



Preliminary Analysis of the General Education Reform Ad-Hoc Committee (GERAC) Recommendations

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Seth Anthony

Interim Director, Office of Academic Excellence

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Background

In Spring 2013, Provost Brad Burda commissioned and charged the General Education Review Task Force (GERTF) with conducting a comprehensive review of general education at Oregon Tech. This work, led by this group of faculty and broadly engaged with the university community, produced a recommendation in Spring 2016 for a revised general education program known as “Essential Studies.” (Henceforth, this recommendation will be referred to as the “GERTF model.”)

After this, the General Education Advisory Council (GEAC), a university standing committee under Academic Affairs, took up the work of moving the GERTF Essential Studies model towards implementation. As this work proceeded from Fall 2016 to Winter 2018, it became clear that key impacts of implementation were not well-defined and seemed to some to be potentially unsustainable, resulting in hesitancy in many quarters about moving forward towards implementation. On top of this, additional statewide legislative and political pressure, as well as more intense budgetary constraints, led to an emerging understanding during the 2017-2018 year that the model would likely need to be refined prior to implementation.

The General Education Reform Ad-Hoc Committee (GERAC), composed of both faculty and administrative staff, was formed in the spring of 2018 and charged by Provost Gary Kuleck with focused, short-duration work over summer 2018 to refine the model to be sensitive to existing and new institutional constraints. This work culminated in a set of recommendations presented to administration on October 5, 2018. This document specifically recommended certain changes to the Essential Studies model and provided an example (in an amended version of the report provided on October 10, 2018) of how these changes could be realized in a curricular structure. (Henceforth, this structure will be referred to as the “GERAC model.”)

During GERAC’s work over summer 2018, Seth Anthony, Interim Director of the Office of Academic Excellence, provided GERAC with analysis of the GERTF model with respect to several key constraints:

- **HB2998 analysis:** Compatibility of the model with the statewide HB2998 Foundational Curriculum (“Core Transfer Map”) mandated by legislation to go into effect in the 2018-2019 academic year.
- **Capacity analysis:** Analysis of current course capacity and staffing with respect to anticipated demand for courses in each general education category.
- **Curriculum analysis:** Analysis of the degree to which the GERTF model impacts curriculum maps, potentially resulting in credit hour pressure on degree programs.
- **Transfer analysis:** Estimation, based on analysis of transfer credits from actual OIT students, of how the number of transfer credits applied to degree requirements would differ under the GERTF model as compared to the historic general education model. (This analysis was completed in Spring 2017 as part of GEAC’s work).

In its recommendations, GERAC specifically recommends that the Office of Academic Excellence assist in the decision-making process by providing data to administration concerning their recommendations. This report presents updated analysis of the GERAC models with respect to the first three key constraints above (comparing it to the GERTF model where appropriate) and presents recommendations for next steps to move general education reform forward at Oregon Tech in response to these findings.

Study #1: HB2998 analysis.

Background: In Summer 2017, HB 2998 was enacted into law, mandating that Oregon’s public colleges and universities collectively adopt a common statewide foundational curriculum of at least 30 credits that would be guaranteed to be awarded and applied consistently statewide.

During the 2017-2018 academic year, a working group convened by HECC collaboratively developed this foundational curriculum, now branded as the Oregon Core Transfer Map (CTM). Under the legislation, every community college will notate completion of the Core Transfer Map on transcripts, and every public university will identify at least 30 credits of general education requirements (or equivalent) that will be deemed to be met if a student transfers in with the CTM completed. Below is a potential crosswalk between the Core Transfer Map and the current, GERTF, and GERAC models:

Core Transfer Map	Oregon Tech Current General Education Requirements	GERTF Essential Studies Model <i>Potentially Problematic Elements Underlined in Italics</i>	GERAC Essential Studies Model <i>Potentially Problematic Elements Underlined in Italics</i>
Writing-WR 121 (3-4 Cr.)	Writing 121 (3 credits)	Communication – Foundation – WRI121 (3 credits)	Communication – Foundation – WRI121 (3 credits)
Arts & Letters – 2 courses (6-8 Cr.)	2 Humanities courses (6-8 credits)	Inquiry & Analysis – Humanities – Foundation (3 credits) plus <i><u>Inquiry & Analysis – Humanities – Essential Practice (3 credits)</u></i>	Inquiry & Analysis – Humanities (6 credits)
Social Science – 2 courses (6-8 Cr.)	2 Social Science courses (6-8 credits)	Inquiry & Analysis – Social Science – Foundation (3 credits) plus <i><u>Inquiry & Analysis – Science – Essential Practice (3 credits)</u></i>	Inquiry & Analysis – Social Science (6 credits)
Natural Science – 2 courses w/labs (8-10 Cr.)	2 Science/ Mathematics courses (8-10 credits)	Inquiry & Analysis – Natural Science – Foundation (4 credits) plus <i><u>Inquiry & Analysis – Science – Essential Practice (3 credits)</u></i>	Inquiry & Analysis – Natural Science (8 credits)

Core Transfer Map	Current Gen Ed	GERTF Model	GERAC Model
Math – 1 course (4-5 Cr.)	1 Science/ Mathematics course (4 credits)	<u>Math Course – if required by in program (4 credits)</u> <u>or</u> <u>Quantitative Literacy – Foundation (4 credits of statistics; MATH 243 or 361)</u>	<u>Math Course – if required by in program (4 credits)</u> <u>or</u> <u>Quantitative Literacy – Statistics (4 credits)</u>
1 course (3 cr.) must also satisfy AAOT Cultural Literacy Requirement	Meets Intercultural Studies recommendation	Diverse Perspectives – Foundation (3 credits)	<u>Diverse Perspectives – Social Science (3 credits)</u>
Courses must total minimum of 30 credits, can be filled by an elective credit if needed	Additional credits taken to reach 30 in the Foundational Curriculum will be applied to the general education category associated with them.		
Additional Notes		<u>Totals to 9 courses (29 credits), with IA – Science – Essential Practice is used twice.</u> <u>Requires potentially lower division external courses be used to meet higher-level “Essential Practice” requirements.</u> <u>Runs the risk of a double-dipped course taken to fulfill CTM requirements being needed to “fill” two slots at OIT. However, the requirement that the CTM must be 30 credits means this isn’t a credit hour issue.</u>	<u>Still runs the risk of a double-dipped course taken to fulfill CTM requirements being needed to “fill” two slots at OIT.</u> <u>Unclear how an external Cultural Literacy course taken outside Social Sciences (e.g. Arts and Letters) would be applied to meet the Diverse Perspectives requirement.</u>

Improvements from GERTF model to GERAC model

- Removing the distinct Essential Practice level from the general education model, and explicitly calling out 2 courses in each of the Inquiry & Analysis subject areas removes the single largest stumbling block to compatibility with HB2998.

Remaining concerns with GERAC model

- Because the GERAC Essential Studies model explicitly delineates that one Diverse Perspectives course must be taken from Social Science and one must be taken from Humanities, it is unclear how an external course that fulfills the CTM “Arts and Letter” (Humanities) block and the “Cultural Literacy” requirement would be received under this model.
- While the other blocks of the CTM (“Communication,” “Arts and Letters,” “Social Sciences,” “Natural Sciences,” and “Cultural Literacy” map fairly neatly onto Essential Studies requirements, the Math block of the CTM does not. This block would therefore have to be either a specific course that fulfills either a programmatic math requirement or the Quantitative Literacy statistics requirement. (Functionally, this may not be an issue, as almost every Oregon Tech program mandates specific math courses anyway; however, it may be an issue with communication and presentation. This was a minor concerns issue under the GERTF model that remains under the GERAC model.)

(Relatedly, NWCCU’s standard 2.C.9 for general education, includes a reference to “computation” as a necessary general education outcome. While computation is certainly an element of the statistics courses required in the GERTF and GERAC models, the relationship between this standard and the requirement is arguably less direct than for the other areas called out by NWCCU.¹

Further considerations and potential model refinements

- Similar analysis should be done with respect to other key regional transfer blocks (particularly those from Washington state, but also from California, Hawaii, and elsewhere).
- Allowing for a course to “double-dip” to meet multiple requirements (particularly Diverse Perspectives) could enhance the alignment between the CTM and OIT requirements. However, this could introduce additional complications into degree audits, and, if Diverse Perspectives was only present as a “double-dip” requirement, could make it challenging to find 30 credits of Oregon Tech gen ed to which the CTM would apply.
- Incorporation of an explicit mathematics requirement (“MATH 111 or higher”) would potentially enhance the clarity of alignment with both the CTM and NWCCU requirements.

¹ NWCCU standard **2.C.9**: “The General Education component of undergraduate programs (if offered) demonstrates an integrated course of study that helps students develop the breadth and depth of intellect to become more effective learners and to prepare them for a productive life of work, citizenship, and personal fulfillment. Baccalaureate degree programs and transfer associate degree programs include a recognizable core of general education that represents an integration of basic knowledge and methodology of the humanities and fine arts, mathematical and natural sciences, and social sciences. Applied undergraduate degree and certificate programs of thirty (30) semester credits or forty-five (45) quarter credits in length contain a recognizable core of related instruction or general education with identified outcomes in the areas of communication, computation, and human relations that align with and support program goals or intended outcomes.”

Study #2: Capacity analysis

In order to present a sustainable model for general education, it should be clear whether Oregon Tech has the faculty capacity to teach the courses required under this model, and whether we have this capacity at each of our diverse sites and modes (in particular: Klamath Falls, Portland-Metro, Online, and Seattle). If we do not currently have this capacity, a pathway to reaching this capacity should be outlined. Such a path could include:

- Reallocation of teaching load for existing faculty.
 - When load is reallocated, it should be clear where this load will come from.
- Hiring of additional faculty (full-time, or adjunct, as appropriate) to teach needed load.
 - When new faculty are hired, it should be made clear who will see less demand as a result.

Transfer assumptions

Modeling anticipated demand is complicated by the fact that Oregon Tech both enrolls a high percentage of transfer students and sees a high degree of attrition prior to graduation. To model this, even approximately, this analysis relies on existing demand for current general education courses that are required by all or almost all programs already.

At the two extremes are:

- **high-transfer** foundational general education courses such as WRI121 and SPE111 that are frequently transferred in to Oregon Tech, but are also taken by many students who ultimately leave Oregon Tech before graduation.
- **low-transfer** upper-division general education courses such as SPE321 that are much less frequently transferred into Oregon Tech, but which are typically taken much closer to graduation.

These two extremes provide data points which can be used to approximately anchor estimates of demand. For the 2017-2018 academic year, enrollment and capacity of these courses across sites and modes were:

		CM- WRI121	CM- WRI122	CM- SPE111	TW - SPE321	Demand Range (High-T) (Low-T)	
Klamath	Total Enrolled	250	324	333	421		
	Total Capacity	241	367	370	428	240	420
Online	Total Enrolled	32	70	31	99		
	Total Capacity	62	90	36	100	30	100
Seattle	Total Enrolled	3	9	0	0		
	Total Capacity	35	70	0	0	5	10
Portland-Metro	Total Enrolled	25	47	70	127		
	Sum of Capacity	49	49	112	144	50	130

Under the GERAC model, each category of required general education courses can be identified as high-transfer (Inquiry & Analysis Humanities, Social Science, and Natural Science categories) – those categories where a relatively large list of courses could potentially satisfy requirements, plus WRI121, SPE111, and WRI122) or low-transfer (the remainder; categories where a short list of courses could satisfy requirements).

Further refinements to this admittedly approximate analysis are almost certainly possible, but may be challenging to validate.

Curricular assumptions

This work also required assumptions regarding which current Oregon Tech classes would fulfill particular general education requirements.

Given that the GERAC model proposes elimination of the “Essential Practice” level within the Inquiry & Analysis outcome, this work assumes that any course which previously might have met either foundation or practicing now meets the block (and that essentially this is the same as any courses that meet the current block). Additionally, it has assumed that any course which currently meets the Humanities general education requirement will meet the inquiry & Analysis – Humanities requirement, and similarly for the Social Sciences and Natural Sciences requirements within Inquiry & Analysis.

This is subject to one caveat, however -- per the GERAC recommendations, this analysis assumes that no “double-dipping” (the ability of a course to simultaneously satisfy multiple requirements) or “double-tagging” (the ability of a course to satisfy two different requirements) is allowed.

As a result, any course previously identified as likely to satisfy both Inquiry & Analysis and other requirements (Diverse Perspectives, Quantitative Literacy, or Ethical Reasoning) fulfills only the non-IA requirement. The only exception to this is for Humanities Diverse Perspectives courses; because that is not an allowed category within this model, these remain tagged as IA-Humanities).

This work also assumes, given that Ethical Reasoning is collapsed into a single (non-program-integrated) level, that both courses satisfying the foundational level (PHIL 105 and HUM 125), in addition to those that previously satisfied the essential practice level (PHIL 331, etc.) will satisfy this requirement.

These assumptions were derived from the GERAC recommendations and confirmed with the GERAC co-chairs shortly after the recommendations’ release.

FTE Shortages for GERAC model implementation Based on 2017-2018 Capacity

		IA- H (2)	IA- SS (3)	IA- NS (2)	DP- CM	DP- SS	CM	ER	QL- ST	QL- FIN	Tot al
		HIGH T	HIGH T	HIGH T	LOW T	HIGH T	LOW T	LOW T	LOW T	LOW T	
Transfer Assumption											
Credits		3	3	4	3	3	3	3	4	3	
Students per section		30	30	30	30	30	30	30	30	30	
Klamath	Already Tagged Only:	0.24			0.75	0.67		0.51	0.53	0.74	
	Already Tagged + Potential:				0.48	0.46		0.43	0.53	0.74	2.63
Online	Already Tagged Only:	0.06			0.07	0.08					
	Already Tagged + Potential:				0.07						0.07
Seattle	Already Tagged Only:		0.01		0.03	0.01					
	Already Tagged + Potential:				0.03	0.01					0.04
P-Metro	Already Tagged Only:	0.28			0.36	0.14		0.12	0.29	0.28	
	Already Tagged + Potential:	0.12			0.36	0.07		0.12	0.29	0.28	1.24

The above analysis calculates (based on assumptions about class capacity) how many additional FTE would be needed to staff increased course offerings based on available demand. This analysis is done both for those courses already reviewed by ESLO committees and (in yellow) for a broader list including those courses that are likely candidates for each category, but which have not yet been reviewed.

Improvements from GERTF model to GERAC model

- Comparable analysis for the GERTF model demonstrated shortages of capacity in Essential Practice-level courses. The elimination of this level effectively resolves this capacity concern.
- Because the Ethical Reasoning requirement is broadened to include courses that could previously have fulfilled the foundational Ethical Reasoning Requirement, Ethical reasoning no longer becomes the most pressing staffing need. Any additional staffing requests and their priority should be re-evaluated in light of this analysis.

Remaining concerns with GERAC model

- GERAC's recommendations do not address how to handle Humanities courses that could meet Diverse Perspectives criteria.
- GERAC proposes hiring additional faculty staffing to cover anticipated demand for Ethical Reasoning courses. It is certainly clear that adopting such a requirement would require increasing staffing for specific courses.

However, as the model is intended to be approximately credit-hour neutral, it should also be identified what areas will see reduced demand and how this will be handled from a staffing standpoint. Would this impact existing tenure-track lines, NTT lines, or adjunct staffing, and to what degree?

- Additional areas would need significant adjustments in staffing – either new staffing or shifts in course offerings within existing staffing:
 - Diverse Perspectives – Communication (~1.0 FTE)
 - Demand for a second technical communication course, currently required by many programs, could eventually decrease. However, the background and expertise needed for Diverse Perspectives courses such as Intercultural Communication may be different from that needed to teach technical communication courses.
 - Diverse Perspectives – Social Sciences (~0.5 FTE)
 - This could potentially be addressed by tagging more social science courses as meeting Diverse Perspectives requirements. Under this model, there may be excess capacity in IA-Social Science courses that could be redirected to DP-Social Science courses.
 - Ethical Reasoning (~0.6 FTE)
 - Increased demand for Ethical Reasoning courses would be counterbalanced by decreased demand for other humanities courses (or a reduction in humanities transfer credit accepted).
 - Quantitative Literacy – Statistics (~0.8 FTE)
 - The two courses on this list are taught exclusively by the Mathematics department; there are unlikely to be other reductions in demand for math courses to counterbalance these)
 - Quantitative Literacy – Finance (~1.0 FTE)
 - The bulk of courses in this category are taught out of the Management department; there are unlikely to be other reductions in demand for management courses to counterbalance these.

The “unbalanced” new demands in the Quantitative Literacy category total ~1.8 FTE (and, likely slightly more given that others are not perfectly balanced either). Although the model as a whole is intended to be credit-hour-neutral, this anticipated increase in demand is consistent with the analysis in the subsequent section showing that the GERAC model also results in credit-hour adds to curriculum maps.

Further considerations and potential model refinements

Capacity pressures, particularly in the Quantitative Literacy, Ethical Reasoning, and Diverse Perspectives pathways, should prompt evaluation of:

- Whether these outcomes can be achieved in less impactful ways.
- How any shifts in course offerings required by the model could be accommodated (or not) using existing faculty in these departments (Mathematics, Management, HSS, and Communication).
- How potential hires to support these pathways could dovetail with other institutional or departmental initiatives.

Study #3: Curriculum map analysis.

Given both internal and external pressures to optimize students' pathways to graduation, as well as the immense financial pressures upon students, it is prudent to minimize to the extent practical the impact on the number of credit hours in curriculum maps.

Based on 2017-2018 curriculum maps, as outlined in the Oregon Tech catalog, each program's curriculum maps can be analyzed to determine which elements of the GERAC model are already present within the curriculum. The same assumptions about which courses satisfy which requirements have been made as in the capacity analysis in the previous section.

GERAC Essential Studies Requirement	Already met in what % of maps?
Communication: WRI121	100%
Communication: WRI122	100%
Communication: SPE111	100%
Advanced Communication	96%
Diverse Perspectives: Communication	11%
Diverse Perspectives: Social Science	35%
Ethical Reasoning	33%
Inquiry & Analysis – Humanities (2)	100%
Inquiry & Analysis - Social Science (3)	93%
Inquiry & Analysis - Natural Science (2)	85%
Quantitative Literacy: Statistics	52%
Quantitative Literacy: Finance	57%
Teamwork: SPE221	96%

Program	Credits Short of Implementing GERAC Essential Studies Model	GERAC improvement over GERTF model (without GERTF model efficiencies)	GERAC improvement over GERTF model (assuming all GERTF model efficiencies)
Business - Management	11	2	-4
Business - Marketing	11	2	-4
Business - Accounting	10	5	-1
Mechanical Engineering	10	3	0
Professional Writing	9	2	-4
Diagnostic Medical Sonography	7	3	-3
Echocardiography	7	3	-3
Nuclear Medicine	7	3	-3
Radiologic Science	7	3	-3
Vascular Technology	7	3	-3
Computer Eng Tech	7	3	-3
Embedded Systems Eng Tech	7	3	-3
Software Eng Tech	7	3	-3
Renewable Energy Eng (KF)	7	3	-3
Renewable Energy Eng (PM)	7	3	-3
Health Informatics	7	9	3
Information Technology	7	5	-1
Operations Management	7	8	2
DMS (Completion)	7	3	-3
Echocardiography (Completion)	7	3	-3
Rad Science (Completion)	7	3	-3
Vascular Tech (Completion)	7	3	-3
Applied Math	6	3	-3
Biology-Health Sciences	6	3	-3
Respiratory Care	6	3	-3
HC Management - Rad Sci	6	9	3
Technology and Management	6	5	-1
Mechanical Eng Tech	6	3	-3
Respiratory Care (Completion)	6	3	-3
Electrical Engineering (KF)	4	3	-3
Electrical Engineering (PM)	4	3	-3
HC Management - Admin	4	12	6
Medical Laboratory Science	3	7	1
Environmental Sciences	3	6	0
Civil Engineering	3	6	0
Geomatics - GIS	3	3	-3
Geomatics - Surveying	3	3	-3
HC Management - Clinical	3	9	3
Dental Hygiene (Completion)	3	9	3
Applied Psychology	1	2	-4
Dental Hygiene	0	6	0
Manufacturing Eng Tech	0	3	-3
Communication Studies	-1	5	-1
Population Health Management	-1	5	-1
EMS Community Care	-1	16	10
EMS Critical Care	-1	16	10

The table on the previous page illustrates the number of credits that would be required to be added to each bachelor's degree curriculum map to fully incorporate the GERAC model, assuming no other changes in disciplinary courses or other degree requirements. This assumes optimal reallocation of any existing general education requirements that are not otherwise specified by the program (e.g. "Communication Elective," "Humanities Elective") to fulfill Essential Studies requirements.

Comparisons with a similar analysis of implementing the GERTF model within current curriculum maps are also provided. The difference between these two is actually a range depending on whether programs chose or were able to take advantage of potential (but not required) credit hour "efficiencies" within the GERTF model – specifically, choosing to implement a program-integrated foundational ethical reasoning experience, and taking advantage of the possibility of one "double-dip" within the Essential Practice level.

Improvements from GERTF model to GERAC model

In a few cases, the GERAC model is able to fit much more neatly within curriculum maps than the GERTF model. This is primarily due to the fact that the GERAC model aligns the Inquiry & Analysis disciplinary categories (Humanities, Social Sciences, Natural Sciences) with existing practices in accepting courses within the equivalent categories in the current general education model. This permits courses or categories that have not yet been explicitly evaluated (e.g. "Literature Elective," "Upper-Division Humanities") to be treated as fulfilling the general education requirement. Most of the cases in which significant gains are seen are those curricula that prescribe specific classes or narrow categories of classes within the current general education blocks.

Remaining concerns with GERAC model

It might be surprising that the GERAC model does not improve over the GERTF model in many curriculum maps. This appears to be the case for several reasons:

- The GERAC model, while simpler, does not actually contain fewer required courses overall – while the foundational and essential practice Ethical Reasoning blocks in the GERTF model are essentially consolidated into the single Ethical Reasoning block in the GERAC model, an additional block is added within Inquiry and Analysis, which goes from 5 courses to 6 by explicitly expanding the "Sciences – Essential Practice" block into "Social Sciences" and "Natural Sciences."
- The GERTF model contained several opportunities to build in efficiencies by allowing "double-dipping" of courses to fulfill multiple requirements simultaneously. The GERTF model made substantial (and arguably unrealistic) assumptions about the extent to which students would be able to take advantage of these double-dipping opportunities; the GERAC model takes the opposite approach and eliminates the possibility for double-dipping entirely.
- Although the Quantitative Literacy and Inquiry & Analysis – Natural Sciences blocks of the GERAC model "map" onto the 4 required Math/Science courses in the current general education model, many programs already specifically prescribe math and science courses to fill these blocks in order to meet technical prerequisites for the major. Introducing QL

statistics and finance requirements is therefore effectively a credit hour add for programs that already have significant math/science requirements and which don't already require these QL courses.

Further considerations and potential model refinements

- Programs could find additional efficiencies through reconsidering their second technical communication course. While almost every program requires WRI227 (Technical Report Writing), many also require WRI327 (Advanced Technical Writing) or WRI350 (Documentation Development). While in some cases programs have chosen this deliberately because of the additional value it provides to students, this second technical communication course would no longer be required under either the GERTF or GERAC models. However, without discussion with programs, this mode of finding efficiencies should not be assumed.
- Programs may also be able to find efficiencies without fundamentally restructuring their curricula by:
 - Reducing the number of technical electives. This could have adverse impacts on student preparedness and on departmental staffing within the majors.
 - Reducing the number of free/general electives. This could have adverse impacts on the number of transfer courses that can be applied to degree requirements.
- As in the capacity analysis, the Quantitative Literacy pathway poses some of the more significant issues in terms of credit hour neutrality in existing curriculum maps. Alternative routes to this pathway that have less direct credit hour impact should be thoughtfully considered, especially as this pathway is a concern in all three of the analyses in this report.
- As also noted in the capacity analysis, the Ethical Reasoning and Diverse Perspectives pathways are also less frequently required by programs already, and, in their present form, would prompt the greatest change to curriculum maps. Although less directly responsible for credit hour adds, these pathways should be thoughtfully evaluated.
- A “middle ground” regarding double-dipping should be sought. While the GERTF model essentially required double-dipping to approach credit hour neutrality, the GERAC model prohibits it outright.

At a minimum, the ability for course to be “double-tagged” to satisfy multiple possible blocks of the model, should be thoughtfully explored. Double-tagging does carry the risk of driving traffic towards specific courses because they are the most “versatile” in terms of applicability.

“Double-dipping” – the ability of a course to satisfy multiple requirements simultaneously, and therefore achieve actual credit hour efficiency, should also be explored, but with even greater caution, as this would further drive students and programs towards certain courses. However, many general education models do include a “double-dipping” option, so this option should also not be excluded out of hand.

Potential Study #4: Transfer analysis.

A replication of the Spring 2017 transfer analysis using the GERAC model is not included in this report. As outlined below, the issues identified above are sufficiently great as to prompt the need for refinement of the model on their own; this work should be done before the time-intensive transfer study is replicated (this required ~60 person-hours of work).

Furthermore, when this study is conducted, it should be repeated primarily for the population of “high-transfer” students – “Group C” in this original study – who bring 90 or more credits to Oregon Tech. Not only does this represent the greatest proportion of Oregon Tech’s transfer student population, but this group also saw the greatest adverse impact as a result of the GERTF Essential Studies model.

These impacts and proportions of Oregon Tech’s undergraduate student population are summarized below:

	Percentage of new degree-seeking undergraduates (2016-2017)	Average credit loss under GERTF model
Group A – First-time first-year students with 1-36 transfer credits	~ 15 %	1.7 credits/student
Group B – Transfer students with < 90 transfer credits	~20%	3.1 credits/student
Group C – Transfer students with 90+ transfer credits (excluding post-bacs)	~ 37%	7.4 credits/student

While these impacts are almost certainly reduced in this GERAC model, particularly because of the elimination of the “Essential Practice” level, other factors, such as the division of the Diverse Perspectives outcome pathway into Communication and Social Science blocks, are likely to exert some pressure in the opposite direction.

Because of changes to curriculum maps and the continuing evolution of Oregon Tech’s transfer student population, when this transfer analysis is repeated, it should be repeated with 2017-2018 or 2018-2019 transfer students and build upon the curriculum map analysis described earlier in this report.

Recommended next steps

Before any final decision is made regarding implementation of general education reform, Oregon Tech’s leadership should have reasonable assurance that the model is sufficiently constrained that it will not have deleterious impacts on curricula, staffing, and transfer.

While zero or negative impact is an unrealistic target for a general education reform effort that aims to introduce greater intentionality into general education, basic constraints outlined previously should be met. The analyses in this report speak to the three of these. In summary:

- **HB2998 analysis:** viable with some questions of interpretation
- **Capacity analysis:** viability largely dependent on institutional fiscal capacity to staff new faculty lines (also tied closely with curriculum viability)
- **Curriculum analysis:** not presently viable

Based on the above, it is recommended that elements of the model be revisited and revised and prove satisfactory on the above analyses, prior to completion of a detailed transfer analysis. In particular, efficiencies in the Quantitative Literacy, and Ethical Reasoning, and Diverse Perspectives pathways be found. These efficiencies could involve:

- reducing the number of credit hours explicitly required,
- allowing for some degree of double-dipping and double-tagging,
- finding ways to support these pathways through more program-integrated routes, and/or
- broadening the number ways in which a pathway can be fulfilled.

Consistent with discussions throughout this process, as these outcome pathways are potentially rethought, attention should be paid to engaging “general education faculty” alongside faculty in the majors, as ESLO committees have sought to do; the engagement of both groups in each pathway is essential, as general education faculty possess content area expertise in these areas and their pedagogy, and faculty in the majors possess the necessary disciplinary context and can speak most readily to professional applications. A pathway that omits either of these groups in its development or its implementation is unlikely to serve students as effectively as possible.

Transfer analysis, even for a representative subset of students (those with large numbers of transfer credits), is critical before a final decision is made. However, this is a time-intensive analysis, and, for the sake of efficiency, should be delayed until a model is reached that satisfies the above criteria. Further progress on these fronts will also undoubtedly further ease transfer impacts as well. Given the desire to reach a resolution on this topic promptly, the most efficient use of time is to reach solutions which will address the above issues before proceeding to repeat the transfer study.

Given the desire for a prompt resolution on a pathway forward, it is also recommended that, for the sake of efficiency, a single person or a very narrowly defined small group be tasked with soliciting this input, consulting with affected parties, and preparing further refinements to the model. Additional analyses, such as review of full comptability with institutional and program accreditation requirements, may emerge through these conversations.

Because further revising the model will involve modification to outcome pathways and balancing a number of constraints, this modification should be conducted with appropriate and open consultation with the parties who have the most expertise and interest in these matters, including, but not limited to, GEAC, ESLO committees, and the relevant department chairs. These groups, which have thought extensively about the Essential Studies model for the past four or more years, will undoubtedly have additional suggestions and creative solutions that go beyond even those. Additionally, openness and clear and transparent scrutiny of the analysis in this report is prudent, as it primarily reflects the work of one individual done on a short timeline. Additional eyes on this work will help to catch any errors of analysis of interpretation. The Office of Academic Excellence will readily make available to any interested parties the raw data and spreadsheets that lay behind the analysis presented here.