Fall 2005, Revised Summer 2008, Effective Fall 2009[1], Updated Spring 2017
Statewide Engineering AS-T Track 2 Major Related Program (MRP) Agreement

These pathways are applicable to students planning to prepare for various engineering majors at universities in Washington.

This document represents agreement regarding expanded detail for the existing Associate in Science - Transfer, Track 2 between the baccalaureate institutions offering engineering bachelor's degrees and the community and technical college system. Baccalaureate institutions parties to this agreement are: University of Washington Seattle, Washington State University, Eastern Washington University, Gonzaga University, Saint Martin's University, Seattle Pacific University, Seattle University, and Walla Walla University.

Community colleges agree:

- When community colleges list the AS-T, Track 2 in their publications, they will provide the expanded detail shown below regarding the three major pathways in the field of engineering while retaining the current AS-T, Track 2 description for purposes of students majoring in computer science, physics and atmospheric sciences.

- When community colleges award the AS-T degree for engineering students following these expanded details, rather than using AS-T #2 on the transcript, colleges will designate completion as follows for clarity on the transcript and use by SBCTC for tracking reporting purposes:
    - AS-T Bio/Chem E/MRP Exit Code of B (eventually will be O), EPC BIOE and CIP of 14.0701
    - AS-T Comp E EE/MRP Exit Code of B (eventually will be P), EPC of CEE and CIP of 14.1001
    - AS-T Other Engineer/MRP Exit Code B (eventually will be Q), EPC of OTRE and CIP of 14.1901

- If community colleges find that changes to the MRP are needed, they will notify the Instruction Commission, which will, in turn, notify the Joint Transfer Council (JTC). JTC will review the changes, as detailed in the section below (review process here: http://www.wsac.wa.gov/sites/default/files/TransferAgreementRevisions-Oct2011.pdf).

- Where the pathway lists student choice in engineering classes, the published associate degree listing will include advice to students about contacting potential transfer institutions regarding their choices.

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[1] 2008/09 Modifications applicable to all options:

- Removed General Chemistry from Physics requirement and added to new **Chemistry** requirement.
- Moved Computer Programming requirement to **Other Pre-major Prerequisites & Electives** category. Increased credit requirement in this category by 4/5 credits. Removed 'Computer Programming' category (to align with AS-T Track 2 modifications approved by the Higher Education Coordinating Board on September 18, 2008).
- The **Humanities/Fine Arts/English and Social Science** requirements were clarified by duplicating AS-T Track 2 requirements and adding "A course in Economics is recommended" to each option.

The participating baccalaureate institutions agree:

- Students completing the AS-T Track 2 degrees, including those who follow these expanded details will, if admitted to the university, be admitted as juniors with all or most prerequisites for the specific engineering major completed (depending on choices made among engineering electives). In addition, these students will have lower division general education courses partially completed in a manner similar to the partial completion by freshmen-entry engineering students.

- The same 2.0 GPA requirement that applies to AS-T in general applies to these expanded details pathways. Engineering programs are competitive and may require a higher GPA overall or a higher GPA in specific courses.

- Baccalaureate institutions will apply up to 110 quarter credits required under this agreement to the credits required in the bachelor's degree, subject to institutional policy on the transfer of lower division credits.

- Baccalaureate institutions will each build an **alert mechanism** into their curriculum review process for changes related to the prerequisites for the engineering degree.
    - The alert will go to the institution or sector JTC member.
    - If the proposed change will affect lower division course taking, the JTC member will bring the issue to JTC's attention for action to review or update this Major Related Program Agreement.

- Prior to making changes in the admission requirements, institutions agree to participate in the JTC-designed **review process** and to abide by the related implementation timelines (review process here: http://www.wsac.wa.gov/sites/default/files/TransferAgreementRevisions-Oct2011.pdf).
- This statewide process applies only to changes[2] in the requirements for admission to the major. References to changes do not include changes in graduation requirements that are completed at the upper division level or the GPA an institution may establish for admission to a program.

The Joint Transfer Council will:

- Notify the Washington Student Achievement Council when undertaking a review of possible changes in the pathway and of subsequent changes made to the agreement.

[2] As judged by impact on students. This statewide process comes into play when potential majors need to complete specific courses not previously identified or present test results or information not included in the agreement.

Associate in Science –Transfer, Track 2 Expanded Detail for Engineering MRPs

Engineering is a broad discipline and one pathway will not fit the requirements for all sub-disciplines contained within engineering. Therefore, these pathways within the Associate of Science – Transfer, Track 2 Degree are designed for the following major areas:

Associate of Science – Transfer, Track 2 Degree Requirements	**Bioengineering and Chemical pre-Engineering (BIO and CHEM E) Pathway**	**Computer and Electrical pre-Engineering (Comp E and EE) Pathway**	**Mechanical/Civil/Aeronautical/ Industrial/ Materials Science/ pre-Engineering (Other Engineering) Pathway**
Communication Skills (Min. 5 quarter credits) College level composition course.	**Communication Skills** College Writing - ***5 credits***	**Communication Skills** College Writing - ***5 credits***	**Communication Skills** College Writing - ***5 credits***
Mathematics (15 quarter credits) Two courses at or above introductory calculus level (10 cr). Third quarter calculus or approved statistics course chosen with the help of an advisor based on the requirements of the specific discipline at the baccalaureate institution the student plans to attend (5 cr).	**Mathematics** Calculus 1,2,3 - ***15 credits*** Differential Equations - ***3-5 credits***	**Mathematics** Calculus 1,2,3 - ***15 credits*** Differential Equations - ***3-5 credits*** Linear Algebra - ***5 credits***	**Mathematics** Calculus 1,2,3 - ***15 credits*** Differential Equations - ***3-5 credits*** Linear Algebra - ***5 credits***
Physics (15 quarter credits) Calculus-based or non-calculus based sequence including laboratory. Students should be advised that some baccalaureate programs require physics with calculus.	Engineering Physics 1,2,3 + labs - ***15-18 credits***	Engineering Physics 1,2,3 + labs ***15-18 credits***	Engineering Physics 1,2,3 + labs ***15-18 credits***
Chemistry with laboratory (5 quarter credits) required for Engineering majors. Others should select 5 credits of science based on advising.	General Chemistry 1,2,3 + labs ***15-18 credits*** Organic Chemistry 1 + lab - ***4-6 credits*** Organic Chemistry 2 or Biology for Science Majors + labs - ***4-6 credits***	General Chemistry 1 + lab ***5-6 credits***	General Chemistry 1,2 + labs ***10-12 credits***

Associate of Science – Transfer, Track 2 Degree Requirements	Bioengineering and Chemical pre-Engineering (BIO and CHEM E) Pathway	Computer and Electrical pre-Engineering (Comp E and EE) Pathway	Mechanical/Civil/Aeronautical/ Industrial/ Materials Science/ pre-Engineering (Other Engineering) Pathway
Other Pre-major Prerequisites & Electives The remaining 35-quarter credits should be planned with the help of an advisor based on the requirements of the specific discipline at the baccalaureate institution the student selects to attend.	**Engineering (14-15 credits)** *Select 3 electives as appropriate for intended major and intended bachelor's institution:* • Computer Programming - ***4-5 credits*** • Linear Algebra • Calculus 4 (Advanced or Multi-variable Calculus) • Technical Writing • Electrical Circuits • Statics • Thermodynamics • Chemical Process, Principles and Calculations • Biology for Science Majors I + labs • Biology for Science Majors II + labs • Organic Chemistry 2 + labs	**Engineering Required (8-10 credits)** • Electrical Circuits - ***4-5 credits*** • Computer Programming - ***4-5 credits*** **Math, Science & Engr. Electives (20-25 credits)** *Select 5 electives as appropriate for intended major and intended bachelor's institution:* • A second course in Computer Programming – object oriented - ***4-5 credits*** • Innovation in Design • Calculus 4 (Advanced or Multi-variable Calculus) • Technical Writing • Statics • Dynamics • Thermodynamics • Digital Logic • Biology for Science Majors I + labs • General Chemistry 2 + lab • Applied Numerical Methods • Microprocessors	**Engineering Required (15 credits)** • Statics - ***5 credits*** • Mechanics of Materials - ***5 credits*** • Dynamics - ***5 credits*** **Math/Engr Electives – (15 credits)** *Select 4 Electives (15-20 credits) as appropriate for intended major and intended bachelor's institution:* • Computer Programming - ***4-5 credits*** • Innovation in Design • Calculus 4 (Advanced or Multi-variable Calculus) • 3-D Visualization and CAD (Engineering Graphics) • Technical Writing • Thermodynamics • Electrical Circuits • Materials Science • Applied Numerical Methods

Humanities and Social Science (minimum 15 quarter credits) Minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science for a total of 15 credits. Courses taken at the community or technical college to meet the Humanities and Social Sciences requirements in the AS-T will be accepted toward those requirements and counted as General Education Requirements/General University Requirements (GERs/GURs) by the receiving institution.	**Humanities /Fine Arts / English and Social Science (15 credits)** Minimum 15 quarter credits: Minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science for a total of 15 credits. A course in **Economics** is recommended.	**Humanities /Fine Arts / English and Social Science (15 credits)** Minimum 15 quarter credits: Minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science for a total of 15 credits. A course in **Economics** is recommended.	**Humanities /Fine Arts / English and Social Science (15 credits)** Minimum 15 quarter credits: Minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science for a total of 15 credits. A course in **Economics** is recommended.
	Total Maximum Credits 90 - 103	**Total Maximum Credits 95 - 104**	**Total Maximum Credits 102 – 110**

SIGNATURE PAGE

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Participants to the Agreement

The Joint Access Oversight Group (Joint Transfer Council in 2017) reviewed revisions to the 2005 agreement on May 19, 2008 and forwarded it, pending final approval of the proposed changes to the AS-T Track 2 (removing computer science from the requirements in all Track 2 degrees) by the chief academic officers and Engineering Deans at UW Seattle, WSU, EWU, Gonzaga U, Saint Martin's U, Seattle Pacific U, Seattle U, Walla Walla U.

On behalf of the Washington State Community and Technical Colleges

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Deputy Executive Director Date

Approved by the Baccalaureate Institutions:

_____Date_____ _____Date_____

Dean, Eastern Washington University Provost/Chief Academic Officer. Eastern Washington University

_____Date_____ _____Date_____

Dean, Washington State University Provost/Chief Academic Officer. Washington State University

_____Date_____ _____Date_____

Dean, University of Washington, Seattle Provost/Chief Academic Officer. University of Washington, Seattle

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Dean, Seattle Pacific University Provost/Chief Academic Officer, Seattle Pacific University

_____Date_____ _____Date_____

Dean, Seattle University Provost/Chief Academic Officer, Seattle University

_____Date_____ _____Date_____

Dean, Walla Walla University Provost/Chief Academic Officer, Walla Walla University

These signatures are on file at the Washington Student Achievement Council.

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