General Arts and Science College Health Science Option

ANNUAL CURRICULUM RENEWAL DOCUMENT 2014/2015

6/1/2015
Fleming College
Prepared By: Susan Hyndman (Program Coordinator)

Contents

Curriculum Renewal: Analysis and Action Plan GHS Program 2014/15

Program Coordinator:	**Susan Hyndman**	**School:**	**General Arts and Science (GAS)**
Program Code:	**44700**	**Date Completed:**	**June 2015**
Program Name:	**General Arts and Science College Health Science (GHS)**		

A. Analysis of Indicators

Note: data is **not** recorded in this section of the template.

Reflect on, and discuss, the following indicators in the context of the curriculum and program:

1. Industry / Sector Trends

1.1 Identify any new or emergent *industry or sector* related issues and trends over the past year that will impact your program?

- The General Arts and Science College Health Science Program (GHS) is a pathway program designed to provide learners with the opportunity to prepare for entry into college health science programs. Fleming College reserves 25% of seats in the following programs for GHS graduates with a minimum of 70% overall program average:
    - Paramedic
    - Practical Nursing
    - Massage Therapy
    - Occupational Therapist Assistant/Physiotherapist Assistant
    - Fitness and Health Promotion
    - Health Information Management
    - Biotechnology Forensics Advanced
    - Pharmacy Technician

  All students who have applied to one of the above programs and are not accepted are given alternate offers to the GHS program. Data collected by the coordinator indicates that at least 50% of the 2014/2015 GHS students entered the program via an alternate offer.

  The Provincial Heads of Health Sciences group has been working to standardize core Pre-Health Science program curriculum across the province. This has resulted in an MOU which outlines a revised "Pre-Health Sciences Pathway to Certificates and Diploma" program. The majority of Ontario colleges will be aligning their Pre-Health Science programs to the suggested standards for the "Pre-Health Sciences Pathway to Certificates and Diploma" program and/or the "Pre-Health Sciences Pathway to Diploma and Degree" program specified in the Pre-Health MOU.

  As outlined in the pre-health sciences project report entitled "Pre-health college to college alignment of policy, practice and program learning outcomes to facilitate student mobility and inter-college admissions and credit transfer report", the intent of this MOU is to facilitate student mobility among colleges and programs. (S: shared data/GAS/GA$S Program Related/GHS/Curriculum Renewal Spring 2015/Provincial MOU)

In the spring of this year Fleming College agreed to the guidelines of the MOU and is working toward revising of the program curriculum to meet or exceed the standards outlined for the 'Pre-Health Sciences Pathway to Certificates and Diploma" program by the Fall 2016 academic year.

1.2 What are the Advisory Committee recommendations from the past year that will affect the positioning, nature, or scope of your program?

The last Program Advisory Council (PAC) meeting in which minutes include discussion of the GHS program occurred in 2012. Changes which had been implemented in GHS program curriculum and design were outlined. The Hlth273 course was of particular interest to the PAC members with one suggesting that it would have potential as a dual credit course.

A number of challenges (multiple changes in school administration, difficulty identifying committee members from a variety of areas) have delayed subsequent PAC meetings. PAC membership for GAS programs has been reestablished and it is expected that a meeting will occur in Fall 2015.

1.3 What information / observations have been generated via faculty and staff professional development, engagement in sectoral and profession associations, or involvement in community and employer networks connected to the field?

The GHS coordinator is in frequent contact throughout the year with the coordinator and faculty of the PMD program at Fleming College. Recently, it was communicated that the viability of the PMD program is being closely monitored. The PMD coordinator has identified student retention in the PMD program as a major concern. Preliminary data indicates that GHS graduates experience a high rate of success in the PMD program (Appendix A). Consequently, an increased number of GHS graduates from the Fall2014/Winter2015 cohorts received offers to the PMD program for Fall 2015.

The PMD coordinator also identified the low success rate of PMD students in Anatomy and Physiology I, II and Special Topics as another concern. The GHS coordinator audited the first seven weeks Anatomy and Physiology II to verify the alignment and laddering of the GHS Human Biology I and Human Biology II to these subsequent health science courses. A mapping of objectives illustrated that GHS graduates should be well positioned for success in the PMD Anatomy and Physiology courses (S: shared data /GAS/ GA$S Program Related/GHS Curriculum Renewal Spring 2015/Scie149-Scie158 Comparison).

- The GHS coordinator attended the Aligning and Building Curriculum conference in May 2015. Information presented at the conference highlighted the importance of detailed curriculum and program mapping documentation for the upcoming PQAPA process.

2. Curriculum Development

2.1 Identify any curriculum changes in the last year such as changes in course content and course materials, course / program outcomes, innovative delivery approaches, and/or assessment practices.

<u>Program</u>

Historically, there have been no MTCU Vocational Learning Outcomes for the College Health Science Option. The Fleming GHS program was operating using general outcomes established by other institutions. During 2014, the GHS program team developed a set of vocational (program) learning outcomes for the GHS program. (Appendix B). A comparison of these

program outcomes to those submitted for MTCU approval in the new Pre-Health Sciences MOU reveals that the GHS program is well situated to meet all of the proposed vocational objectives for a Pre-Health Sciences Pathway to Certificate and Diplomas program (Appendix C).

Program

Professional Issues in Health Science (Hlth 273)

The text for this course was eliminated to assure relevant current Canadian context and content. The text was replaced with electronic sources such as professional websites, government websites, research centres, etc.

Integrating Theory and Practice (Hlth 274)

This course was offered in a hybrid format this year. Using faculty and student feedback aspects which were beneficial to student learning were identified (ie. several online activities, new resources). It was also identified that the workload for both the students and instructor was heavy. Two very well received changes were the introduction of LinkedIN profiles and Positive Space certification. Several members of the teaching team have participated in the Positive Space training and have created LinkedIn profiles to which students have access. This has provided increased opportunity for linkages between courses and relevancy for students.

Chemistry (Scie150/151)

The textbook for these courses was changed to a customized Flatworld Knowledge text. For about $45-50, students purchased an "All Access Pass" with unlimited online access as well as a downloadable copy of the text. For an additional $20 a black and white print copy could be sent to them. Students could purchase the "All Access Pass" at the bookstore, but had to order the print copy through the FWK website. There were issues with the code students were getting for the book at the beginning of the semester (it didn't lead them to the custom version). Some students liked the e-text, but a number commented in faculty review that they prefer a hard copy book. Instructors note however that no students ordered the print copy.

A "Lab Workbook" was introduced in Scie150 as an integral resource for this course in Fall 2014. In each part of the workbook, students learn about how to write a particular section(s) of a lab report (e.g. objectives and hypothesis) and also complete an experiment related to the lecture content they are learning at that time. Students complete questions in the workbook and submit to be graded on a rubric. This leads up to students completing full lab reports at the end of the semester. With the use of the workbook students seemed to have a better understanding of the components of a lab report, but still struggled with some areas (particularly the conclusions). Feedback from faculty for Hlth273/274 indicates that this workbook has students thinking about "scientific communication" and what should or shouldn't be included.

Mathematics for Health Sciences (Math117/118)

During the spring of 2014, the sequencing of the curriculum for Math117 and Math118 was slightly altered and several new topics were added. These changes were made to facilitate better alignment with topics in Scie150/Scie151 and in anticipation of future alignment to MOU objectives. The new topics added to the curriculum include:

- Basic Skills added weekly to Math 117 in first half of semester, including diagnostic handout in Week 1 (HOAE Sample Questions). This change was implemented in response to student feedback regarding the content of the HOAE evaluation required as the basis of admission to PN programs at some institutions.

- Roman Numerals Unit is now a bonus unit in Week 8 rather than Week 14 content. The Roman Numerals content is included as it is a topic with which Pharmacy Technician students need to have familiarity.
- Geometry from Math 118 moved into Math 117. This topic was repositioned as it is directly linked to and provides application of algebra concepts covered in Math117.
- Measurement conversions review at the beginning of Math 118 includes a hands-on learning activity focused on dosage calculations.
- Empirical Rule and Confidence Intervals topics were added to Math 118 to enable more applied learning opportunities and for alignment with MOU objectives.

Human Biology (Scie148/149)

The Course Study Guide package is no longer printed for students. The package materials are available to students via the D2L Course Page resources. In place of assigned Study Guide assignments students complete a short prelab exercise prior to each lab session. The exercises are designed to assist students in identifying key prior knowledge which will be beneficial for each lab activity session. Answer keys for the exercises are available on the D2L course page and students are required to self- assess their work. The inclusion of this learning activity provides students with the opportunity for low stakes, formative self -assessment and facilitates review and practice of material prior to its application in the laboratory setting.

Communications for the Helping Professions (Comm79)

Course redesign during the 2014 CBD period focused on the relevance of learning materials to future health science students, learning activities, UDL and sustainability. The course now provides added opportunity for students to reflect on their life experiences in their writing, places a greater focus on long form writing practice during class time and features readings with a greater emphasis on health sciences. The course begins with highly accessible readings and builds towards college level academic readings. These readings may incorporate or stimulate discussion of personal actions and civic responsibility. Evaluation is now focused on reading comprehension and long form writing assignments that emphasize writing as process. Anecdotal evidence indicates that the 3-2-1 process has been well received by GHS students. The number of assessments has been reduced (see GHS Assessment Grid – Appendix D) and more opportunities for collaboration and self-reflection are provided. Connections are made to content in other GHS core courses when appropriate (see GHS Topic Grid – Appendix E) and readings have been shared with GHS program team to facilitate topic discussions and references in the other core courses.

2.2 Does the current curriculum align with the college's e-learning strategy which strives to have all Fleming graduates experience technology enhanced learning in each semester of their program? Identify courses where possible.

The curriculum in the GHS program has been designed and laddered such that first semester students are gradually introduced to technology enhanced learning and are guided by faculty with respect to the use of e-based learning resources in each of the first semester courses. All GHS courses require students to interact with the Desire2Learn platform to access lecture notes, complete quizzes, engage in online discussions, retrieve course support resources and access course grades. In second semester, students are required to participate in two hybrid courses (Hlth274 and Comm159).

Examples of additional course specific technology enhanced learning experiences include:

Semester 1:
Professional Issues in Health Science course (Hlth273)

- Regular use of D2L discussion board forums
- Online searches for current health related issues/topics

Semester 2:
Integrating Theory and Practice (Hlth274)

This is a hybrid course in which student learning is blended to take place both online and in the classroom. Each week, students attend a 2-hour face-to-face class and participate in a 1-hour online component which sets the stage for in-class activities. Uses of technology which are unique to this course within the program are:

- developing an electronic professional profile using the LinkedIn platform
- conducting online research about current events and issues related to health care and health science, innovation, and technology
- accessing information related to community health organizations, agencies, and facilities for resources and to arrange an applied volunteer placement
- participation in discussion forums
- participation in two Lynda.com online courses

Mathematics for Health Sciences (Math118)

- Students are provided with the opportunity to participate in guided activities which use Excel spreadsheets and graphing functions to visualize, analyze and interpret scientific and health care related information.

2.3 Does the current curriculum align with the College's Strategic Plan to *"infuse sustainability across the curriculum and across the student experience so that graduates understand and address sustainability issues." (Goal 3.3)* Please identify which courses/experiences in the students' program that sustainability issues are addressed.

GHS program core courses have been mapped against five of the sustainability objectives. All five of the objectives are reinforced and/or assessed in both first and second semester of the program. (Appendix F).

2.4 Identify any recent or anticipated initiatives that promote student pathways including partnerships with high schools, program laddering, university transfer / articulations, or continuing education?

The number of reserved seats in the Fleming College Paramedic program was increased this year from 8 to 13. This increase occurred at the request of the coordinator of the Paramedic program and is reflective of the perceived preparedness of GHS graduates for the rigorous PMD program.

Communication with the coordinator of the Pre-Fire Service program was initiated in Spring 2013 and Spring 2014 regarding future implementation of reserved seating for GHS graduates. While the former coordinator and new incoming Pre-Fire Service coordinator responded to initial email communications, requests for meetings from both the coordinator and Dean were not acknowledged. The GHS coordinator will pursue these meeting requests in Fall 2015 as

the provision of additional internal pathways will be vital to the continued success of the GHS program.

During 2014, the GHS coordinator visited a local high school and participated in several information sessions for students and guidance counsellors regarding the GHS program as a pathway to health science programs. The information provided was well received by the guidance departments and provided needed clarification regarding the multiple pathway programs offered by Fleming College. Direct contact with guidance counsellors effectively promoted the personal learning experience at Fleming College.

2.5 Identify any new competitor programs and/or re-positioning of existing programs?

It is unclear how the new Pre-Health Sciences Pathway standardization will affect interest and enrollment in the GHS program. If colleges decide to give admission preference to oversubscribed programs to students with Pre-Health Science Diploma to Degree certificates over students who have earned Pre-Health Science Certificate to Degree certificates it may decrease interest in the GHS program. If the MOU does, however, satisfy its intended purpose of facilitating movement between institutions our program may see increased interest as student pathways to other college science programs such as Veterinary Technician, Respiratory Therapy and X-ray Technician may be more accessible.

2.6 Identify if there are any new or changing provincial standards, standards for accreditation, credentials, and / or industry or sector certifications over the past year?

- Fleming College has committed to meeting the standards of the Pre-Health Sciences Pathway to Certificates and Diploma section of the Provincial Pre-Health Sciences MOU by Fall 2016.

3. Applied Learning

3.1. Does the current program contain a discrete Applied Learning opportunity for students? If yes, which category of Applied Learning is fulfilled?

___ Field Work (Indirect Supervision)
___ Field Work (Direct Supervision)
___ Co-op
___ Applied Project / Applied Research Project

Applied learning opportunities are provided for GHS students in the form of laboratory activities in Scie148, Scie149, Scie150 and Scie151. Students participate in the visualization and analysis of data during Excel lab activities and experience hands on measurement and dosage calculation activities in Math118. A volunteer placement opportunity as part of the Hlth274 curriculum further enhances the applied learning within the program. In addition, students participate in and receive certification from a Positive Space Training session as part of the Hlth274 curriculum.

3.2. If the answer to 3.1 is no, are there plans to create a discrete Applied Learning opportunity for students within this program? Why or why not?

The GHS program is a pathway program laddering to a college health certificate or diploma program. Core courses have set delivery patterns and there is ample applied learning in labs and volunteer placements. Perhaps a Gned course with a discrete applied learning opportunity could be included in the Gned block for this program.

4. Student and Graduate Satisfaction

4.1 Comment upon this year's Key performance indicators (KPI # 4, 8, 9, and 11) regarding student and graduate satisfaction (*reference Fleming Data Research website)

Table 1: GHS KPI analysis for 2012/2013 Reporting Year

KPI Indicator	Benchmark Gap
KPI#4: Graduate Satisfaction, Learning Outcomes	+27.96
KPI#8: Student Satisfaction, Learning Experience	+7.8
KPI#9: Student Satisfaction, Teachers	+10.10
KPI#11: Graduate Satisfaction, Program	+9.34

BENCHMARK GAP is Program Difference minus the College Difference. If the Benchmark Gap is positive, Fleming's program difference is above the college difference and the program does not have to increase its performance on this KPI. If the Benchmark Gap is negative, Fleming's program difference is below the college difference and the program needs to increase its performance on this KPI by the value of the Benchmark gap.

Table 2: GHS KPI analysis for 2013/2014 Reporting Year

KPI Indicator	Benchmark Gap
KPI#4: Graduate Satisfaction, Learning Outcomes	+32.48
KPI#8: Student Satisfaction, Learning Experience	-5.97
KPI#9: Student Satisfaction, Teachers	+6.24
KPI#11: Graduate Satisfaction, Program	+3.29

Table 3: GHS KPI analysis by Question for 2014/2015 Reporting Year

KPI Indicator	Fleming GHS Program	Province	Difference **
Question 13- Future Career	87.5%	78.2%	+9.3%
Question 24 – Program Quality	89.3%	78.4%	+10.9
KPI: Overall Satisfaction	86.6%	76.5%	+10.1%
KPI: Graduate Satisfaction	86.2%	81.9%	+4.3%

**Benchmark Gap analysis not available for the 2014/2015 reporting year at the time of this report.

Benchmark Gap for all Key Performance indicators for the 2012/2013 (Table 1) reporting year were positive and excellent. The Benchmark Gap for Key Performance indicators dropped in the 2013/2014 reporting year (Table 2). While there were no significant program curriculum changes during this year, some scheduling challenges prevented the maintenance of a small consistent teaching team in both semesters. The program team suspects that this was a major contributor to the KPI decline. The graduate satisfaction from this cohort (Table 3) indicates that upon completion of the surveyed program graduates were satisfied with their learning experience.

The KPI results for the key questions in the 2014/2015 reporting year indicate a return to above provincial satisfaction rates. Faculty attribute this increase to the return to smaller, more consistent teaching teams, continued strong advising support from the faculty teaching team and careful review of course evaluation feedback.

4.2 Review and discuss student retention on a semester by semester basis over the past year.

At Day 10 of Fall 2014, 99 students were enrolled in the GHS program. 85 of these students returned for the second semester in Winter 2015. This represents an 86% retention rate. Three students who did not return to the GHS program in the Winter were retained at the college in other programs. This is a regular occurrence in the program as students may receive offers of admission to programs with a January intake (ie. PN) or decide that a health science program will not be suitable for them. Also of note is the fact that 30 students were enrolled in the winter intake (SEM1) of GHS with 3 returning to repeat SEM1 from the fall semester. These types of retention situations are not captured in the retention data reported by the college.

It is important to note that from 2008-2011 68% of surveyed GHS graduates were continuing studies at Fleming College. (Appendix G).

Data collected by FDR regarding the GHS student success in Fleming health programs indicates that GHS graduates experience a high rate of success in subsequent Fleming programs. (Appendix A).

B. Curriculum Strengths and Challenges

Summarize the curriculum strengths and challenges identified by the team.

The GHS curriculum underwent significant review and modification that was introduced in the 2012/2013 year. The five main objectives for the renewal were:

1. Provide an integrated student learning experience
2. Provide more applied learning experiences for students
3. Provide increased academic advising support for students
4. Increase regular communication between course instructors regarding student progress and curriculum
5. Incorporate a variety of online/e-learning elements into the program curriculum

In addition to the content required, a goal of the program is to teach and reinforce the learning skills students need to be successful in this program while also preparing them to enter a more rigorous and challenging college health science program.

Strengths:

The maintenance of a small, consistent teaching team from semester to semester and year to year contributes to a solid student learning experience. This allows for consistent faculty advising, long term curriculum planning and effective integration of course topics and themes between the core courses. This consistency also facilitates the reinforcement and integration of the program outcomes of independent learning, foundational knowledge, personal learning

plans, problem solving and effective communication. (Appendix B).

Students in the GHS program experience a high level of contact with their instructors. Instructors connect with students in person, via email and through various forms of feedback. See Appendix I for examples of the unique, personal and valuable communication and feedback provided in Hlth274.

The GHS faculty have established a comprehensive Orientation package and presentation that features key program information, college services and faculty contact. All first semester program faculty participate in an interactive orientation session with GHS students as part of the college wide Orientation day.

GHS program faculty are dedicated to student success. The teaching team meets regularly to discuss student issues, progress and curriculum challenges. The teaching team has established a coordinated approach to course policies and expectations of students across the core courses. Most GHS faculty voluntarily participate in a system of student advising. Each GHS student is assigned a faculty advisor who is one of their instructors. Students are encouraged to contact their advisor with questions and/or concerns at any time in the semester. An important retention strategy used in this advising model is the generation of progress reports which indicate student progress and attendance in each program course. The program faculty team compiles two in semester progress reports (one in Week 4 and a second in Week 7). Advisors contact all students and meetings are requested with those who are at risk for success. These meetings contribute to the strong retention in the program as students can be directed to supports and/or appropriate courses or alternate programs.

Communication between the GHS program faculty, students and coordinator with the program coordinator and students of various Fleming health science programs occurs regularly throughout each academic year. Opportunities for cross-school interaction are continually evolving. During the 2014/2015 academic year the PMD coordinator made two classroom visits to speak with the GHS students regarding the benefits of the GHS program. In addition, GHS students were invited to participate in the PMD mock emergency scenarios on campus. The PMD coordinator ensured that students were given certificates of participation to include in their professional portfolios and/or in their co-curricular record.

The integration of course topics between the program courses has been well received by students. The integration enhances student engagement and relevance of curricula. The lab components of Scie148/149 and
Scie150/151 are applied learning opportunities that are cited by students in course evaluations as effective learning opportunities. In addition, the transferable and EE skills that are an integral component of the Hlth273/274 course closely align with the college's strategic and academic plans as well as the core promise and are greatly contributing to the overall personal and career development of the GHS students. See the Portfolio Feedback exemplars in Appendix H for details.

Frequent low risk assessments are utilized in the core courses to enable the provision of regular feedback. To help students learn to utilize and provide feedback, time
is spent in Hlth273 discussing effective feedback techniques and analyzing feedback from core course assessments.

The Scie148/149 and Scie150/151 curriculum is well laddered to support student learning in the Anatomy and Physiology courses (Scie157/158) of Fleming College health science programs. Initial data collected by the GHS and PMD coordinators for 2013/2014 GHS graduates indicates that PMD students from the GHS program are experiencing excellent success in the rigourous health science program Anatomy and Physiology courses. (Appendix I)

The hands on lab experiences in which GHS students participate are not standard components of Pre-Health Science programs across the province. This is a component of the Fleming program that should be used to differentiate our program from others.

Challenges:

The maintenance of a small consistent program team has been a challenge. The current Chair recognizes the importance of this feature of the GHS program and its positive impact on the learning experience of students. Consequently, teams are kept as small and consistent as possible.

The time involved with the volunteer placement and portfolio feedback in Hlth274 can be difficult for faculty to manage.

Faculty are noting an increasing number of students reporting mental health issues that significantly impact their academic success. While faculty is taking concrete steps to educate themselves with respect to mental health issues and strategies (ie. completing Mental Health First Aid certification) increased support and communication from Counselling Services would be beneficial.

The lack of a college wide advising model and expectations for faculty has presented some challenges with respect to the production of progress reports and the numbers of students assigned to faculty for advising. To date, the majority of program faculty (both full time and part time) have enthusiastically assumed an advisor role and participated in weekly team meetings. With increased work load pressures and budget restrictions it may become increasingly difficult to continue these student success initiatives.

Students are encouraged by faculty and the coordinator to utilize the learning supports available to them through AES. Data gathered by AES regarding Learning Centre usage for the 2014/2015 academic year indicates that few students are utilizing the services for the Math and Science courses in the GHS program (Appendix J). In addition, each semester there are several students who qualify for additional supports (ie. learning software, note takers), but do not receive access to these supports for several weeks (in some cases six weeks into the program).

C. Action Plan

Identify priority actions for the next year and the rationale for their inclusion. For each, indicate the project lead, and the proposed timelines for completion. **What resources are required to complete the action plan, i.e., software, equipment, and training?**

Program

- To ensure that the GHS program curriculum is aligned with the standards outlined in the Pre-Health Sciences MOU the learning objectives for Scie148/149, Scie150/151 and Math117/118 will be mapped to those found in the MOU exemplars. A plan for implementation of any required

curriculum changes needed by Fall 2016 will be developed. Any required changes to the curricula will occur during Spring 2016.

- The coordinators of the PMD and GHS programs will continue to monitor the success of GHS students in the PMD program. Mapping of Anatomy and Physiology II objectives to Scie149 illustrates that GHS graduates should be well positioned for success in Anatomy and Physiology I and II. The GHS coordinator and PMD coordinator have developed a tracking strategy to be utilized this year to monitor GHS student success in the PMD Anatomy and Physiology courses. In addition, data regarding student success and retention of GHS students in the PMD program (and other Fleming health programs) will be requested from FDR. Once collected this data could be used to market the GHS program more effectively.

- During the 2015 academic year the PMD and GHS coordinator plan to work to investigate opportunities for GHS students to audit upper semester classes in which the application of material from Scie148/149 is taking place. This will expose GHS students to the rigours of health science programs, the laboratory experience and the relevance of the GHS curriculum to their future program and career.

- The provision of additional internal pathways will be vital to the continued success of the GHS program. Consequently, the GHS coordinator will continue to investigate possibilities for reserved seat options in other Fleming programs such as Pre-Service Fire Fighter and Border Security. In addition, the details of the new PSW to PN bridge program will be clarified and promoted to current and prospective GHS students.

- Several health science programs (ie. Respiratory Technology, Ultrasound/Xray Technician) require a secondary school or college Physics credit for admission. Currently, the only 11C equivalent Physics course offered at Fleming College is Trades Physics. This course would not be the optimal choice for GHS students. An 11C/12C Physics course is being developed through Academic Upgrading in Spring 2015. This course is expected to be available in Fall 2015. The details regarding GHS students registering for this course while registered in the GHS program will be investigated as this may provide increased mobility for GHS students and additional marketing options.

- During the 2012/2013 academic year the GHS program team piloted the use of an end of semester Course Curriculum Evaluation document. (Appendix K). The coordinator has referred to these documents regularly. The details in these types of documents will be valuable for program review, development plans and the PQAPA process. The piloted documents will be at the end of the Fall 2015 semester to record anticipated curriculum renewal needs and gaps for Spring 2016 development.

Courses

Scie150/151

- The workbook for Scie150/151 will be revised and will be used again in the 2015 academic year. In the revisions, the format will be changed to remove some questions so students can focus their time more effectively. Students will purchase the Lab Workbook in the bookstore. The e-text for Scie150/151 will be used for one more year to see how students respond to it now that the codes are properly set-up etc. After that year, all textbook options will be reviewed.

Hlth 273

- A prep note template will be developed for students to use when completing weekly prep activities. This will clarify expectations for these activities and will provide guidance for the development of summarizing skills which will also align with strategies introduced in Comm79.

Hlth 274

- The course instructor participated in the Blended Learning course during Spring 2015 to learn how to more effectively and appropriately hybridize this course. This has led to expected movement from a weekly format to a module format, increased implementation of UDL principles, review of copyright and fair usage practices and the expanded use of technology tools including D2L features such as 'intelligent agents' and surveys. In addition, opportunities for entrepreneurial activities will be investigated for inclusion in the Hlth274 volunteer opportunity component of the course.

Math118

- Changes to the Excel component of Math 118 will be made to incorporate student use of Lynda.com courses and make more effective use of class lab time.

Scie148/149 and Scie150/151

- During meetings with the PMD coordinator assessment tools used for final formative assessments in the PMD Anatomy and Physiology and other courses were compared to those used in Scie148/149 and Scie150/151 of the GHS program. The GHS science courses utilize a wide variety of assessment methodologies (ie.multiple choice, short answer, matching, fill in the blanks, bell-ringer, diagrams) while the assessments in the PMD courses are mainly multiple choice tests given in the testing centre. In upper semester PMD courses students are required to complete some short answer questions. The PMD coordinator noted that many students struggle to complete these shorter answer assessments in the given time period as they are writing too much detail in their answers and are focused on format. The PMD coordinator will be sharing exemplar test questions and responses with the GHS coordinator this fall. These will be used by Scie148/149 and Scie150/151 instructors to incorporate opportunities into the GHS lab activities for students to become familiar with the expectations of these types of questions and strategies for their timely completion. In addition, the time allotted in both Scie150 and Scie148 to introducing students to effective multiple choice test strategies will be increased.

D. Deferred Actions

Record any issues that will need to be monitored, researched, or deferred for future action.

- The status of the PMD program will need to be closely monitored as a significant number of students enter the GHS program as a pathway to the Fleming PMD program (In Fall 2014 31% of GHS students indicated intent to apply to a PMD program). Since GHS program information lists PMD as a possible pathway and a program with reserved seats for GHS graduates it will be important to know of any plans for the suspension of the PMD program an academic year in

advance as students may apply for/accept GHS offers based on the availability of the PMD program at Fleming.

- GHS graduates may earn up to four credits towards a health program at Fleming College. The PMD coordinator has noted that for students entering PMD two of these credits are first semester PMD courses. Recently, this has put several GHS graduates into part-time status upon entering the PMD program. This is influencing funding of the PMD program. As a solution to this, the PMD program has returned a one hour course to the first semester of their program. It will be important to keep this situation in mind if/when future changes to the GHS curriculum and/or GenEd options are made.

- Detailed mapping of curriculum, assessments, program learning outcomes and essential employability skills for the GHS program and its courses will need to be completed to meet the requirements of the PQAPA process.

- Not all GHS students advance to health science programs. (See Appendix A) An increasing number of students in the GHS program are discovering career interests outside of health sciences. This may be a result of career related activities in the Hlth273/274 courses. Investigations into means of exposing students to a wider range of career opportunities would be a valuable future direction.

E. Attach an updated Program Curriculum Map to your report (Appendix K)

Please file an updated Program Curriculum Map in folder named Program Curriculum Map.:
S:\shared data\CLT\School Name\Program Name\Program Curriculum Map

Appendices

Appendix A: Summary of GHS Student Success

SUMMARY OF GHS STUDENT SUCCESS - FALL 2012

	FALL 2012						
PROGRAM NAME	TOTAL	MALE	FEMALE	INCOMPLETE	FAIL	PASS	AVG
Biotechnol Technol-Forensics	3	3	0	0	1	2	73
Business	1	1	0	0	0	1	52
Business Admin - Accounting	1	0	1	0	0	1	79
Business Admin - Marketing	2	0	2	0	1	1	53
Community and Justice Services	1	0	1	0	0	1	73
Comp Security & Investigations	1	1	0	0	0	1	72
Early Childhood Ed (Ptbo)	4	0	4	0	1	3	73
Ecological Restoration	1	1	0	0	1	0	-
Electrical Engineering	2	2	0	0	0	2	73
Emergency Mgmt & Business Cont	1	1	0	0	0	1	95
Fish and Wildlife Technician	1	0	1	0	0	1	68
Fitness and Health Promotion	1	1	0	0	0	1	54
Office Administration	1	0	1	0	0	1	90
OT Assistant & PT Assistant	5	1	4	0	1	4	65
Paramedic	9	4	5	1	0	8	80
Personal Support Worker	1	0	1	0	0	1	77
Pharmacy Technician	2	0	2	0	0	2	70
Police Foundations	2	1	1	0	0	2	72
Practical Nursing	14	1	13	1	0	13	76
Preparatory Health Science	1	0	1	0	0	1	66
Protection, Security and Inves	1	0	1	0	0	1	90

Data is based on students who were previously registered in GHS and then registered at Fleming in the Fall of 2013 in semester 1 of post secondary programs

Incomplete = student withdrew from Fleming prior to audit date or end of semester

Pass = the average mark for all courses with a mark between 1 -100 is >= 50%

Fail = the average mark for all courses with a mark between 1 - 100 is < 50%

Avg = average mark of successful students in the program (includes only those students who's average numeric mark was >=50%)
Enrolled = enrolled in the same program in Winter
Prepared by Fleming Data Research 2014 *(03-2014)*

SUMMARY OF GHS STUDENT SUCCESS - FALL 2013

		FALL 2013						
CODE	PROGRAM NAME	TOTAL	MALE	FEMALE	INCOMPLETE	FAIL	PASS	AVG
BTF	Biotechnol Technol-Forensics	6	3	3	1	2	3	75
SBL	Blasting Techniques	1	1	0	0	0	1	78
GBE	Business	2	1	1	0	0	2	87
CYW	Child and Youth Worker	1	0	1	0	0	1	83
EC	Early Childhood Ed (Ptbo)	1	0	1	0	1	0	-
EE	Electrical Engineering	1	1	0	0	0	1	85
EST	Esthetician	1	0	1	0	0	1	78
BO	Fish and Wildlife Technician	1	1	0	0	0	1	84
FHP	Fitness and Health Promotion	2	1	1	0	2	0	-
GSU	Gen Arts & Science-Univ Transf	3	2	1	2	0	1	75
GHS	Gen Arts/Sci-Coll Hlth Sci Opt	2	1	1	0	2	0	-
CBS	L&S Admin -Customs Border Serv	1	0	1	0	1	0	-
LCK	Law Clerk	1	0	1	1	-	-	-
MST	Massage Therapy	6	2	4	1	2	3	70
POA	OT Assistant & PT Assistant	7	4	3	0	1	6	67
PMD	Paramedic	10	6	4	1	1	8	81
PWS	Personal Support Worker	6	1	5	2	0	4	67
PHM	Pharmacy Technician	6	1	5	0	0	6	72
PF	Police Foundations	3	2	1	0	0	3	77
PN	Practical Nursing	15	2	13	0	0	15	74
PFF	Pre-Serv Firefighter Educ&Trng	1	1	0	0	0	1	84
LSR	Protection, Security and Inves	1	0	1	0	0	1	64
RLS	Recreation & Leisure Services	3	0	3	0	0	3	69
TV	Tourism and Travel	1	0	1	0	0	1	69

Data is based on students who were previously registered in GHS and then registered at Fleming in the Fall of 2013 in semester 1 of post secondary programs

Incomplete = student withdrew from Fleming prior to audit date or end of semester

Pass = the average mark for all courses with a mark between 1 -100 is >= 50%

Fail = the average mark for all courses with a mark between 1 - 100 is < 50%

Avg = average mark of successful students in the program (includes only those students who's average numeric mark was >=50%)
Enrolled = enrolled in the same program in Winter
Prepared by Fleming Data Research 2014 *(03-2014)*

Appendix B: GHS Vocational Learning Outcomes

Revised GHS Vocational Learning Outcomes

Upon completion of this certificate the learner will be able to:

1. Demonstrate **independent learning skills** in a manner that will facilitate success in future college science-related programs and in the workplace.

2. Demonstrate competency in **foundational biology, chemistry and mathematics** to a level that will facilitate success in a college post-secondary science-based program.

3. Articulate a **personal learning plan** that defines educational goals and skills needed for a successful transition to future post-secondary and workplace experiences.

4. Utilize a variety of information sources to effectively **solve problems**.

5. Use a variety of tools to **communicate effectively** to a wide range of academic, personal and professional audiences.

Appendix C: Vocational Learning Outcome Mapping

Current GA&S College Health Science Option (GHS) VLOs	2016 Pre-Health Sciences Pathway to Certificates and Diplomas VLOs
• Demonstrate competency in foundational biology, chemistry and mathematics to a level that will facilitate success in a college post-secondary science-based program. **VLO2** • Utilize a variety of information sources to effectively solve problems. **VLO4**	• Discuss and analyze biological concepts and systems of human biology, specifically cells, tissues and organ systems, and identify their relation to homeostasis, health, wellness and the human body. • Discuss the fundamental concepts of chemistry, specifically the properties of matter and organic compounds, and apply them to processes and applications related to health, wellness and the human body. • Apply concepts of mathematics and statistics to interpret health care data and solve typical mathematical problems in health care and related science professions.
• Use a variety of tools to communicate effectively to a wide range of academic, personal and professional audiences. **VLO5**	• Communicate clearly, concisely, and correctly in written, spoken, and visual form using language and terminology appropriate and relevant to health and other science-related fields.
• Demonstrate independent learning skills in a manner that will facilitate success in future college science-related programs and in the workplace. **VLO1**	• Discuss strategies for ongoing personal and professional development.
• Articulate a personal learning plan that defines educational goals and skills needed for a successful transition to future post-secondary and workplace experiences. **VLO3**	• Investigate future careers in health sciences and other high affinity fields and identify appropriate postsecondary programs to prepare for chosen career.

Appendix D: GHS Course Assessment Grids

GHS Assessment Map - Semester 1
FALL 2014
Assessment worth 10% or more

Wk	Biology (SCIE148)	Chemistry (SCIE 150)	Math (MATH 117)	Professional Issues (HLTH 273)	Communications (COMM 79)(?)	Psychology (SOCI 36)
1				Course Outline Quiz (no grade)		
2	Intro Lab (1%) D2L Quiz (1%)	Lecture Assignment (1%) Lab Safety Quiz (1%) WebCT Quiz (1.5%)	Quiz 1 (3%) Skills Assessment 1 (1%)	Class Activity 1 (2%)	Reading Comprehension Quiz	Practice Quiz
	2%	***3.5%***	***4%***	***2%***		
3	Case Study (1%) PreLab (0.5%) Lab #1 (2.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab - Calorimetry (2%) WebCT Quiz (1.5%)	Quiz 2 (3%) Skills Assessment 2 (1%)	Prep Activity 1 (2%) Class Activity 2 (3%)	Reading Comprehension Quiz MCCL Grammar Basics Diagnostic Quiz	Quiz 1
	5%	***4.5%***	***4%***	***5%***		
4	Case Study (1%) Prep Guide (0.5%) Lab #2 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab - Density (3%) WebCT Quiz (1.5%)	Test 1 (15%) Skills Assessment 3 (1%)	**Culminating Task Proposal (5%)** Prep Activity 2 (4%) Class Activity 3 (2%)	Reading Comprehension Quiz Response to a Literary Reading (10%)	Quiz 2
	6%	***5.5%***	***16%***	***11%***	***10%***	
5	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Test #1 (15%)	Quiz 3 (3%) Skills Assessment 4 (1%)	Prep Activity 3 (2%) Class Activity 4 (3%)	Reading Comprehension Quiz Responding to an Image (10%)	Quiz 3
	6%	***16%***	***4%***	***5%***	***10%***	
6	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab-Elements & Isotopes (2%) WebCT Quiz (1.5%)	Skills Assessment 5 (1%)	**Feedback Assignment (5%)** Prep Activity 4 (2%) Class Activity 5 (3%)	Reading Comprehension Quiz Responding to a Reading: Summary (10%)	Quiz 4
	6%	***4.5%***	***1%***	***10%***	***10%***	
7	Test #1 (15%)	Lecture Assignment (1%) Lab - Periodic Trends (3%) WebCT Quiz (1.5%)	Test 2 (15%) Skills Assessment 6 (1%)	Prep Activity 5 (2%) Class Activity 6 (3%)	Reading Comprehension Quiz	Quiz 5
	15%	***5.5%***	***16%***	***5%***		
8						

Wk	Biology (SCIE148)	Chemistry (SCIE 150)	Math (MATH 117)	Professional Issues (HLTH 273)	Communications (COMM 79)	Psychology (SOCI 36)
9	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab - Transition Metals (3%) WebCT Quiz (1.5%)	Quiz 4 (3%) Skills Assessment 7 (1%)	Prep Activity 6 (2%) Class Activity 7 (2%)	Reading Comprehension Quiz Grammar Test (10%)	Critical Thinking Assignment #1 (20%)
	6%	***5.5%***	***4%***	***4%***	***10%***	
10	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab – Practice Quiz (2%) Lab - Case Study (2%) WebCT Quiz (1.5%)	Quiz 5 (3%) Skills Assessment 8 (1%)	Prep Activity 7 (2%) Class Activity 8 (2%)	Reading Comprehension Quiz	Quiz 6
	6%	***6.5%***	***4%***	***4%***		
11	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab – Naming Quiz (5%) Lab - % Comp (3%) WebCT Quiz (1.5%)	Test 3 (15%) Skills Assessment 9 (1%)	Prep Activity 8 (2%) Class Activity 9 (3%)	Reading Comprehension Quiz Annotated Bibliography (15%)	Quiz 7
	6%	***10.5%***	***16%***	***5%***	***15%***	
12	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab - Avogadro (Group: 3%) WebCT Quiz (1.5%)	Quiz 6 (3%) Skills Assessment 10 (1%)	**Culminating Task (25%)** CT Presentations (10%) Prep Activity 9 (2%) Class Activity 10 (2%) Listener's Reports	Reading Comprehension Quiz	Quiz 8 Psyc In Your Life Project (20%)
	6%	***5.5%***	***4%***	***29%***		
13	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%) D2L Quiz (1%)	Lecture Assignment (1%) Lab - Conserv. Mass (3%) WebCT Quiz (1.5%) Culminating Assignment (8%)	Quiz 7 (3%) Skills Assessment 11 (1%)	Class Activity 2 (5%)	Informal Presentations (5%)	Quiz 9
	6%	***13.5%***	***4%***	***5%***	***5%***	
14	Case Study (1%) PreLab (0.5%) Lab #1 (3.5%)	Lecture Assignment (1%) Lab - Types of Reaction (2%)	Quiz 8 (3%) Skills Assessment 12 (1%)	CT Presentations (10%) Listener's Reports	Revision Portfolio (15%)	Quiz 10
	5%	***3%***	***4%***		***15%***	
15	Test #2 (20%)	Test #2 (15%)	Test 4 (20%) Skills Assessment13 (1%)	CT Presentations (10%) Listener's Reports	Research Test (10%)	Critical Thinking Assignment #2 (20%)
	25%	***15%***	***21%***		***10%***	
Notes	i-clicker Participation (5%)	Lab Safety Mark (1%)	*Best 11/13 Skills Assessment Marks *3% Bonus for Scavenger Hunt *Roman Numerals Bonus Assignment (Week 8)	CT Presentations (assigned dates): 10% Listener's Reports: 2 x 2.5% (random assigned)	Reading Comprehension and Handbook Content Quizzes (3@5%)	
	5%	***1%***			***15%***	

GHS Assessment Map - Semester 2

UPDATED Winter 2015

Assessment worth more than 10% or more

Wk	Biology (SCIE149)	Chemistry (SCIE 151)	Math (MATH 118)	Theory & Practice (HLTH 274)	Communications (COMM 159)
1	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) Stoichiometry tutorial (3%)	Team Quiz 1		
	5%	***4.5%***			
2	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) Limiting reactant lab (4%)	Team Quiz 2 Dosage Activity (3%) Quiz 1 (3%)	PA2(2%)	Module 2 Quiz (2%)
	5%	***5.5%***	***6%***	***2%***	***2%***
3	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) VSEPR & Changes of State Worksheet (3%)	Lab 1 (1%) Theory Test 1 (10%)	Job Profile Email (4%)	Module 3 Quiz (3%) Research Proposal (5%)
	5%	***4.5%***	***11%***	***4%***	***8%***
4	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	In-Class Quiz 1 (5%) The Bends Case Study (2%)	Team Quiz3 Lab 2 (1%) Quiz 2 (3%)	PA4(2%) CA4(2%)	Module 4 Quiz (2%) Research worksheet (5%)
	5%	***7%***	***4%***	***4%***	***7%***
5	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) Determination of Molar Mass Worksheet (3%)	Team Quiz 4 Lab 3 (1%) Quiz 3 (3%)	Voicemail (4%) CA5(2%)	Module 5 Quiz (3%) Report Introduction (5%)
	5%	***4.5%***	***4%***	***6%***	***8%***
6	D2L Quiz (0.5%) Lab (2%)	Test 1 (15%)	Bonus Lab (1%) Lab Test (10%) Quiz 4 (3%)	PA6(3%) CA6(2%	Role Play (5%) Role Play Self-Report (5%)
	2.5%	***15%***	***14%***	***5%***	***10%***
7	Test #1 (15%)	Solubility Curve lab (4%)	Theory Test (20%)	Professional Development 1 (5%) Performance Review 1 (4%)	Module 7 Quiz (2%) Peer Edit / Report Draft (3%)
	15%	***4%***	***20%***	***9%***	***5%***

	Biology (SCIE149)	**Chemistry (SCIE 151)**	**Math (MATH 118)**	**Theory & Practice (HLTH 274)**	**Communications (COMM 159)**
8					
9	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) Murder Mystery Group Report (5%)	Team Quiz 5	PA9(2%) Linkedin Profile (10%) CA9(2%)	Research Report (15%) Small group report presentations (4%)
	5%	***6.5%***		***14%***	***19%***
10	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) In Class Quiz 2 (5%) Equilibrium worksheet (3%)	Team Quiz 6 Quiz 5 (3%)	Professional Development 2 (5%) Performance Review 2 (4%)	Module 8 Quiz (2%) Cover Letter Contents (5%)
	5%	***9.5%***	***3%***	***9%***	***7%***
11	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) Titration Lab Report (4%)	Theory Test (10%) Quiz 6 (3%)	PA11(2%) CA11(2%)	Module 9 Quiz (2%)
	5%	***5.5%***	***13%***	***4%***	***2%***
12	D2L Quiz (0.5%) Lab (2%)	D2L Quiz (1.5%)	Team Quiz 7	PA12(2%) Portfolio with Report (25%)	Module 10 Quiz (2%) Resume and Cover Letter (15%)
	2.5%	***1.5%***		***27%***	***17%***
13	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) Lab Test (7%)	Team Quiz 8 Quiz 7 (3%)	Portfolio Presentation **(Wks. 13-15)** (10%) Peer Review **(Wks. 13-15)** (2%)	Interviews (Weeks 13-15) (15%)
	5%	***8.5%***	***3%***	***12%***	***15%***
14	D2L Quiz (0.5%) PreLab (0.5%) Lab Application (1%) Lab (3%)	D2L Quiz (1.5%) Redox Group Case Study (2%)	Team Quiz 9 Quiz 8 (3%)	Portfolio Presentations Peer Review	Interviews
	5%	***3.5%***	***3%***		
15	Test #2 (25%)	Test 2 (20%)	Theory Test (20%)	Portfolio Presentations Peer Review	Interviews
	25%	***20%***	***20%***		
Note	Iclicker 5%			PA = prep activity CA = class activity	

Appendix E: GHS Course Topic Grids

GHS Topic Linkage Map - Semester 1 – FALL 2014

	Biology (SCIE148)	**Chemistry (SCIE 150)**	**Math (MATH 117)**	**Professional Issues (HLTH 273)**	**Communications (COMM 79)**	**Psychology (SOCI 36)**
1	◦ Course Introduction	◦ Making Observations ◦ Lab Safety	◦ Introduction ◦ Basic Skills Diagnostic	◦ Introduction ◦ Principles of Scientific Investigation ◦ FISH! Philosophy & Learning Community	◦ course intro ◦ D2L navigation/create desktop folder ◦ hmwk: read assigned article for next lab	◦ Introduction to Psychology
2	◦ Lab Safety ◦ Scientific Method ◦ Characteristics of Life	◦ Classification of Matter ◦ Energy	◦ Exponents Review ◦ Significant Digits (accuracy and precision) ◦ Scientific Notation	◦ Introduction to Case Study Methods – "Katrina's Troubled Waters…" ◦ Foundations of Learning ◦ Health science and health care in the media	◦ skimming, scanning, & deep reading ◦ intro documentation ◦ 3-2-1 practice ◦ hmwk: read assigned article for next lab	◦ Modern Approaches Cognition/Perception and Critical Thinking within the Scientific Method
3	◦ Scientific Method ◦ Macromolecules ◦ ATP ◦ Enzymes	◦ Density (use sig.fig.) ◦ Energy Transfer	◦ Algebra (Expressions) – ◦ Basic skills with Whole Numbers ◦ Applications of Algebra	◦ Intro to Bioethics ◦ Critical Thinking + science research methods "The Mozart Effect" + science and the media ◦ Research methods / APA	◦ paragraphing & structure ◦ personal essays ◦ integrate quotations & in-text citations ◦ complete 3-2-1 in lab	◦ Research Methods
4	◦ Cell Structure & Function (incl. stem cells) ◦ Diffusion and Osmosis	◦ Atoms and Elements ◦ Elements & Isotopes in the health science news	◦ Basic Skills with Decimals, Integers and BEDMAS ◦ Solving Equations ◦ Theory Test #1	◦ Mental Health Self-Awareness (guest speaker) ◦ Listening Skills & Barriers to Listening ◦ Critical Thinking (3-2-1): application of medical ethics principles	◦ paraphrasing & summarizing ◦ references ◦ note-taking skills ◦ complete 3-2-1 in lab	◦ Memory
	**Is science based "visual material" used in communications?					
5	◦ Tissues ◦ Homeostasis	◦ Review and Test #1	◦ Fractions ◦ Units and Rearranging Equations	◦ Learning from Feedback & Constructive Response ◦ Stem Cell Research & Uses: Lou Gehrig's disease; banking baby's cord blood	◦ credibility of sources & researching ◦ Library Research workshop in lab	◦ Classical Conditioning CT exercise – article on stem cell research or psychological effects of Lou Gehrig's disease
6	◦ Review	◦ Valence Electrons & Periodic Trends	◦ Ratio & Proportion ◦ Applications	◦ HeLa Cells ◦ Meat and leather without any squeal	◦ critical thinking ◦ summary completed in lab	◦ Operant Conditioning
7	◦ Skeletal system (osteoporosis; 3D printers to create skulls) ◦ Review & Test	◦ Naming Ionic Compounds	◦ Theory Test #2 ◦ Percent	◦ Research ◦ Drug trials Sources: credibility and reliability	◦ style, tone, and level of language ◦ response completed in lab & read article for Wk 9 lab	◦ Operant Conditioning ◦ CT exercise – article re: pain

	Biology (SCIE148)	Chemistry (SCIE 150)	Math (MATH 117)	Professional Issues (HLTH 273)	Communications (COMM 79)	Psychology (SOCI 36)
8						
9	◦ Muscular System	◦ Naming Covalent Molecules and Simple Alkanes	◦ Percent with Formulas	◦ Self-Directed Learning ◦ Body image: diets, fitness, cosmetic surgery ◦ Functional foods	◦ Research skills—from Google to library databases ◦ Evaluating research ◦ Reviewing the documentation "code"	◦ Healthy Stress and Healthy Living CT exercise – article on eating disorders
10	◦ Neurons	◦ Practice Naming Test & PCB Case study (lab) ◦ Percent Composition	◦ Formula Manipulation (Literal Equations) and Applications	◦ Black market in human body parts ◦ Drug abuse among athletes	◦ Brainstorming and outlining	◦ Biology (links to Nervous System from Bio Course)
11	◦ Nervous System	◦ Naming Test ◦ Mole, Avogadro's number, Molar Mass	◦ Theory Test #3 ◦ Geometry	◦ Nature v. Nurture ◦ Group Think ◦ Presentation Skills	◦ Revision skills ◦ Proofreading, editing, revising	◦ Personality Part 1
12	◦ Sensory Systems	◦ Bal eqns and reaction types (use bio reactions)	◦ Metric Conversions	◦ Social Determinants of Health; global issues in healthcare; e.g., HIV/AIDS; mandatory vaccines; e.g., HPV ◦ *Culminating task presentations*	◦ Delivering Presentations	◦ Personality Part 2
13	◦ Endocrine System	◦ Continue week 12	◦ Metric and Non-Metric Conversions	◦ Professional roles and responsibilities in healthcare: POSITIVE SPACE workshop (guest speaker: PARN); "The Erasure of Sex and Gender Minorities in the Healthcare System"	◦ Informal presentations	◦ Disorders Part 1 (links to neurotransmitters discussed in Biology course)
14	◦ Review	◦ Review	◦ Conversion Applications ◦ Review	◦ Local issues and responsibilities in healthcare (guest speaker); endocrine disruptors in the environment ◦ *Culminating task presentations*	◦ Research and citation review	◦ Disorders Part 2
15	◦ Test	◦ Test	◦ Review and Theory Test #4	◦ *Culminating task presentations*	◦ Individual consultations	◦ Critical Thinking App

GHS Topic Linkage Map - Semester 2 – UPDATED Winter 2015

Note: Students will also be taking one GNED during this semester

	Biology (SCIE149)	Chemistry (SCIE 151)	Math (MATH 118)	Theory & Practice (HLTH 274)	Communications (COMM 159)
1	° Blood	° Stoichiometry	° Dosage Calculations/Conversions	° Introduction and Course Orientation ° Personal Learning Goals ° Essential Employability Skills	° Introduction ° Writing Diagnostic
2	° Cardiovascular System	° Stoichiometry cont'd	° Reading and Interpreting Data °	° Introduction to Volunteer Placement; Work/Education Placement Agreement ° Career Inventories and Investigation ° Introduction to lynda.com	° Context, Audience
3	° Cardiovascular System	° Structure and attractive forces ° Changes of state (energy in burns, homeostasis)	° Theory Test 1	° Career Preparation ° Introduction to LinkedIn ° **Volunteer Placement (Weeks 3-13)**	° Report Writing: Purpose, Audience, Context
	**Does reading & interpreting data (math) link to visual images in Comm Sem I?				
4	° Body Defenses	° Gas Laws Part 1	° Frequency Distributions, Histograms and Frequency Polygons	° Introduction to Portfolios ° Factors Affecting Career Search ° Team Building; Group roles & leadership	° Research and Documentation (APA)
5	° Review ° Test #1	° Gas laws part 2	° Creating Linear Graphs ° Online Excel Lab Module	° Career Investigation: Gaps ° Job Fair ° Portfolio Development	° Report Structure
6	° Respiratory System (HCO_3^- eqn, blowing demo)	° Test 1	° Slope and Non-Linear Graphs ° Lab Test	° Health Care Workplace Issues: Essential Health Care skills ° Portfolio Development	° Interpersonal Communication – In-class Role Play
7	° Digestive System	° Solutions Part I Solutions Lab (Graphing)	Review Theory Test 2	° Progress Meetings ° Portfolio Development	° Email and Netiquette

	Biology (SCIE149)	Chemistry (SCIE 151)	Math (MATH 118)	Theory & Practice (HLTH 274)	Communications (COMM 159)
8					
9	° Urinary System	° Solutions Part II	° Logarithms and Exponential Functions	° Career Investigation: Accreditation Bodies ° Portfolio Development	° Small Group Report Presentations
10	° Reproductive Systems	° Equilibrium ° Quiz #2	° Probability	° Progress Meetings ° Portfolio Development	° Cover Letters
11	° Development	° Acid/base Part I ° Link to bio – pH of body fluids etc.	° Theory Test 3	° Health Care workplace Issues: Dealing with Conflict ° Portfolio Workshop	° Resumes

12	◦ Cell Division	◦ Acid/base Part II	◦ Statistical Measures of Data	◦ Health Canada / Ministry of Health (Ontario): Policies & Regulations ◦ Portfolio Presentation Planning	◦ Preparing for Interviews
13	◦ DNA	◦ Redox ◦ Functional groups in organic chemistry	◦ Empirical Rule	◦ Portfolio Presentations	◦ Interviews
14	◦ Genetics	◦ Redox of organic molecules in the body	◦ Confidence Intervals	◦ Portfolio Presentations	◦ Interviews
15	◦ Review ◦ Test	◦ Test #2	◦ Theory Test 4	◦ Portfolio Presentations	◦ Interviews

Appendix F: Sustainability Objectives Map

Sustainability Objectives:	Semester 1 GHS Core Courses					
Course design provides opportunity for:	Comm79	Math117	Scie148	Scie150	Hlth273	Soci36
1. applied learning			A	A	A	A
2. complex problem solving	A	A	A	A		
3. assessment of personal actions and civic responsibility	A		R		A	A
4. systems thinking*	R	A	R	R	A	R
	Semester 2 GHS Core Courses					
	Comm159	Math118	Scie149	Scie150	Hlth274	
1. applied learning		A	A	A	A	
2. complex problem solving	A	A	A	R	R	
3. assessment of personal actions and civic responsibility	R		R		A	
4. systems thinking*	R	A	R	R	A	

*the student's role in society, how systems may impact their future work environment, how the courses in the program are interrelated

A = Assessed(assumes R), R= Reinforced/Discussed

Appendix G: Fleming GHS Graduate Retention

Graduate Outcomes/Graduate Satisfaction Survey
Fleming Preparatory Health Science (GHS) Results
(2007/08 – 2010/2011)

---

1. First of all, could you tell me whether you were attending an educational institution on a full-time basis or part-time basis during the week of XXXXX? (# Grads=160, # Contacted=112)

79%	= Yes, full-time	-- CONTINUE
4%	= Yes, part-time	-- CONTINUE
17%	= No	-- SKIP TO Q.6

2. And during (the reference week) were you attending a college, a university or other institution? (N=93)

College, a university or other institution	Count
CANADIAN THEREPUTIC COLLEGE/TRILLIUM COLLEGE	1
Algonquin	2
Cambrian	1
Canadore	1
Conestoga	3
Confederation	2
Durham	1
Fanshawe	1
Georgian	2
Lambton	1
Niagara	1
St. Lawrence	3
Seneca	1
Sheridan	1
Sir Sandford Fleming	63
Other College	2
Carelton	1
Ontario Institute of Technology	2
Other	4

Prepared by Fleming Data Research

Appendix H: Hlth274 Portfolio Feedback Exemplars

DATE: April 18, 2015

To: XXX

FROM: *Helen Bajorek-MacDonald*, Faculty
General Arts and Science - College Health Science Option
School of General Arts & Sciences

SUBJECT: Placement and Portfolio, *HLTH 274, Integrating Theory & Practice*

Congratulations, XXX, on your successful completion of *Integrating Theory & Practice*! You have accomplished a lot this semester, setting appropriate academic and career-oriented goals and working very hard to achieve them. As well, you approached the placement requirement of this course with creativity and flexibility by participating in three unique experiences wherein you developed your teamwork skills as well as demonstrated a willingness to adapt.

Feedback from your placement supervisor at *Fleming College* where you performed a variety of tasks in the Science department highlights your punctuality, professionalism and reliability including, for instance, in the care given to the work performed. You are encouraged to include detail in your written work, such as specific tasks performed, as well as to share your ideas so that others might benefit from your observations and suggestions.

You identify a number of areas of personal awareness and growth in your reflections written in your report. For instance, you enjoy detail-oriented work, you like to be challenged intellectually, and you seek a continuous learning environment in a workplace. These are important considerations for you to keep in mind when seeking employment.

What stands out about your growth through this year is the improvement in your written and oral communications skills, including increased confidence to share ideas and to deliver a formal presentation to your peers in class. As your confidence grew, the quality of your work and your contributions in class also grew. Keep up this momentum as you have a lot to share! And continue to work at proofreading and editing your written work.

It has been a pleasure to teach you and to see the effort you have put into improving your oral and written communication skills as well as increased confidence in your abilities, including going outside your comfort zones.

I wish you much success in achieving your goals!

DATE: April 18, 2015

To: XXX

FROM: *Helen Bajorek-MacDonald*, Faculty
General Arts and Science - College Health Science Option
School of General Arts & Sciences

SUBJECT: Placement and Portfolio, *HLTH 274, Integrating Theory & Practice*

Congratulations, XXX, on your successful completion of *Integrating Theory & Practice*! You have accomplished a lot this semester, setting high standards for your academic, professional, and personal goals while conscientiously managing school, work, and life balance. You arranged and completed a unique and valuable volunteer placement at the *Kawartha Sexual Assault Centre* where you conducted important timely comparative research vis-à-vis the newly-released Ontario Health and Physical Education curriculum with an emphasis on the sexual health component. It is impressive that your research report will serve to inform a variety of stakeholders, including the Community Development Department of the Peterborough Police Department.

The outstanding feedback from your placement supervisor at *Kawartha Sexual Assault Centre* highlights strength in working independently, "above average initiative, responsibility and enthusiasm for the subject", along with excellent communication skills.

Your portfolio showcases a range of skills and accomplishments, as well as an impressive employment history that should support your goal of a career in health care. Congratulations on receiving one of the few reserved spots offered to students who achieve exceptionally high academic standing by both the Paramedic Program and the Practical Nursing Program at Fleming! I hope it's not too difficult to choose!

Over the course of this year, in both of my classes, you have applied very high personal standards to your work as well as have been a welcome and engaged participant in class discussion. You are thoughtful with your contributions, you are open-minded and a respectful listener. And you demonstrate sensitivity and care for others. Notably, you have served as a role model amongst your classmates. For instance, one peer wrote in her evaluation of your final presentation:

> *[XXX] is a very confident woman! Communication skills and presentation skills are amazing. She was very well organized and interesting. XXX is very inspiring and definitely someone I would look up to.*

Simply by being who you are, you have a natural ability to inspire others!

I have valued your leadership in our learning community as you have been an outstanding positive influence amongst your peers, serving as a role model for professionalism and integrity! Thank you for your contributions to the learning experiences of others as well as for your constructive criticisms of my instructional practice. I do listen, reflect, and revise.

Keep up your hard work and the care with which you approach all tasks and situations as you are certain to continue to enjoy success in whatever you do. And safe travels on your upcoming year abroad!

DATE: April 15, 2015

To: XXXXX

FROM: *Helen Bajorek-MacDonald*, Faculty
General Arts and Science - College Health Science Option
School of General Arts & Sciences

SUBJECT: Portfolio and Placement Report, *HLTH 274, Integrating Theory & Practice*

Congratulations, XXX, on your successful completion of *Integrating Theory & Practice*! You have accomplished a lot this semester, setting achievable academic and professional goals and maintaining momentum to get you there!

Your professional portfolio showcases a range of skills and successes: academic, employment, and extra-curricular such as the valuable "SafeTALK" training you completed in suicide alertness. Your well-written report with thoughtful and thorough reflections on your learning and volunteer experiences is well above expectations! Thank you for your effort.

You have reflected on your career options and the skills you possess to move in the direction of paramedicine as well as have identified and begun to take action to fill skills gaps. For instance, you have focused on improving already strong communication skills, building teamwork skills through leadership roles and, finally, improving your memory. In your report, you make an important point about the importance of patient focus in healthcare through the ability to remember patient status, history, and any measurements taken while giving care to a patient.

Feedback from your placement supervisor at the *St. Vincent de Paul Society* confirms your reflections on the positive relationships you established while working with seniors, which is a demographic where there is ever-growing need for health care professionals.

It is heartwarming to see that your caring nature for others and commitment to community reflect in you seeing a role for volunteerism in your future.

It has been a pleasure to teach you and to get to know more about your creative talents and aspirations and the range of skills that you would bring to any job. Keep up your hard work as you are certain to continue to enjoy success in whatever you do.

Appendix I: 2014 GHS Graduate Success in Scie157/158 and Ersv80 of PMDProgram

2014 GHS Graduate Grades in GHS Biology (Scie148, Scie149) and PMD (Scie157, Scie158, ESRV80)

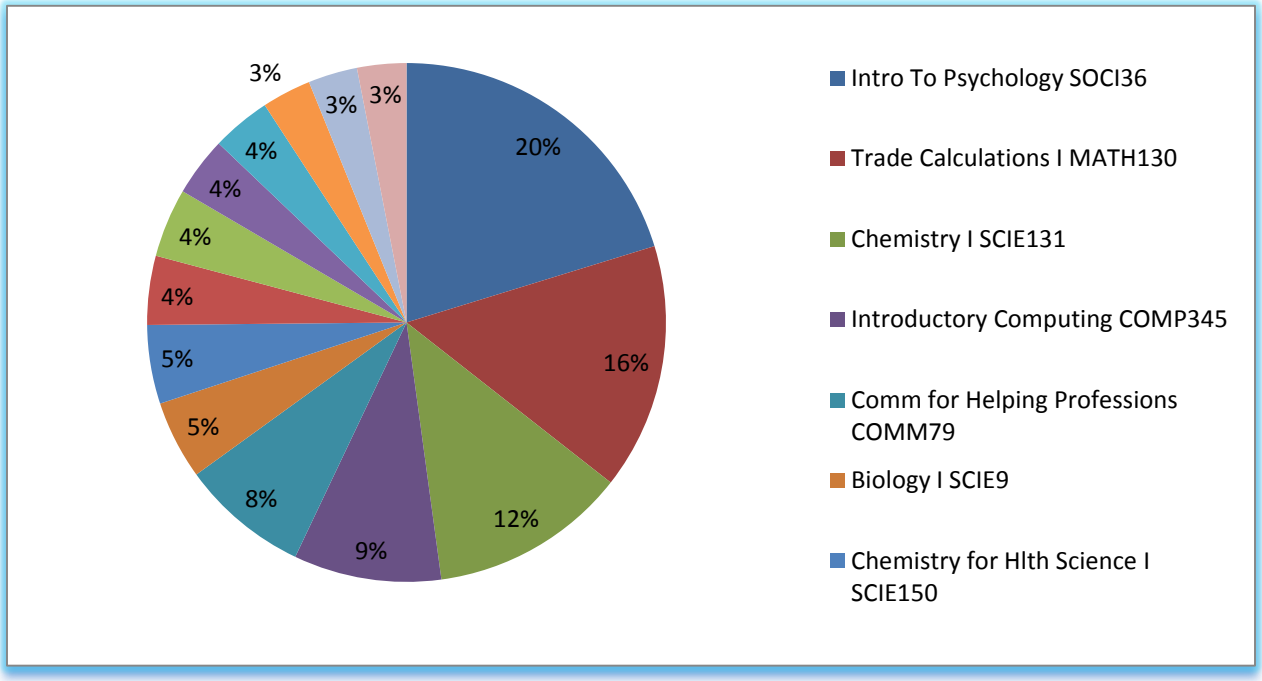
	GHS COURSES		PMD COURSES		
Student	Scie148	Scie149	Scie157	Scie158	ESRV80
1	81	86	80	69	79
2	94	96	83	82	84
3	91	90	83	81	82
4	81	85	75	84	83
5	93	89	71	73	71
6	89	88	84	84	81
7	79	88	70	67	74
8	91	76	76	73	78
9	89	90	aud	aud	79
10	94	92	83	83	76
11	100	99	96	93	92

Appendix J: Learning Centre Usage by Course

Learning Centre

School of General Arts & Science

September 2014 - May 2015



Course Name	Course #	Student Requests
Intro To Psychology	SOCI36	33
Trade Calculations I	MATH130	25
Chemistry I	SCIE131	20
Introductory Computing	COMP345	15
Comm for Helping Professions	COMM79	13
Biology I	SCIE9	8
Chemistry for Hlth Science I	SCIE150	8
Human Biology I	SCIE148	7
Physics I	SCIE138	7
Chemistry II	SCIE132	6
Intro to Psych:Princ Behaviour	SOCI158	6
Biology II	SCIE10	5
Chemistry for Hlth Science II	SCIE151	5

Appendix K: End of Semester Course Evaluation Document Template

COURSE SPECIFIC INDICATORS

Each course instructor/team will complete the course specific evaluation by considering each indicator and determining the priority for improvement.

COURSE NAME: _____
COURSE CODE: _____ ***SEMESTER:*** _____

		Priority for Improvement (1 = highest priority)			
Category	**Indicator**	**1**	**2**	**3**	**Comments**
Course Learning Outcomes	Course specific learning outcomes represent culminating (complex, rather than discreet) demonstrations of learning. They articulate the integrated skills knowledge and attitudes a student is expected to demonstrate at the end of the course.				
	Course specific learning outcomes contribute to achievement of program learning outcomes.				
	Course specific learning outcomes are measurable, realistic, and achievable.				
	Course specific learning outcomes are leveled according to the learning needs and requirements for at a specific point in a program (e.g. semester one versus semester four).				
	Course specific learning outcomes accurately and specifically reflect demonstrations of student learning that will be assessed and evaluated in the course.				
	Appropriate essential employability outcomes are identified for the course.				
Content/ Subject Matter	Course content aligns with, and is derived from, course (including essential employability skills if relevant) and program learning outcomes.				
	Course content reflects current and future program and workplace requirements and needs.				
	Course content is regularly reviewed to maintain currency and relevancy with program, industry and professional requirements and standards.				
	Course content is offered in a sequence which is learner appropriate (ie. builds skill sets in a laddered, progressive manner)				
	Course content is offered in a sequence which is aligned and integrated with the curriculum of at least one other program course.				
Learning Activities	Methods of engaging learners align with course and program learning outcomes and address a variety of				

		Priority for Improvement (1 = highest priority)			
Category	**Indicator**	**1**	**2**	**3**	**Comments**
	learning styles and needs.				
	Learning activities include regular experimentation and evaluation of new and relevant teaching methods.				
	Learning activities are aligned with course and program learning outcomes and are designed to assist the learner in achieving learning outcomes.				
	Learning activities are relevant to students' current and or future life experiences.				
	Courses incorporate a variety of learning activities designed to meet various learning styles and needs.				
	Course and program delivery methods are consistent with the nature of the program, learning outcomes, and the needs of the students.				
Learning Resource Materials	Identified learning resources support the course learning outcomes.				
	Resource materials are developed or chosen to engage learners at a level of comprehension appropriate to the specific courses.				
	Resource materials are clearly identified and are accessible to all learners.				
Authentic Assessment and Evaluation	Assessment and Evaluation methods are directly linked to course and program learning outcomes and provide students with opportunities to demonstrate their proficiency.				
	Evaluation methods are aligned with course and program outcomes and are valid, relevant, appropriate, and reliable.				
	The required standards (i.e. specific level of achievement) for each evaluation are clearly outlined for each component of the course and the program.				
	Learners are provided with fair, prompt, constructive and regular feedback on progress and fair reporting of final achievement.				
	Assessment and evaluation methods require students to perform real-world, complex tasks that demonstrate meaningful application of essential knowledge, skills and attitudes.				
	Course assessments are accurately mapped onto the current Program Assessment Grid				
	Type and number of assessments are adequate for assessment of student learning.				
Course Sequencing	Courses are offered in a sequence which is learner, program, and discipline appropriate.				

		Priority for Improvement (1 = highest priority)			
Category	**Indicator**	**1**	**2**	**3**	**Comments**
Universal Design for Learning	Course design provides multiple means of representation. (ie. options for perception, language/mathematical expressions/symbols, comprehension)				
	Course design provides multiple means of action and expression. (ie. options for physical action, expression, goal setting and strategy development)				
	Course design provides multiple means of engagement. (ie. optimization of relevance, collaboration, opportunities for self reflection and self assessment)				
Sustainability	Course design provides opportunity for applied learning				
	Course design provides opportunity for complex problem solving				
	Course design provides opportunity for the assessment of personal actions and civic responsibility				
	Course design provides opportunity for systems thinking. (ie. the student's role in society, how systems may impact their future work environment, how the courses in the program are inter-related)				

Appendix K: GHS Program Curriculum Map

Program Name - GAS College Health Science Program Code - GHS Date Updated - June 2015			Vocational Learning Outcomes					Essential Employability Skills									
	Course #	Course Name	1	2	3	4	5	1	2	3	4	5	6	7	8	9	10	11
Semester 1	SCIE 148	Human Biology I	1	1		1		1	1		1	1		1		1	1	1
	Math 117	Mathematics for College Health Science I		1		1	1	1	1	1	1	1				1	1	1
	HLTH 273	Professional Issues in Health Science	1		1	1	1	1	1			1	1	1	1	1	1	1
	SCIE 150	Chemistry for College Health Science I	1	1		1	1	1	1	1	1	1		1		1	1	1
	COMM 79	College Communications for the Helping Professions	1		1		1	1	1				1	1		1	1	1
	SOCI 36	Introduction to Psychology	1			1	1	1	1		1		1	1		1	1	1
	Course #	**Course Name**						**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Semester 2	COMM 159	Communicating at Work for the Health Professions	1		1		1	1	1				1	1		1	1	1
	Math 118	Mathematics for College Health Science II	1	1		1	1	1	1	1	1	1	1			1	1	1
	SCIE 149	Human Biology II	1	1		1		1	1		1	1		1		1	1	1
	SCIE 151	Chemistry for College Health Science II	1	1	1	1		1	1	1	1	1	1	1		1	1	1
	HLTH 274	Integrating Theory and Practice	1			1	1	1	1		1	1	1	1	1	1	1	1
	GENED	General Education Elective																

Curriculum Consultant: Kari Draker-Fortis
Program Coordinator: Susan Hyndman

Vocational Learning Outcomes - General Arts and Science - College Health Science Option (GHS)

1. Demonstrate independent learning skills in a manner that will facilitate success in future college science-related programs and in the workplace.
2. Demonstrate competency in foundational biology, chemistry and mathematics to a level that will facilitate success in a college post-secondary science-based program.
3. Articulate a personal learning plan that defines educational goals and skills needed for a successful transition to future post-secondary and workplace experiences.
4. Utilize a variety of information sources to effectively solve problems.
5. Use a variety of tools to communicate effectively to a wide range of academic, personal and professional audiences.

Essential Employability Skills Outcomes (MTCU)

1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.
3. Execute mathematical operations accurately.
4. Apply a systematic approach to solve problems.
5. Use a variety of thinking skills to anticipate and solve problems.
6. Locate, select, organize, and document information using appropriate technology and information systems.
7. Analyze, evaluate, and apply relevant information from a variety of sources.
8. Show respect for the diverse opinions, values, belief systems, and contributions of others.
9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
10. Manage the use of time and other resources to complete projects.
11. Take responsibility for one's own actions, decisions, and consequences.