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| **Tacoma Community College** | |  |  |  |  |
| **Program Learning Outcome--Five Year Plan** | | |  |  |  |
| Program Name: Natural Sciences | |  |  |  |  |
| Person Submitting Five Year Plan: Kristen Harrison | |  |  |  |  |
| Date Submitted: 4/16/2018 | |  |  |  |  |
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|  | ***Year 1 (2017-2018)*** | ***Year 2 (2018-2019)*** | ***Year 3 (2019-2020)*** | ***Year 4 (2020-2021)*** | ***Year 5 (2021-2022)*** |
| *Program Learning Outcome to be Assessed* | *PLO 5: Demonstrate safe and proper use of scientific instrumentation, measuring devices, chemical reagents, media, and/or other tools of science in a laboratory or field setting relevant to specific disciplines of science*  *PLO 3: Communicate the primary principles and processes underlying at least one natural system*  *PLO2: Explain the importance of hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors* | *PLO 5: Demonstrate safe and proper use of scientific instrumentation, measuring devices, chemical reagents, media, and/or other tools of science in a laboratory or field setting relevant to specific disciplines of science*  *PLO 3: Communicate the primary principles and processes underlying at least one natural system*  *PLO2: Explain the importance of hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors*  *PLO 1: Evaluate information scientifically in the context of his/her own life*  *PLO 4: Perform and effectively communicate the results of scientific investigations, and explain how research is done in science* | *PLO 5: Demonstrate safe and proper use of scientific instrumentation, measuring devices, chemical reagents, media, and/or other tools of science in a laboratory or field setting relevant to specific disciplines of science*  *PLO 3: Communicate the primary principles and processes underlying at least one natural system*  *PLO2: Explain the importance of hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors* | *PLO 5: Demonstrate safe and proper use of scientific instrumentation, measuring devices, chemical reagents, media, and/or other tools of science in a laboratory or field setting relevant to specific disciplines of science*  *PLO 3: Communicate the primary principles and processes underlying at least one natural system*  *PLO2: Explain the importance of hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors*  *PLO 1: Evaluate information scientifically in the context of his/her own life*  *PLO 4: Perform and effectively communicate the results of scientific investigations, and explain how research is done in science* | *PLO 5: Demonstrate safe and proper use of scientific instrumentation, measuring devices, chemical reagents, media, and/or other tools of science in a laboratory or field setting relevant to specific disciplines of science*  *PLO 3: Communicate the primary principles and processes underlying at least one natural system*  *PLO2: Explain the importance of hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors* |
| *Brief Description of Assessment Method Relating to the Program Learning Outcome(s)* | *PLO 5: Biology lab technicians will collect and analyze data on proper microscope care and storage. Chemistry lab technicians will document all accidents/spills/etc of all chemistry reagents in all chemistry classes.*  *PLO 3: The national HAPS exam is given at the end of BIOL 242 each quarter to all sections. All sections of BIOL 160 participate in a common final exam. All sections of CHEM 163 and CHEM 263 will take the ACS national exams. All astronomy sections will take the same online final exam each quarter.*  *PLO 2: The BIOL 160 Common final exam already has a test bank for scientific method/hypothesis testing. We will use quiz data from this to report on this PLO each year.* | *PLO 5: Biology lab technicians will collect and analyze data on proper microscope care and storage. Chemistry lab technicians will document all accidents/spills/etc of all chemistry reagents in all chemistry classes.*  *PLO 3: The national HAPS exam is given at the end of BIOL 242 each quarter to all sections. All sections of BIOL 160 participate in a common final exam. All sections of CHEM 163 and CHEM 263 will take the ACS national exams. All astronomy sections will take the same online final exam each quarter.*  *PLO 2: The BIOL 160 Common final exam already has a test bank for scientific method/hypothesis testing. We will use quiz data from this to report on this PLO each year.*  *PLO 1&4:* These PLOs focus on science literacy and communication. We will administer a free and open-access test called the Test of Science Literacy skills (TOSLS) through Canvas to all interested courses, at the end of winter quarter. | *PLO 5: Biology lab technicians will collect and analyze data on proper microscope care and storage. Chemistry lab technicians will document all accidents/spills/etc of all chemistry reagents in all chemistry classes.*  *PLO 3: The national HAPS exam is given at the end of BIOL 242 each quarter to all sections. All sections of BIOL 160 participate in a common final exam. All sections of CHEM 163 and CHEM 263 will take the ACS national exams. All astronomy sections will take the same online final exam each quarter.*  *PLO 2: The BIOL 160 Common final exam already has a test bank for scientific method/hypothesis testing. We will use quiz data from this to report on this PLO each year.* | *PLO 5: Biology lab technicians will collect and analyze data on proper microscope care and storage. Chemistry lab technicians will document all accidents/spills/etc of all chemistry reagents in all chemistry classes.*  *PLO 3: The national HAPS exam is given at the end of BIOL 242 each quarter to all sections. All sections of BIOL 160 participate in a common final exam. All sections of CHEM 163 and CHEM 263 will take the ACS national exams. All astronomy sections will take the same online final exam each quarter.*  *PLO 2: The BIOL 160 Common final exam already has a test bank for scientific method/hypothesis testing. We will use quiz data from this to report on this PLO each year.*  *PLO 1&4:* These PLOs focus on science literacy and communication. We will administer a free and open-access test called the Test of Science Literacy skills (TOSLS) through Canvas to all interested courses, at the end of winter quarter. | *PLO 5: Biology lab technicians will collect and analyze data on proper microscope care and storage. Chemistry lab technicians will document all accidents/spills/etc of all chemistry reagents in all chemistry classes.*  *PLO 3: The national HAPS exam is given at the end of BIOL 242 each quarter to all sections. All sections of BIOL 160 participate in a common final exam. All sections of CHEM 163 and CHEM 263 will take the ACS national exams. All astronomy sections will take the same online final exam each quarter.*  *PLO 2: The BIOL 160 Common final exam already has a test bank for scientific method/hypothesis testing. We will use quiz data from this to report on this PLO each year.* |
| *Lead contact person* | *PLO 5: Susan Bennett for microscope care, Diane Valdez for chemistry. Susan Bennett will compile and summarize the data*  *PLO 3: All data for PLO 3 for the academic year will be compiled and analyzed by the following individuals and reported in the annual program review. HAPS – Pattie Green, BIOL 160 – Ken Cushman, CHEM 163 – Mark Allen, CHEM 263 – Jeff Engle, Astronomy – Ivan Ramirez.*  *PLO2: Ken Cushman will give a yearly report for the program review* | *PLO 5: Susan Bennett for microscope care, Diane Valdez for chemistry. Susan Bennett will compile and summarize the data*  *PLO 3: All data for PLO 3 for the academic year will be compiled and analyzed by the following individuals and reported in the annual program review. HAPS – Pattie Green, BIOL 160 – Ken Cushman, CHEM 163 – Mark Allen, CHEM 263 – Jeff Engle, Astronomy – Ivan Ramirez.*  *PLO2: Ken Cushman will give a yearly report for the program review*  *PLO 1&4: Kristen Harrison will head up the administration and analysis of the TOSLS. It will be given every other year.* | *PLO 5: Susan Bennett for microscope care, Diane Valdez for chemistry. Susan Bennett will compile and summarize the data*  *PLO 3: All data for PLO 3 for the academic year will be compiled and analyzed by the following individuals and reported in the annual program review. HAPS – Pattie Green, BIOL 160 – Ken Cushman, CHEM 163 – Mark Allen, CHEM 263 – Jeff Engle, Astronomy – Ivan Ramirez.*  *PLO2: Ken Cushman will give a yearly report for the program review* | *PLO 5: Susan Bennett for microscope care, Diane Valdez for chemistry. Susan Bennett will compile and summarize the data*  *PLO 3: All data for PLO 3 for the academic year will be compiled and analyzed by the following individuals and reported in the annual program review. HAPS – Pattie Green, BIOL 160 – Ken Cushman, CHEM 163 – Mark Allen, CHEM 263 – Jeff Engle, Astronomy – Ivan Ramirez.*  *PLO2: Ken Cushman will give a yearly report for the program review*  *PLO 1&4: Kristen Harrison will head up the administration and analysis of the TOSLS. It will be given every other year.* | *PLO 5: Susan Bennett for microscope care, Diane Valdez for chemistry. Susan Bennett will compile and summarize the data*  *PLO 3: All data for PLO 3 for the academic year will be compiled and analyzed by the following individuals and reported in the annual program review. HAPS – Pattie Green, BIOL 160 – Ken Cushman, CHEM 163 – Mark Allen, CHEM 263 – Jeff Engle, Astronomy – Ivan Ramirez.*  *PLO2: Ken Cushman will give a yearly report for the program review* |
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| *DLO being assessed by SLIC* | COM/IIT | CRT/RES | ICD/COK | COM/IIT | CRT/RES |