A student with an unresolved incomplete grade on his or her official academic record cannot graduate from Temple University.

**ACADEMIC INTEGRITY AND PROFESSIONALISM**

All students are expected to abide by the ethical norms and expectations for academic honesty as described below.
Each student is expected to maintain the highest levels of academic integrity and honesty throughout the NMS program. The information contained in the Graduate School Policy on Academic Honesty, the Temple University Student Code of Conduct, the CHPSW Graduate Student Handbook, and the PT Statement on Academic Integrity and Professionalism can help the student to specifically identify the basis for academic dishonesty, penalties, and disciplinary procedures. Academic dishonesty includes plagiarism, violating the rules of an assignment, and cheating on examinations, including take home examinations. At the minimum, the penalty for plagiarism, violating the rules of an assignment, or cheating on an examination is a grade of “F” on the examination or assignment. In addition, the violation may result in an “F” in the course and therefore, dismissal from the program.

Academic honesty and integrity constitute the root of the educational process at Temple University. Intellectual growth requires the development of independent thought and respect for the thoughts of others. To foster this independence and respect, plagiarism and academic cheating are prohibited.

Plagiarism is the unacknowledged use of another individual's ideas, words, labor, or assistance. All coursework submitted by a student, including papers, examinations, laboratory reports, and oral presentations, is expected to be the individual effort of the student presenting the work. When it is not, that assistance must be reported to the instructor. If the work involves the consultation of other resources such as journals, books, or other media, those resources must be cited in the appropriate style. All other borrowed material, such as suggestions for organization, ideas, or actual language, must also be cited. Failure to cite any borrowed material, including information from the internet, constitutes plagiarism.

Academic cheating results when the general rules of academic work or the specific rules of individual courses are broken. Examples of cheating includes falsifying data; submitting, without the instructor's approval, work in one course done for another; helping others to plagiarize or cheat from one's own or another's work; or performing another person’s work.

The penalty for academic dishonesty can vary from a reprimand and receiving a failing grade for a particular assignment, to a failing grade in the course, to suspension or expulsion from the University. The penalty varies with the nature of the offense. Students who believe that they have been unfairly accused may appeal through their school/college's academic grievance procedure and, ultimately, to the Graduate Board if academic dismissal has occurred.

Temple University is a community of scholars in which freedom of inquiry and freedom of expression are valued. Important aspects of attending the University as a student are having respect for the rights of others in the community, conducting oneself in a manner that is compatible with the University’s mission and taking responsibility for one’s actions. In addition to exhibiting appropriate maturity and self control, members of the University community are expected to conduct themselves in a manner in which they neither break laws nor cause mental, physical, or emotional harm to others.

To fulfill its functions of promoting and disseminating knowledge, the University has authority and responsibility for maintaining order and for taking appropriate action, including, without limitation, exclusion of those who disrupt the educational process. University authority should not be used merely to duplicate the function of general laws. Only when the University’s interests as an academic community are substantially involved should the special authority of the University be asserted. Responsibility for the enforcement of the rules of the University rests with all the members of the Temple community: students, faculty and staff. University rules should serve as a guide for high personal standards. The individual student is responsible for:

- Fostering an environment conducive to continued intellectual and educational stimulation within the University free from harassment by other members of the community
- Fostering the maintenance of physical and mental health, the safety and welfare of each member of the community
• Respecting the rights of others

These general behavioral expectations and the Student Code of Conduct (“Code of Conduct”) represent a reasonable regulation of student conduct, but the student should be as free as possible from imposed limitations that have no direct relevance to his/her education and to his/her obligations and responsibilities as a member of the University community. The provisions of the Code of Conduct should be interpreted consistent with this philosophy, and in accordance with all recognized student rights and privileges.

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<th>Code of Conduct</th>
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<td>A student is in violation of the Code of Conduct whenever the student commits, attempt to commit, aids, facilitates, or solicits the commission of, or acts in concert with others in bringing about the behavior or acts regulated or prohibited by any of the following:</td>
</tr>
<tr>
<td>• Academic dishonesty and impropriety, including plagiarism, fabrication and academic cheating. This includes helping, procuring or encouraging another person to engage in academic misconduct</td>
</tr>
<tr>
<td>• Interfering with or disrupting the conduct of classes or any other normal or regular activities of the University</td>
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There are a total of 42 actionable items listed. Should the University Disciplinary Committee (UDC) determine that a violation of the Temple University Code of Conduct has occurred; the student is subject to any of the following sanctions – alone or in combinations:

- Letter of reprimand
- Withdrawal of student social privileges
- Fine
- Academic sanction
- Probation
- Suspension
- Expulsion
- Alternative sanctions

Students in the College of Public health are expected to abide by standards of ethical conduct. Applicants and matriculated students should contact their dean’s office to review school/college policies. Each student should also contact his or her graduate advisor to review current requirements. This request for explicit contact between student and graduate advisor is necessary because some programs impose more stringent requirements than those set by the Graduate Board and the Graduate School. A complete listing of Graduate School policies and procedures related to professional behavior can help guide the student should difficulties arise.

The penalty for plagiarism or violating the rules of an assignment or cheating on an examination is, at a minimum, the assignment of an “F” grade. In addition, engagement in the act of plagiarism may result in an “F” grade for the course, dismissal from the program, and/or referral to the UDC. Students are highly encouraged to use one of the University resources (e.g. TurnItIn) that can check for plagiarism prior to turning in written work.

Issues of academic dishonesty or violations of the code of conduct should first be addressed between the faculty member and the student. The NMS Program Director, and/or Departmental Chairperson may become involved at the request of either the faculty member or the student. If the Program Director and/Chairperson is unable to successfully resolve the situation between the faculty member and the student, the student, faculty member, the Departmental Chairperson, or the Program Director can choose to take the case forward to the Office of the Dean of the CPH.

The Dean’s Office may intercede directly at this point or convene a meeting of the UDC or exercise the prerogative to convene a CPH Academic Review Board (ARB) as deemed appropriate. The ARB hears those cases of academic dishonesty as it affects a final grade; unlike the UDC, it does not deal with suspensions, dismissals, or fines. Should the matter go before the ARB, the faculty member and the student shall provide the
ARB with written accounts of the incident. All decision or recommendations should be made in writing within 10 working days. Any appeal beyond the Dean is to be addressed to the Provost.

All University and College of Public Health policies (www.temple.edu/grad/policies/index.htm) will be upheld. Freedom to teach and freedom to learn are inseparable facets of academic freedom. These principals are outlined in the University’s policy on “Student and Faculty Academic Rights and Responsibilities” (http://policies.temple.edu/getdoc.asp?policy_no=03.70.02).

Temple University is committed to preventing and addressing sexual assault, domestic violence, dating violence, harassment and stalking. Temple encourages members of the university community to promptly and accurately report all criminal actions and utilize the university’s sexual misconduct education and prevention programs. For more information, please go to: http://sexualmisconduct.temple.edu/

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<th>Students Rights and Responsibilities</th>
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A student accepting admission into the Temple University CPH community takes on an obligation to promote the welfare of the program and assumes certain rights and responsibilities. Each individual member of this community is responsible for his or her own actions and is expected to respect the rights of others. The Temple University community affords every student certain rights that are essential to the educational mission of the university and its character. These rights include, but are not limited to:

- The right to have access to and participate in the academic and non-academic opportunities afforded by the University, subject to applicable standards or requirements.
- The right to freedom of thought and expression.
- The right to be free from discrimination on the basis of race, color, gender, sexual orientation, religion, national or ethnic origin, age, disability, or status as a disabled or non-disabled veteran.
- The right to fair University judicial process in the determination of accountability for conduct.

A student is also expected to exhibit responsible behavior regardless of time or place. Failure to do so may result in disciplinary action by the University. Responsible behavior is a standard of conduct that reflects higher expectations than may be prevalent outside the University community. Responsible behavior includes but is not limited to the following obligations:

- Refrain from activities that have an effect of or intent to interfere with the education, pursuit of knowledge, or fair evaluation of the performance of any student. Examples of such activities include but are not limited to the following definitions:
  - **Cheating:** The use or attempt to use unauthorized assistance, material, or study aids in examinations or other academic work or preventing, or attempting to prevent, another from using authorized assistance, material, or study aids. Example: using a cheat sheet in a quiz or exam, altering a graded exam and resubmitting it for a better grade, etc.
  - **Plagiarism:** The use of the ideas, data, or language of another without specific or proper acknowledgment. Example: copying another person’s paper, article, or computer work and submitting it for an assignment, cloning someone else’s ideas without attribution, failing to use quotation marks where appropriate, etc.
  - **Fabrication:** The submission of contrived or altered information in any academic exercise. Example: making up data for an experiment, fudging data, citing nonexistent articles, contriving sources, etc.
  - **Multiple Submissions:** The submission, without prior permission, of any work already submitted to fulfill another academic requirement.
  - **Misrepresentation of Academic Records:** The misrepresentation of or the tampering with or an attempting to tamper with any portion of a student’s transcripts or academic record, either before or after coming to Temple University. Example: forging a change of grade slip, tampering with computer records, falsifying academic information on one’s resume, etc.
  - **Facilitating Academic Dishonesty:** The deliberate fabrication, sorting, manipulation, exclusion or resultant suppression of data or statistical testing in the classroom, laboratory, or clinic. Knowingly
helping or attempting to help another violate any provision of the Code. Example: working together on a take-home exam, etc.

- **Unfair Advantage**: An attempt to gain unauthorized advantage over fellow students in an academic exercise. Example: gaining or providing unauthorized access to examination materials, obstructing or interfering with another student’s efforts in an academic exercise, lying about a need for an extension for an exam or paper, continuing to write even when time is up during an exam, destroying or keeping library materials for one’s own use, etc.

- To respect the health and safety of others. This includes threats of physical violence against another person (including sexual violence) and disorderly conduct. In addition, the possession of dangerous articles (such as firearms, explosive materials, etc.) on University property or at University events is prohibited without University authorization.

- To respect the right of fellow students to participate in university organizations and in relationships with other students without fear, threat, or acts of hazing.

- To refrain from conduct that infringes upon the rights of other students, employees and faculty. The University condemns hate speech, epithets, and racial, ethnic, sexual and religious slurs - whether written, electronic or oral. However, the content of student speech or expression is not by itself a basis for disciplinary actions; rather student speech may be subject to discipline when it violates applicable laws or University regulations or policies.

- To refrain from stealing, damaging, defacing, or misusing the property or facilities of the University or of others. This also prohibits the disruption of University computing services or interference with the rights of others to use computer resources.

- To be honest and truthful in dealings with the University about one's own identity (e.g., name or Social Security number), and in the use of University and other identification.

- To comply with all contracts made with the University, such as Clinical Education Services contracts.

- To comply with policies and regulations of the University and its departments (e.g., the University's Guidelines on Open Expression, Anti-Hazing Regulations, Drug and Alcohol Policies, Sexual Harassment Policy, etc.).

- To comply with federal, state and local laws.

- Adhere to Professional classroom/clinic/laboratory behavior

**NOTE:** If a student is unsure whether his or her actions constitute a violation of the Code of Academic Integrity and Professionalism it is that student’s responsibility to consult with the instructor to clarify any ambiguities.

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**OTHER GENERAL POLICIES AND TOPICS**

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**Campus Security**

Temple University police officers have a high level of visibility on campus, which helps create a strong connection with the community. Linked through our state-of-the-art communication center, our officers patrol campuses 24 hours a day – on foot, in cars, and on bicycles.

On foot, officers get an up close view of the people and activities on campus. In police cars, officers can respond quickly to an event anywhere on their beat.

The bicycle patrol has the best of both worlds. These officers maintain a friendly accessibility to students and others on campus. And they can move rapidly and with great agility to any area they are needed. Campus police can be contacted by dialing 215-204-1234 (or 1-1234 from a university phone).

Since we are located on an urban campus, students are advised not to walk alone at night. Escort services are available around the clock. Students wishing to obtain an escort should call the campus police number. The faculty strongly advises students to take advantage of this service.
Each student will be issued a Temple University photo identification card. You are expected to have your ID with you at all times. If you lose your ID, report the loss to Campus Police located at the corner of Broad and Tioga Streets. You must have a valid ID to access resources such as the parking lots, library resources, etc.

Each building on campus has security guards at the entrances. All students, faculty, and staff should have their identification cards available for inspection. If you do not have your ID card, you will be asked to sign a register or obtain a temporary ID for entrance into the building.

**Policy on Class Scheduling and Room Assignments**

The scheduling of classes and room assignments are challenges for every academic program and require administrative flexibility. All attempts are made to maintain a stable semester schedule. However, there may be times when class days or locations need to be changed. Students will be notified of any changes as far in advance as possible.

During each semester, attempts are made during the “master scheduling” process to afford students a four-day schedule. Because of resource availability (facilities, equipment, faculty, etc.) class times and locations may need to be moved to the un-scheduled day. Students will be notified of any changes as far in advance as possible. Each semester the laboratory will be available for student use and practice outside of scheduled class time. A work-study student will be responsible for proctoring the open laboratory time.

**Policy on e-mail Use**

Every student is required to obtain and use a Temple e-mail address. Because faculty members use these addresses to convey important information, every student should check his or her Temple email account at least daily during the semester. After admission to the NMS program, you will be assigned a “tua” Temple e-mail. The letters “tua” are followed by several numbers. To facilitate communication and recognition by faculty and other students, you will be required to convert this “tua” e-mail address to one that contains some semblance of your name (preferably “first name.last name@temple.edu”). **Please Note:** You should have a period (.) between your first and last name.

The following procedure can be used so that your first name and last name will appear on e-mail addresses. You will create an alias so that your e-mail alias will be your “first name.last name@temple.edu”.

**Steps to Obtain Proper e-mail Formatting:**
1. Update your listing in the Temple University Cherry and White Pages.
2. Click on UPDATE YOUR ENTRY
3. Click on the circle for e-mail Alias 1
4. In the box for e-mail Alias 1: type your first name.last name. Please be sure to put the “.” Between your first and last name.
5. Click on SUBMIT When you click on SUBMIT, it will take you to another page.
6. Type in your AccessNet Password in the box provided
7. Click on Commit Changes. When you click on Commit Changes, it will take you to another page that states that your Directory entry has been updated and a confirmation will be sent to your account
8. Exit the Browser because you are finished.
9. You should now receive messages with your firstname.lastname in the heading rather than the tua xxx.

**Policy on Authorship**

Faculty will use specific published professional, scientific, or educational documents on authorship to establish authorship for the student research projects. The published guidelines should include the following principles:

1. Authorship should reflect the work done to complete the project, including intellectual effort, data collection, presentation, and publication
2. There should be agreement on a clearly specified method for determining authorship before the work is completed.

**Policy on Responsible Conduct of Human Subjects Research**
All faculty, students and personnel associated with the NMS Program activities are responsible to obtain and maintain appropriate training and certification in the responsible conduct of human research and patient privacy.

1. Evidence of training certification (CITI documents) will be maintained within each laboratory program.
2. Each individual is responsible for ensuring their activities are in compliance with all research regulations.
3. Student research is not automatically exempt from needing IRB review and approval. The student and faculty advisor are responsible for ensuring that their research is conducted in accordance with regulations.
4. Please note that Dissertation Proposal approval and advancement to candidacy requires the appropriate IRB approvals to be under review or approved.

Information on research at Temple can be found at: [http://www.temple.edu/research/](http://www.temple.edu/research/)
IRB specific information at: [http://www.temple.edu/research/regaffairs/index.html](http://www.temple.edu/research/regaffairs/index.html)

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**Role of Faculty Resources**

Each student is provided a faculty member as an advisor. Faculty can provide information to aid students in finding resources to deal with academic and personal issues, as well as career planning. Students are advised to contact their faculty advisor at least twice a semester to discuss academic status or other areas of concern or interest. At the beginning of the Fall semester of each year, the student will complete the “Individualized Development Plan” and review it with their faculty advisor. The complete, reviewed and approved IDP is turned into the Program Director by October 1st of each academic year. Please see the end of this document for the template, in addition this is posted in the NMS Program Student Owlbox.

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**Office Hours**

All faculty members will notify students of available office hours through the course syllabus or on the course Blackboard site. In addition to the posted office hours, the PT faculty members are generally readily available for consultation with students. All students are requested to make appointments for their meetings with faculty. If no students have requested an appointment 48 hours before posted hours, the faculty may be engaged in other activities. If any student has difficulty finding access to faculty, the student should contact the NMS Program Director or the Department Chairperson.

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**Role of the Student in Program Evaluation and Activities**

Student involvement in the on-going assessment process designed to improve the quality of the NMS program is strongly encouraged by the faculty, administration, and staff of the department and university. The methods by which a student may have input into program review may occur in various forms including, but are not limited to the following:

**Electronic Student Feedback Forms (eSFF)**

Faculty members and administrators value individual student feedback for every course. Temple University uses a standardized course evaluation tool for all didactic courses. The student response forms for this tool are made available electronically during the last week of classes. In order for the evaluations to serve their purpose, students are asked to complete the evaluations honestly and objectively and in a confidential manner. The feedback data is anonymous. No data analysis from the forms will be shared with any faculty member until after grades have been issued.

**Curricular Evaluations**

Curricular evaluations associated with each and every semester of the professional program take place with every student expected to provide assessment of each course within the context of the semester for compilation and analysis by departmental faculty members.
Neuromotor Science Individualized Development Plan (IDP)
Annual Progress Meeting Template

Please complete this form electronically and email to the Graduate Program Director by October 1st of your current academic year. Complete the form as a Word document, with all required signatures. Rename the filename to "your name progress AY XXXX" before emailing it.

The following template provides some guiding questions that can facilitate an annual career progress and mentoring meeting between the postdoc and his/her faculty mentor(s).

**Students:** complete Parts I to III and attach your updated CV. Provide both documents to your faculty mentor(s) in advance of scheduling your meeting.

**Faculty Advisors & Mentor(s):** discuss Parts I to III, review goals and objectives and think of action steps towards progress. Discuss with your mentor(s) and complete Part IV together: outlining action steps and activities you agree to do towards making progress and meeting stated goals and objectives.

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**Individualized Development Plan (IDP) Resources**
http://myidp.sciencecareers.org/

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Student Name _______________________________________________________

Year in Program (as of current Fall semester): _______________

Signature of Student _________________________________________ Date_______________

Name Advisor _______________________________________________

Signature of Advisor ________________________________________ Date_______________

*(Electronic signatures are acceptable)*

Signature of Program Director __________________________________________________

Date_______________

4 Copies: 1 student’s permanent record
1 supervising faculty member
1 Program Director
1 student
Financial Support:
Indicate the source (RA, TA, Fellowship) of your financial support for Summer 20XX, Fall 20XX, and Spring 20XX.

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<th>Semester</th>
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Current Academic Year (Summer 20XX- Spring 20XX)
Indicate the anticipated source of your financial support for the coming year.

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<th>Semester</th>
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Coursework:
In chronological order, list all courses you have taken for all years you have been in the NMS program. Indicate semester, course code, course name, and grade. Also list all anticipated courses that are remaining to complete (include anticipated semester). It is important that you are cognizant of the Graduate School policy regarding acceptable grades. It states that a graduate student may earn no more than two grades of less than B-quality, may receive no more than one grade of F, must have at least a 3.0 GPA at graduation, and may not graduate with an outstanding incomplete (I) grade. Details of this Policy are described in section 02.24 of the Graduate School Policies and can be viewed at the following website:

http://www.temple.edu/grad/policies/gradpolicies.htm#GCSS24

Failure to meet grade and progress standards may result in dismissal from the NMS program. See section on Dismissal from Graduate Programs in the Graduate Handbook for further details.

Part I. Overall progress: Review of the last year
1. Highlight your major accomplishments in the past year (e.g., publications, patents, honors or awards, grants or fellowships):

2. Brief overview of research progress in the past year:

3. List any Published and Submitted Scholarly Work including journals, status
4. List any presentations at professional meetings or conferences both internal and outside of Temple.

5. **Experiential Training:** What seminars, conferences, lab meetings, etc. do you participate in? Are they meeting your needs? If not, what else would be helpful?

6. **Awards or Honors Received:**

7. **External Grant Applications Submitted** – include funder, amount, review dates

8. **Teaching Activities:**
   In chronological order, list all courses you have taught or served as a teaching assistant since you have been in the NMS PhD program. List semester, course code, and course name.
   
   How much, in percent effort? Is this sufficient for developing multidisciplinary academic skills? In what ways could these activities be interfering with research productivity?

9. **Administrative and Other Duties**, such as assistance with writing grants or mentoring graduate or undergraduate students: How much, in percent effort? Are these activities relevant to your development of academic or professional skills? In what ways could these activities be interfering with your research productivity?

10. Did you accomplish all that you agreed on doing with your mentor under the **Action Plan** during your initial meeting?
   If no, what parts of the plan did you not accomplish and why? Describe/list any unusual or unanticipated challenges you experienced.

11. **Mentoring** and Professional Collaborations:
   a. How often did you meet with your faculty advisor/mentor(s) last year?
      
      How would you rank the frequency of meetings? Too few Just right Too many

   b. Who are your secondary mentors? Is that person a faculty member? How often did you meet with them?

   c. Do you have collaborators outside of the lab? Please list their names and roles.
Part II. **Wellbeing:**

a. **Research environment:** What features of the lab group or your relationships with colleagues and collaborators are most helpful and supportive to your wellbeing? What concerns could negatively affect your progress?

b. **Work-life balance:** What do you do to maintain a balance between your work and life/personal needs? What would you like to continue to do, or do differently next year?

c. **Do stresses or concerns exist in your personal life that could impact your work? How are things going generally? Are you able to take regular breaks and vacations?**

Part III. **Goals and Objectives:**

1. Refer to your previous discussion with your faculty mentor(s). What changes or modifications took place?

2. **List up to 5 scientific and career objectives in the coming year.**

3. What **opportunities** at Temple and beyond can assist you in reaching your professional/non-scientific objectives? For example, participation in meetings, courses or workshop attendance (identify meeting/workshop and date)?

---

**To be developed jointly by the student and the mentor(s) during or after the discussion**

Part IV. **Action Plan for Your Next Steps.** In carrying out activities that may assist you in meeting your Research/Scientific objectives listed above--

1. Projected timeline for completing your current projects and degree

2. Projected timeline for your job search

3. List the **activities** in which you and your mentor(s) agree you should participate that will support you in achieving your scientific and professional objectives in the coming year.

4. What additional actions can you and your mentor continue to do, in order to help you be successful?
Completion of Preliminary Examination Requirement:

Anticipated date for completion: ______________________________

Completion date: _____________________

COMPLETE THE FOLLOWING ONLY IF YOU HAVE ADVANCED TO PhD CANDIDACY (post-proposal completion)

Dissertation Research:

(1) General research topic:

(2) Summary of progress (paragraph describing progress in the last year):

(3) Anticipated date of dissertation defense:
Neuromotor Science Program
Contract for Independent Study Courses

Students who wish to undertake the independent study courses are **required to have the advance written approval of their advisor and Program Director**. To register, you must present this completed registration form with attachments, signed by your advisor and the faculty member who will supervise and grade the work, to the Program Director. The Independent Study form should be submitted for signatures at the time of registration, but no later than the last day of classes the semester before the Independent Study will occur.

The scope of work should reflect a single semester’s amount of work and not be designed to require an Incomplete grade. Please see the Graduate School policies for timely completion of coursework and Incompletes.

**Attach the following:**
- 1-page time-line showing target dates for completing key elements of the independent work and that it will be completed within the semester.
- Any additional attachments.

Student’s Name: ___________________________ Date: _____________

Course Number: ___________ Credits: ______________

Semester: _______________ Year: ____________

Faculty Member(s) Supervising and Grading Work: ________________________________

Any other Faculty member(s) who will supervise/grade work ______________________________

Rationale for undertaking Independent Work:

Primary Objectives of Independent Work:
Competencies Addressed in Independent Work:

How will the work be evaluated and graded?
(Include letter grade or Pass/Fail and the products or activities to be evaluated and graded)

Signatures Required:

Student’s Signature: _______________________________ Date __________

Supervising Faculty Member: _______________________________ Date __________

Program Director: _______________________________ Date __________

4 Copies: 1 student’s permanent record 1 supervising faculty member
1 Program Director 1 student
Course Title: Laboratory Rotation/Seminar in Neuromotor Science

Course Description:
The student will have an opportunity to gain specific research laboratory skills under close faculty mentorship. Each laboratory experience will be custom designed by the faculty member for each student depending on the faculty/student research interests. For example, a lab rotation might include learning instrumentation setup, reducing data, preparing research results for professional presentations, library work, visiting other research labs, etc.

1. State the specific project or portion of a project to be completed during the Laboratory Rotation.
2. List the specific objectives and related tasks to be completed that will support the specific project to be completed. The focus should be on what skills the student will be learning.
3. State how the Laboratory Rotation will be evaluated including who will evaluate what objectives/tasks and for what percentage of the grade. A self-evaluation by the student must be part of the final grade.
4. A copy of the Laboratory Rotation will be placed in the student's academic file by the Program Director.

Students who wish to undertake the laboratory courses are required to have the advance written approval of their advisor and Program Director. To register, you must present this completed registration form with attachments, signed by your advisor and the faculty member who will supervise and grade the work, to the Program Director. This form should be submitted for signatures at the time of registration, but no later than the last day of classes the semester before the Independent Study will occur.

The scope of work should reflect a single semester’s amount of work and not be designed to require an Incomplete grade. Please see the Graduate School policies for timely completion of coursework and Incompletes.

Student’s Name: ___________________________ Date: __________

Semester: ____________ Year: __________

Faculty Member(s) Supervising and Grading Work: __________________________

Any other Faculty member(s) or personnel who will supervise/grade work __________________________

Objectives:
5. State the specific project or portion of a project to be completed during the Laboratory Rotation. Note that seminar attendance is a part of this course experience.
6. List the specific objectives and related tasks to be completed that will support the specific project to be completed. The focus should be on what skills the student will be learning.
7. State how the Laboratory Rotation will be evaluated including who will evaluate what objectives/tasks
and for what percentage of the grade. A self-evaluation by the student must be part of the final grade.

8. A copy of the Laboratory Rotation will be placed in the student's academic file by the faculty sponsor.

**Brief description of project student will complete (< 250 words)**

**Complete the following table**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Activities</th>
<th>Products/Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participate in scholarly discussions</td>
<td>Graduate Seminars &amp; Journal Clubs</td>
<td>Participation in 3 or more seminars</td>
</tr>
<tr>
<td>Understand the main questions and methods underlying the specific field of study</td>
<td>Literature review</td>
<td>Summary of literature review, Annotated Bibliography</td>
</tr>
<tr>
<td>Competency in Lab Procedures</td>
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<tr>
<td>Pilot data collection</td>
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<tr>
<td>Analyses &amp; interpretation of data</td>
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<tr>
<td>Student self-assessment</td>
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</tbody>
</table>

**Method of Evaluation:**

1. Participation – ?%
2. Annotated Bibliography – ?%
3. Competency in laboratory procedures – ?%
4. Pilot data collection – ?%
5. Analyses & interpretation of data – ?%
6. Student self-assessment – ?%

**Signatures Required:**

Student’s Signature: ________________________________ Date___________

Supervising Faculty Member: ________________________________ Date___________

Program Director: ________________________________ Date___________

4 Copies: 1 student’s permanent record  1 supervising faculty member
           1 Program Director  1 student
<table>
<thead>
<tr>
<th>Required Courses (18 CH) Course Number (CH) Course Title</th>
<th>Gr</th>
<th>Sem</th>
<th>Notes</th>
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<td>Core Courses (15 SH)</td>
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<td>Research Experience (3 CH)</td>
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<td>NMS 9654 (3 CH) Laboratory Rotation and Seminar</td>
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<tr>
<td>Graduate Level Cognate Courses (9 CH)</td>
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Reviewed by: ___________________________ Student: ___________________________
### PhD Program in Neuromotor Science – Semester Progress Tracking Form

Name: ____________________  TUID ___________  Date: ________

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<td>NMS 9999 (3 CH)</td>
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Reviewed by: ____________________  Student: ____________________