**Marshall University Course Syllabus**

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| --- | --- |
| Course Name | DNA Technical Assistance Program II (DNA TAP II)  FSC 643 |
| College/Department | Graduate/Forensic Science |
| Semester | Spring 2018 |
| Instructor name and title | Laura Kuyper, MSFS, Forensic DNA Analyst / Quality Assurance Manager |
| Instructor Email | [Kuyper1@marshall.edu](mailto:Kuyper1@marshall.edu) |
| Instructor Telephone | (304) 691-8948; cell (606) 831-8217 |
| Instructor Office Location | Marshall University Forensic Science Center DNA Laboratory, 123 |
| Instructor Office Hours | By appointment; available M-F 9:00 am to 5:00 pm |
| Course Start Date | January 12, 2018 |
| Course End Date | May 4, 2018 |

**Course Meeting Time**

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| --- | --- |
| Dates/Times | Friday 2:00 to 5:00 pm |
| Location | Annex Lab / Annex A115 Class Room |

Information for drop or withdraw available on the Academic Calendar at: <http://www.marshall.edu/calendar/academic/>.

If you should withdraw from this course, please inform the instructor at your earliest convenience.

**COURSE MATERIALS AND COST**

The following titles are not required texts for this course but rather recommended for additional information pertaining to the covered material. Lectures and laboratory demonstrations will be accompanied by provided handouts.

|  |  |
| --- | --- |
| Title | An Introduction to Forensic Genetics |
| Author(s) | William Goodwin, Adrian Linacre, Sibte Hadi |
| Publisher | John Wiley & Sons, Limited |
| Edition | First Edition |
| ISBN | 978-0-470-01025-9 |

|  |  |
| --- | --- |
| Title | Fundamentals of Forensic DNA Typing |
| Author(s) | John M. Butler |
| Publisher | Elsevier |
| Edition | Second Edition |
| ISBN | 978-0-12-374999-4 |

Estimated cost for all books and materials for this course will be the cost of ink for personal printing.

**COURSE DETAILS**

**Description:**

The goal of the DNA Technical Assistance Program (DNA TAP) is to prepare select students for placement in host forensic laboratories for validation studies. Although the TAP placement of all students enrolled in this course cannot be guaranteed, the course administrators will work diligently with each student to ensure that they are placed as DNA Technical Assistants or in another DNA Internship. During this course, the student will undergo intense hands-on laboratory exercises including analytical procedures, instrument training, and data analysis. In addition, participants will undergo troubleshooting activities throughout the analytical process as well as validation planning exercises. All activities will be in preparation for placement assignments. The general instruction scheme is to introduce all students to DNA extraction, quantitation, amplification and electrophoresis applications in a hands-on, realistic environment designed to mimic Forensic DNA experiments as accurately as possible. Additionally, students will participate in experimental design and preparation to introduce material requirement concerns and purchasing issues commonly seen in the laboratory environment. This course is unlike any other course offered at the MUFSC and because of this, schedule adjustments could potentially occur regularly at short notice. Participating students are expected to anticipate the unexpected and work with instructors to achieve the goals of the course.

**Credit Hours:** 2

**Prerequisites:** DNA TAP I

**Objectives:**

1. To accelerate the understanding and familiarity of forensic DNA technologies through intensive lectures and demonstrations that may include:

DNA extraction methods *(Manual and Robotic)*

DNA quantification methods *(AB 7500 and Real-time PCR)*

DNA PCR-based amplification methods *(STR and YSTR)*

Capillary Electrophoresis Technologies *(AB 310, 3100, 3130xl, and 3500xl)*

Data analysis methods *(GeneMapper ID-X)*

Validation procedures

Quality Control and Quality Assurance

2. To gain practical skills through demonstrations of the above technologies. Because the laboratory activities will most likely be required to perform necessary validation studies in host laboratories, students will be prepared to train in the spring semester for various validation projects.

**COURSE SCHEDULE, ACTIVITIES AND POLICIES**

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| --- | --- |
| **Week** | **Topics and Activities** |
| Week 1 | Validation overview |
| Week 2 | Laboratory work; Outline of projects (timeline, supplies inventory, reagent preparation, sample preparation, etc.) |
| Week 3 | Laboratory work; Outline of projects (timeline, supplies inventory, reagent preparation, sample preparation, etc.) |
| Week 4 | Laboratory work |
| Week 5 | Laboratory work |
| Week 6 | Laboratory work |
| Week 7 | No class; AAFS Meeting |
| Week 8 | Laboratory work |
| Week 9 | Laboratory work |
| Week 10 | Laboratory work |
| Week 11 | No class; Spring Break |
| Week 12 | Laboratory work |
| Week 13 | Laboratory work |
| Week 14 | Laboratory work |
| Week 15 | Laboratory work |
| Week 16 | Evaluation of laboratory work |
| Week 17 | Evaluation of laboratory work |

~This is subject to change at any time~

**Examinations**

|  |  |
| --- | --- |
| Number of Exams | None |
| Types of Questions | N/A |
| Points per Exam | N/A |
| Total Points | N/A |

**Quizzes**

|  |  |
| --- | --- |
| Number of Quizzes | 0 to 5 |
| Types of Questions | Quizzes may include multiple choice, statement completion, and short answer essay questions and will cover work in the laboratory |
| Points per Quiz | 5 \* |
| Total Points | Up to 25 |

*\*Each quiz will include a single bonus question worth 0.5 points (10% of the total score). Bonus question points do not count against the student score.*

**Assignments**

Training Log required.

Written and laboratory assignments will be based on the DNA TAP assignment of the individual participant and given at the instructor’s discretion.

**Grading Breakdown**

|  |  |
| --- | --- |
| **Item** | **Percent of Final Grade** |
| Examinations | N/A |
| Quizzes (if applicable) | 10 |
| Assignments – Laboratory Project | 90-100 |
| Total | 100 |

**Policies**

No make-up lecture presentation, laboratory instruction, quizzes or exams will be available. Any information presented could be included on any quizzes or assignments.

**GRADING**

The traditional 10 point grading scheme will be used for this course.

**COMMUNICATION**

Students may contact the instructor at any time for clarification on presented material or additional information. Email is preferred and will yield a quicker response time in most cases, however, you may stop by my office or call if you prefer.

**UNIVERSITY POLICIES**

By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/?page_id=802>

Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment.

**Academic Dishonesty**

All students should be familiar with the university’s policy concerning academic dishonesty. This policy can be found on pp. 66 - 68 of the undergraduate catalog <http://www.marshall.edu/catalog/undergraduate/ug_10-11_published.pdf>, or on pp. 61 – 63 in the 2009 online graduate catalog <http://www.marshall.edu/catalog/graduate/S2009/gr_sp09_published.pdf>. (Faculty are encouraged to add any additional information specific to their expectations and/or rules regarding academic dishonesty in their class).

**Policy for Students with Disabilities**

Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities.  University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271 to provide documentation of their disability.  Following this, the DSS Coordinator will send a letter to each of the student’s instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading.  The instructor and student will meet to discuss how the accommodation(s) requested will be provided.  For more information, please visit <http://www.marshall.edu/disabled> or contact Disabled Student Services Office at Prichard Hall 11, phone 304-696-2271.

# University Computing Services’ Acceptable Use Policy:

# All students are responsible for knowing this policy, which can be found on the web at <http://www.marshall.edu/ucs/CS/accptuse.asp>.

**Affirmative Action Policy**:

This course will follow Marshall University’s policy on Affirmative Action, which can be found on p. 63 of the undergraduate catalog <http://www.marshall.edu/catalog/undergraduate/ug_10-11_published.pdf>, or on pp. 16-17 of the 2008 graduate catalog <http://www.marshall.edu/catalog/graduate/S2009/gr_sp09_published.pdf>. Specifically, all students will be afforded equal opportunity without regard to race, color, sex, religion, age, disability, national origin, or sexual orientation.

**Fair Use of Copyrighted Works:**

Please note that the instructor may use some works that are copyrighted by the publisher or original author. These works are provided to students under the Educational Fair Use provision of Title 17 of the US Code and are not to be shared with individuals who are not enrolled in this course.

**Attendance is mandatory:**

Completion of an Instructor-signed ***Student Absence Form*** is facilitated by the Student and sent on to the Program Coordinator for all absences.  This may occur BEFORE the absence (recommended) or on the first day of class upon return.  Whether the absence is EXCUSED or UNEXCUSED will dictate whether the student will be granted make-ups and whether they will receive point or grade reductions.  Completed Absence Forms will be placed in the student’s formal file.  A Completed Absence Form is one bearing signatures of the student, instructor, and program coordinator.  If the student is not able to make it to class for any reason, a phone call or e-mail to the Instructor is required BEFORE class time as this is a standard employer practice.

**Excused Absences:**

The Program Coordinator and Instructor must be notified of absences.  Formal documentation is required for Excused Absences which may involve physician statements excusing the student from class, obituaries, or professional travel documentation.  With an Excused Absence, the student may be asked to take an exam BEFORE the scheduled date.  No exams, labs, or other formal exercises will be made up without an Excused Absence.

**Unexcused Absences:**

Any unexcused absence in which a student misses a lab or exam or other graded activity identified by the Instructor at the beginning of the semester will result in the deduction of one letter grade from the student’s final grade or a reduction of points as specified in the Course Syllabus.  Any quizzes missed during an unexcused absence will result in a zero.

**Medical Withdrawal:**

<http://www.marshall.edu/wpmu/student-affairs/files/2011/08/Medical-Withdrawal-Policy.pdf>.

**Final Grade Appeal:**

Any student who believes the final course grade is wrong may appeal the grade. See (<http://www.marshall.edu/graduate/graduate-student-appeals/>). The appeal is limited to three areas: 1) error in calculation or posting of the grade, 2) change in grading standards made without students’ notice, or prejudicial or capricious grading standards.  There are several steps in the appeal process. These are designed to allow the student, faculty, and program director to correct the error or come to a mutual compromise before it goes to the Graduate College/College of Science Dean’s Office for final review.