DISCOVERY LAB (DISC)

DISC 591 Discovery Lab Research Projects for Team-Based Experiential Learning Units: 3.00

This course is designed to provide team-based experiential learning to undergraduate students over two semesters so that they have the competencies required to successfully contribute to interdisciplinary research that advances the biomedical and health-care sectors of our society. This course will provide opportunities for these teams of students to gain experience in various research disciplines, including biochemistry, microbiology, cell biology, physiology, anatomy, neuroscience, computational analyses of data sets, and knowledge translation. DISC students can expect to learn current methods to observe, dissect, manipulate, image, and measure the functions of organisms, organs, tissues, cells, and the molecular machinery within these biological media. Students will also gain experience with examining relevant literature, developing research questions, establishing and testing hypotheses, and designing a research plan with a budget and safety protocols for their team to execute. Each student team will work with a supervisor who will guide the team to design a group project that utilizes the infrastructure in the Discovery labs, and that adheres to the highest standards of professional behaviour.

Learning Hours: 120 (36 Laboratory, 84 Group Learning)

Requirements: Prerequisite Level 3 or above and registration in a BCHM, BHSc, BIOL, CHEM, KINE, or LISC Plan, and a cumulative GPA of 3.2 or higher, and acceptance of a supervisor. Exclusion Maximum 12.0 units from: ANAT 499/12.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0. Note BIOL, CHEM, and KINE research students will also be excluded if they are already enrolled in more than 6.0 units of research courses.

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Develop discipline-specific skillsets and demonstrate an understanding of the philosophical and logistical aspects of team-based research.
2. Build a research project from the ground up, following the same trajectory as established researchers in terms of using the literature to recognize gaps in our understanding, so that hypotheses can be constructed that can be tested.
3. Refine critical thinking skills, and analysis pipelines.

DISC 592 Discovery Lab Research Projects for Team-Based Experiential Learning Units: 3.00

This course is designed to provide team-based experiential learning to undergraduate students over two semesters so that they have the competencies required to successfully contribute to interdisciplinary research that advances the biomedical and health-care sectors of our society. This course will provide opportunities for these teams of students to gain experience in various research disciplines, including biochemistry, microbiology, cell biology, physiology, anatomy, neuroscience, computational analyses of data sets, and knowledge translation. DISC students can expect to learn current methods to observe, dissect, manipulate, image, and measure the functions of organisms, organs, tissues, cells, and the molecular machinery within these biological media. Students will also gain experience with examining relevant literature, developing research questions, establishing and testing hypotheses, and designing a research plan with a budget and safety protocols for their team to execute. Each student team will work with a supervisor who will guide the team to design a group project that utilizes the infrastructure in the Discovery labs, and that adheres to the highest standards of professional behaviour.

Learning Hours: 120 (36 Laboratory, 84 Group Learning)

Requirements: Prerequisite Level 3 or above and registration in a BCHM, BHSc, BIOL, CHEM, KINE, or LISC Plan, and a cumulative GPA of 3.2 or higher, and acceptance of a supervisor. Exclusion Maximum 12.0 units from: ANAT 499/12.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0. Note BIOL, CHEM, and KINE research students will also be excluded if they are already enrolled in more than 6.0 units of research courses.

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Develop discipline-specific skillsets and demonstrate an understanding of the philosophical and logistical aspects of team-based research.
2. Build a research project from the ground up, following the same trajectory as established researchers in terms of using the literature to recognize gaps in our understanding, so that hypotheses can be constructed that can be tested.
3. Refine critical thinking skills, and analysis pipelines.

DISC 593 Discovery Lab Research Projects for Team-Based Experiential Learning Units: 3.00

This course is designed to provide team-based experiential learning to undergraduate students over two semesters so that they have the competencies required to successfully contribute to interdisciplinary research that advances the biomedical and health-care sectors of our society. This course will provide opportunities for these teams of students to gain experience in various research disciplines, including biochemistry, microbiology, cell biology, physiology, anatomy, neuroscience, computational analyses of data sets, and knowledge translation. DISC students can expect to learn current methods to observe, dissect, manipulate, image, and measure the functions of organisms, organs, tissues, cells, and the molecular machinery within these biological media. Students will also gain experience with examining relevant literature, developing research questions, establishing and testing hypotheses, and designing a research plan with a budget and safety protocols for their team to execute. Each student team will work with a supervisor who will guide the team to design a group project that utilizes the infrastructure in the Discovery labs, and that adheres to the highest standards of professional behaviour.

Learning Hours: 120 (36 Laboratory, 84 Group Learning)

Requirements: Prerequisite Level 3 or above and registration in a BCHM, BHSc, BIOL, CHEM, KINE, or LISC Plan, and a cumulative GPA of 3.2 or higher, and acceptance of a supervisor. Exclusion Maximum 12.0 units from: ANAT 499/12.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0. Note BIOL, CHEM, and KINE research students will also be excluded if they are already enrolled in more than 6.0 units of research courses.

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Develop discipline-specific skillsets and demonstrate an understanding of the philosophical and logistical aspects of team-based research.
2. Build a research project from the ground up, following the same trajectory as established researchers in terms of using the literature to recognize gaps in our understanding, so that hypotheses can be constructed that can be tested.
3. Refine critical thinking skills, and analysis pipelines.
4. Analyze and present your data in a publication quality manner, and disseminate the data both orally, and in

DISC 594 Discovery Lab Research Projects for Team-Based Experiential Learning Units: 3.00

This course is designed to provide team-based experiential learning to undergraduate students over two semesters so that they have the competencies required to successfully contribute to interdisciplinary research that advances the biomedical and health-care sectors of our society. This course will provide opportunities for these teams of students to gain experience in various research disciplines, including biochemistry, microbiology, cell biology, physiology, anatomy, neuroscience, computational analyses of data sets, and knowledge translation. DISC students can expect to learn current methods to observe, dissect, manipulate, image, and measure the functions of organisms, organs, tissues, cells, and the molecular machinery within these biological media. Students will also gain experience with examining relevant literature, developing research questions, establishing and testing hypotheses, and designing a research plan with a budget and safety protocols for their team to execute. Each student team will work with a supervisor who will guide the team to design a group project that utilizes the infrastructure in the Discovery labs, and that adheres to the highest standards of professional behaviour.

Learning Hours: 120 (36 Laboratory, 84 Group Learning)

Requirements: Prerequisite Level 3 or above and registration in a BCHM, BHSc, BIOL, CHEM, KINE, or LISC Plan, and a cumulative GPA of 3.2 or higher, and acceptance of a supervisor. Exclusion Maximum 12.0 units from: ANAT 499/12.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0. Note BIOL, CHEM, and KINE research students will also be excluded if they are already enrolled in more than 6.0 units of research courses.

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Develop discipline-specific skillsets and demonstrate an understanding of the philosophical and logistical aspects of team-based research.
2. Build a research project from the ground up, following the same trajectory as established researchers in terms of using the literature to recognize gaps in our understanding, so that hypotheses can be constructed that can be tested.
3. Refine critical thinking skills, and analysis pipelines.
4. Analyze and present your data in a publication quality manner, and disseminate the data both orally, and in

DISC 598 Discovery Lab Research Projects for Team-Based Experiential Learning Units: 6.00

This course is designed to provide team-based experiential learning to undergraduate students over two semesters so that they have the competencies required to successfully contribute to interdisciplinary research that advances the biomedical and health-care sectors of our society. This course will provide opportunities for these teams of students to gain experience in various research disciplines, including biochemistry, microbiology, cell biology, physiology, anatomy, neuroscience, computational analyses of data sets, and knowledge translation. DISC students can expect to learn current methods to observe, dissect, manipulate, image, and measure the functions of organisms, organs, tissues, cells, and the molecular machinery within these biological media. Students will also gain experience with examining relevant literature, developing research questions, establishing and testing hypotheses, and designing a research plan with a budget and safety protocols for their team to execute. Each student team will work with a supervisor who will guide the team to design a group project that utilizes the infrastructure in the Discovery labs, and that adheres to the highest standards of professional behaviour.

Learning Hours: 240 (72 Laboratory, 168 Group Learning)

Requirements: Prerequisite Level 3 or above and registration in a BCHM, BHSc, BIOL, CHEM, KINE, or LISC Plan, and a cumulative GPA of 3.2 or higher, and acceptance of a supervisor. Exclusion Maximum 12.0 units from: ANAT 499/12.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0. Note BIOL, CHEM, and KINE research students will also be excluded if they are already enrolled in more than 6.0 units of research courses.

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Develop discipline-specific skillsets and demonstrate an understanding of the philosophical and logistical aspects of team-based research.
2. To build a project from the ground up, following the same trajectory as established researchers in terms of using the literature to recognize gaps in our understanding, so that hypothesis can be constructed that you can test.
3. Hone and refine critical thinking skills, and analysis pipelines.
4. Analyze and present your data in a publication quality manner, and disseminate that data both orally, and in

DISC 599 Discovery Lab Research Projects for Team-Based Experiential Learning Units: 6.00

This course is designed to provide team-based experiential learning to undergraduate students over two semesters so that they have the competencies required to successfully contribute to interdisciplinary research that advances the biomedical and health-care sectors of our society. This course will provide opportunities for these teams of students to gain experience in various research disciplines, including biochemistry, microbiology, cell biology, physiology, anatomy, neuroscience, computational analyses of data sets, and knowledge translation. DISC students can expect to learn current methods to observe, dissect, manipulate, image, and measure the functions of organisms, organs, tissues, cells, and the molecular machinery within these biological media. Students will also gain experience with examining relevant literature, developing research questions, establishing and testing hypotheses, and designing a research plan with a budget and safety protocols for their team to execute. Each student team will work with a supervisor who will guide the team to design a group project that utilizes the infrastructure in the Discovery labs, and that adheres to the highest standards of professional behaviour.

Learning Hours: 240 (72 Laboratory, 168 Group Learning)

Requirements: Prerequisite Level 3 or above and registration in a BCHM, BHSc, BIOL, CHEM, KINE, or LISC Plan, and a cumulative GPA of 3.2 or higher, and acceptance of a supervisor. Exclusion Maximum 12.0 units from: ANAT 499/12.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0. Note BIOL, CHEM, and KINE research students will also be excluded if they are already enrolled in more than 6.0 units of research courses.

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Develop discipline-specific skillsets and demonstrate an understanding of the philosophical and logistical aspects of team-based research.
2. To build a project from the ground up, following the same trajectory as established researchers in terms of using the literature to recognize gaps in our understanding, so that hypothesis can be constructed that you can test.
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