**PROGRAM CHANGES**

 WEBER STATE UNIVERSITY

**Submission Date: 1/21/2015**

**Submitter Name: Janet Oja**

**College: Dumke College of Health Professions**

**Department**: Medical Laboratory Sciences

**Program Title: Medical Laboratory Sciences (BS)**

Check all that apply:

\_\_X New course(s) required for major, minor, emphasis, or concentration.

\_\_\_Modified course(s) required for major, minor, emphasis, or concentration.

\_\_\_Credit hour change(s) required for major, minor, emphasis, or concentration.

\_\_\_\_Credit hour change(s) for a course which is required for the major, minor, emphasis, or concentration.

\_\_\_\_Attribute change(s) for any course.

\_\_\_\_Program name change.

\_\_\_\_Deletion of required course(s).

\_\_\_\_Program mode of delivery/format change (Graduate Programs ONLY)

\_\_\_\_Other changes (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**JUSTIFICATION:** This course will provide MLS students with clinical laboratory immunology theory and laboratory practices necessary for a career in clinical laboratory sciences. MLS graduates are required to pass a national certification exam in order to work in a clinical lab setting. Data pulled from 2007-2012 ASCP certification exam scores statistically show that WSU MLS BS students fall significantly below the national average for the laboratory immunology portion of the exam. The MLS department hired a clinical immunologist, Dr. Matthew Nicholaou in 2012. He created a 4 credit hour course, MLS 3810 Clinical Laboratory Immunology and Virology including a clinical laboratory section, with hopes of improving these scores. This course has been offered experimentally for the last 2 years and we have seen an increase in our overall certification scores and in student satisfaction evaluations. The clinical lab’s need for MLS graduates with a basic understanding and clinical application of such burgeoning techniques as flow cytometry, molecular diagnostics and in situ tissue testing requires clinical immunology expertise, which the MLS department now has with the hiring of Dr. Nicholaou. The majority of MLS programs across the country teach Immunology as part of their core curriculum, including the University of Utah and Brigham Young University, so the decision to add clinical immunology to Weber State University’s MLS BS program makes sense. The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) is the WSU MLS department’s accrediting agency and is scheduling a re-accreditation site visit February 2015 under new guidelines. Immunology is a required course based on these NAACLS guidelines and is to include “principles and methodologies, performance of assays, problem-solving, troubleshooting techniques, interpretation of clinical procedures and results, statistical approaches to data evaluation, and continuous assessment of laboratory services for all major areas practices in the contemporary clinical laboratory.” (NAACLS Standard 22)

Copy the present program from the current catalog and add the required changes (exactly as you wish them to appear in the catalog). Use strikeout (~~strikeout~~) when deleting items in the program and highlight (highlight) when adding items. If multiple changes are being proposed, please provide a summary.

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| **Major Course Requirements for BS Degree****Core Medical Lab Courses Required (33 credit hours)*** [MLS 1113 - Introduction to Medical Laboratory Practices](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 1114 - Principles of Hematology and Hemostasis](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 2210 - Principles of Immunohematology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)**
* [MLS 2211 - Principles of Clinical Chemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)**
* [MLS 2212 - Principles of Clinical Microbiology I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 2213 - Principles of Clinical Chemistry II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)**
* [MLS 2214 - Principles of Clinical Microbiology II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 2256 - Supervised Clinical Experience I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**
* [MLS 2257 - Supervised Clinical Experience II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**

**Note:***Transfer students must have completed a MLS/MLT program and be MLT certified to enter the BS program.***Courses Required for Junior and Senior Curriculum***Select one of the following tracks:***Track I (Laboratory professional)*** [MLS 3301 - Online Orientation for BS Degree](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)** *Online students only*
* [MLS 3302 - Biostatistics, Research Methods, and Laboratory Practices](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 3310 - Advanced Immunohematology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* **MLS 3312 – Clinical Laboratory Immunology and Virology Credits: (4)**
* [MLS 3313 - Advanced Hematology and Hemostasis](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 3314 - Advanced Clinical Chemistry](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
* [MLS 3316 - Advanced Clinical Microbiology and Molecular Diagnostics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 4411 - MLS Simulated Laboratory I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 4412 - MLS Simulated Laboratory II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 4415 - Laboratory Teaching and Supervision I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
* [MLS 4453 - Supervised Clinical Experience I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**
* [MLS 4454 - Supervised Clinical Experience II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**
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* [CHEM 1210 PS - Principles of Chemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)** \* and
* [CHEM 1220 - Principles of Chemistry II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)** \*
* [CHEM 2310 - Organic Chemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** \* and
* [CHEM 2315 - Organic Chemistry I Lab](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)** \*
* or
* [CHEM 1110 PS - Elementary Chemistry](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)** \* and
* [CHEM 1120 - Elementary Organic Bio-Chemistry](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)** \*
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 * [HTHS 1110 LS - Biomedical Core](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** or
* [ZOOL 2200 - Human Physiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
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* [HTHS 1111 - Biomedical Core (continued)](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** or
* [ZOOL 2100 - Human Anatomy](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** or
* [PHYS 1010 PS - Elementary Physics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
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* [MICR 2054 LS - Principles of Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** or
* [MICR 1113 LS - Introductory Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
*
* [~~MICR 3254 - Immunology~~](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238)**~~Credits:~~****~~(4)~~**~~or~~
* [~~MICR 3203 - The Immune System in Health & Disease~~](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238)**~~Credits:~~****~~(3)~~**
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* [MICR 3305 - Medical Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)** or
* [MICR 3603 - Advanced Microbiology for the Health Professions](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)** or
* [HIM 3200 - Epidemiology and Biostatistics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)** or
* [HAS 4400 - Legal and Ethical Aspects of Health Administration](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**

**Note:***\* Students seeking a BS degree are required to complete a minimum of two semesters of Chemistry to include an Organic or Biochemistry course.***Electives: (4 credit hours required)*** [MLS 4409 - Clinical Correlation](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)** and
* [MLS 4410 - Interdisciplinary Health Care Teams](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
* or
* [MLS 4803 - Research Projects in Medical Laboratory Sciences I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(2)** and
* [MLS 4804 - Research Projects in Medical Laboratory Sciences II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(2)**

**Track II (Pre-professional)*** [MLS 3302 - Biostatistics, Research Methods, and Laboratory Practices](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 3310 - Advanced Immunohematology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* **MLS 3312 – Clinical Laboratory Immunology and Virology Credits: (4)**
* [MLS 3313 - Advanced Hematology and Hemostasis](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 3314 - Advanced Clinical Chemistry](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
* [MLS 3316 - Advanced Clinical Microbiology and Molecular Diagnostics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [MLS 4453 - Supervised Clinical Experience I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**
* [MLS 4454 - Supervised Clinical Experience II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**
* [CHEM 1210 PS - Principles of Chemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)**
* [CHEM 1220 - Principles of Chemistry II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)**
* [CHEM 2310 - Organic Chemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** and
* [CHEM 2315 - Organic Chemistry I Lab](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**
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* [CHEM 2320 - Organic Chemistry II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** and
* [CHEM 2325 - Organic Chemistry II Lab](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)**
* or
* [CHEM 3070 - Biochemistry I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
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* [MICR 2054 LS - Principles of Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** or
* [MICR 1113 LS - Introductory Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
*
* [MICR 3254 - Immunology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)** or
* [MICR 3203 - The Immune System in Health & Disease](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
* [MICR 3305 - Medical Microbiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)** or
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* [HIM 3200 - Epidemiology and Biostatistics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)** or
* [HAS 4400 - Legal and Ethical Aspects of Health Administration](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
* [PHYS 2010 PS - College Physics I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)**
* [PHYS 2020 - College Physics II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(5)**
* [ZOOL 2100 - Human Anatomy](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [ZOOL 2200 - Human Physiology](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**
* [ZOOL 3300 - Genetics](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(4)**

**Electives: (4 credit hours required)*** [MLS 4409 - Clinical Correlation](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(1)** and
* [MLS 4410 - Interdisciplinary Health Care Teams](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(3)**
* or
* [MLS 4803 - Research Projects in Medical Laboratory Sciences I](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(2)** and
* [MLS 4804 - Research Projects in Medical Laboratory Sciences II](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238) **Credits:** **(2)**

**Note:***Equivalencies to Biomedical Core (*[*HTHS 1110*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238#tt6634)*and*[*HTHS 1111*](http://catalog.weber.edu/preview_program.php?catoid=7&poid=2843&returnto=1238#tt3693)*)** [*ZOOL 2200 - Human Physiology*](http://catalog.weber.edu/preview_course_nopop.php?catoid=7&coid=24840)

***(4)****and** [*ZOOL 2100 - Human Anatomy*](http://catalog.weber.edu/preview_course_nopop.php?catoid=7&coid=24839)

***(4)****or** [*PHYS 1010 PS - Elementary Physics*](http://catalog.weber.edu/preview_course_nopop.php?catoid=7&coid=24785)

***(3)*** |

 Return to: [Dr. Ezekiel R. Dumke College of Health Professions](http://catalog.weber.edu/content.php?catoid=7&navoid=1238)

After the appropriate Approvals, **Email the electronic file (Microsoft Word.docx) to** bstockberger@weber.edu. You may scan the Approval Page with the Signatures and email it, send a hard copy to MC 1033 through campus mail or bring to the Faculty Senate office MA210J. Send all supporting documents pertaining to your proposal.

**INFORMATION PAGE**

Did this program change receive unanimous approval within the Department? \_X\_Yes\_\_ If not, what are the major concerns raised by the opponents?

Explain any effects this program change will have on program requirements or enrollments in other departments including the Bachelor of Integrated Studies Program. In the case of similar offerings or affected programs, **you should include letters from the departments in question stating their support or opposition to the proposed program**.

This course has been taught experimentally for 2 years as MLS 3810 and is a new MLS Immunology course designed to focus on the clinical laboratory applications of immunology. There is a course offered by the WSU Microbiology Department, MICR 3203 – The Immune System in Health & Disease and MICR 3254 - Immunology that does cover basic immunology theory. It does not provide clinical laboratory specific application or include a clinical laboratory component required for laboratory professional track MLS students. Pre-professional MLS students will still be required to take either MICR 3203 or MICR 3254. This proposed course will focus on this clinical laboratory aspect of Immunology along with clinical case studies and hands-on laboratory applications. A revision of the NAACLS standards, which states that all MLS disciplines taught (which is to include immunology) must include: "principles and methodologies, performance of assays, problem-solving, troubleshooting techniques, interpretation of clinical procedures and results, statistical approaches to data evaluation, and continuous assessment of laboratory services for all major areas practiced in the contemporary clinical laboratory." (NAACLS Standard 22) The clinical lab’s need for MLS graduates with a basic understanding and clinical application of such burgeoning techniques as flow cytometry, molecular diagnostics and in situ hybridization testing requires clinical laboratory immunology expertise, which the MLS department has. The MLS department met with the microbiology department to discuss the MLS department's decision to implement a MLS specific Immunology course and remove the requirement for laboratory track MLS students to take MICR 3203 or MICR 3254. The impact to the Microbiology department will be moderate and verbal support has been given which will be followed by a letter of support from the department.

Indicate the number of credit hoursfor course work within the program. (Do not include credit hours for General Education, Diversity, or other courses unless those courses fulfill requirements within the proposed program.)

Track I = 43, Track II = 51-53

Indicate the number of credit hours for course work within the current program. (Do not include credit hours for General Education, Diversity, or other courses unless those courses fulfill requirements within the current program.)

Track I = 42, Track II = 51-53

**Graduate Programs only**: Describe any proposed changes in the instructional mode of delivery or course format that are program-wide in nature or that affect more than one-third of the course taught in the program (e. g. changing from in-class to online instruction).