

## **Office of the Assistant Superintendent for Educational Services**

To: Dr. Mike Riggle  
From: Rosanne Williamson  
Re: New Course Proposals  
Date: January 19, 2011

New course proposals from Glenbrook North and Glenbrook South administrators were brought forward at the January 10, 2011 board meeting. New course proposals which may require additional FTE will be covered by the building's authorized FTE allocation.

These courses have been thoroughly discussed in each building by relevant departmental committees, by instructional supervisor curriculum councils, and by building principals. Our ATM has also reviewed these proposals. The Board will note that they seek to address a variety of identified needs that relate to school improvement goals, state assessment data, *No Child Left Behind* mandates, Response to Intervention (RtI), and best practices. They seek, as well, to maintain the comprehensive and rigorous array of course offerings our community expects of the Glenbrooks and our students need as they pursue career and college choices.

**I recommend that the Board take action on this item at the Monday, January 24, 2011 Board meeting.**

The new course proposal as well as Board Policy: Curriculum Planning Strategy 7010 (procedures) was included in the packet on January 10<sup>th</sup> and is available on line at <http://il.glenbrook.schoolboard.net/board>.

Board Policy 7010 and its procedures identifies not only the process for how proposals shall be submitted for Board approval, but also explains what happens after they are implemented as administrators evaluate the success of the change, reporting back to the Board "no later than the end of the third semester that the course is offered." This third semester follow-up evaluation of previously approved new courses will be contained in curriculum reports at tonight's Board meeting.

To: Dr. Mike Riggle, Dr. Rosanne Williamson  
 From: Kris Frandson, John Finan  
 cc: Paul Pryma,  
 Re: New Course Proposals  
 Date: January 3<sup>rd</sup>, 2011

The Glenbrook North Instructional Supervisors Team met on Tuesday, November 3<sup>rd</sup>, 2010 and agreed to recommend the following new course proposals for your approval. In addition, GBN's curriculum council reviewed and approved these course proposals on October 21<sup>st</sup>, 2010. These courses meet with the approval of the principal and both associate principals. I am also attaching the new course proposal forms for each of these listed below.

| Department  | Course Title                         | Status  | Rational  | Impact on Budget, FTE, Facilities  | Evaluation  |
|-------------|--------------------------------------|---|---|--|---|
| Science     | Anatomy and Physiology: Body Systems | New Course – One semester elective course   | This course will complement our Anatomy and Physiology: Bones, Muscles and Nerves semester course for a year-long study if students desired. Provides an additional lab based single semester course for students seeking to take lab science courses during their senior year. Students interested in the various medical fields would find the class beneficial.  | Enrollment in available science electives may be effected, but impact to other elective courses would be minimal. Estimated costs for implementation of the course would be \$4000 for start up equipment and consumable supplies. After establishment of the course, yearly consumable supplies would be approximately \$1200. There is no anticipated change in FTE due to this course addition.   | The course's success will be evaluated in part by continued student interest in the elective. Enrollment is expected to remain consistent and/or grow over the first two years of implementation. Interdisciplinary collaboration will exist among teachers and students in the Anatomy & Physiology and Fundamentals of Personal Training courses. |
| Mathematics | Intensified Algebra 163 GTA          | New Course – Year-long course fulfills math graduation requirement and provides additional non-mathematics elective credit.<br><br>This class would be schedule as a full block (90 min.) each day. | In response to our school improvement plan, this course is being recommended to support students who begin their math sequence at the Pre-Algebra level and are a full year behind pace with their peers. A year of Algebra instruction as well as addressing any academic gaps in basic pre-algebra skills will be provided by this course. Students completing the class would be on pace for geometry their sophomore year and advanced algebra their junior year. | This will be a team taught course with one teacher from math and one from special education. The impact of this course would be a potential increase of 0.4 FTE in Math for the first year, but in subsequent years, anticipation in decline of Algebra GTA sections would absorb this required FTE. Special education should be able to absorb FTE from its current program. Professional Development costs for the summer will be approximately \$3000 and additional professional development during the school year will be \$700 that will be supported funded with building resources and grant funds. | Successful completion of the course and assessments of student comprehension of Algebra 163 GTA content/concepts. Additional monitoring of student academic performance in Geometry and Advanced Algebra courses.   |

|                            |  |   |   |  |  |
|----------------------------|--|---|---|--|--|
| Social Studies             | Sports and Society                           | New Course - Summer School enrichment course that would receive .25 academic credit | Provides an enrichment social studies summer elective that is based upon the sociological study of sports in American society. Enrichment opportunities for summer studies were part of the recommendations from the summer school study completed a few years ago. | Summer school offering, FTE would be supported by summer school tuition costs. No additional FTE costs to the district. Costs of instructional material would come from the existing social studies budget.  | Evaluation of the course will include administrative observation, student academic performance, student feedback and teacher reflection. Positive experiences for students and teachers will assist in determining success as well as continued and sufficient enrollment in the course. |
| World Languages            | Modern Hebrew 273 Honors, 363 and 373 Honors | New Courses – Year long elective course   | Continued development of our Modern Hebrew language program requires this additional series of courses. Addition of an honors level to these courses is needed to meet students' level of interest and academic challenge.  | No new FTE is anticipated. Declines in other language enrollments would result and FTE would be absorbed within the department. Summer curriculum work would need to be funded from the existing building budget for the development of this curriculum. | Student enrollment, student surveys, academic progress and success in the course will be utilized to determine the success and continuation of the program.  |
| <b>Course Name Changes</b> | <b>Current Title</b>                         | <b>New Title</b>  |   |  |  |
| Career and Life Skills     | Consumer Education 171                       | <i>Course title change to</i> <b>Consumer Education Honors 171</b>                  |   |  |  |
| Career and Life Skills     | Management 161                               | <i>Course title change to</i> <b>Management and Leadership 161</b>                  |   |  |  |
| Careers and Life Skills    | Clothing 161, 261 and 361                    | <i>Course title change to</i> <b>Fashion Construction Studio 161, 261 and 361</b>   |   |  |  |
| Social Studies             | It's the Law/Current Issues 163 GT           | <i>Course title change to</i> <b>Civics 163 GT</b>                                  |   |  |  |

## **APPLICATION FOR NEW CURRICULAR OFFERING**

School: GBN

Department: Science

Date: October 14, 2010

Name of proposed course(s): **Anatomy & Physiology: Body Systems**

### **1. Brief Description of New Curricular Offering:**

The focus of this semester-long course in human anatomy and physiology will complement our current Anatomy & Physiology: Bones, Muscles and Nerves course offering for students interested pursuing any healthcare related career paths. The lessons are designed to develop a solid understanding of how the human body works. Materials will be approached through case-based investigations using a whole-class inquiry approach. Anatomy and Physiology: Body Systems will enable students to develop an understanding of anatomical positions and a general overview of organ systems, to review the chemical composition of living matter (concepts of matter and energy, molecules and atoms, chemical bonding as related to biochemical processes), to identify and explain major cell types and tissues of the human body and to identify and explain the functions of the senses as well as body systems including the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems.

### **2. Curriculum Planning Committee Membership:**

- a. List the members of the committee:  
Frank Fiala, Karyn Weber, and Jean Witty
- b. Give the rationale for the members of this committee:

This committee consists of two science teachers and one physical education teacher who have an interest in developing and implementing a second semester anatomy and physiology course and will bring personal experience to the course that will translate to solid learning opportunities for GBN students. Frank Fiala has a doctorate in chiropractic medicine, and Jean Witty has a doctor of philosophy degree in cell biology and anatomy. Karyn Weber currently teaches the Fundamentals of Personal Training course offered in the Physical Education Department. Karyn, Frank, and Jean have already worked to develop the Anatomy and Physiology: Bones, Muscles, and Nerves course. This team will continue to develop a second course that will further complement the existing Physical Education course.

- c. If outside experts are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.

Karen Weber, GBN Physical Education Department, was consulted because she currently teaches the Fundamentals of Personal Training course at GBN. The curriculum team sees these two courses supporting one another and the curriculum will be written as such.

Jean Witty has worked with the current Anatomy & Physiology instructor at Oakton Community College to investigate the use of the cadaver lab in their facility and has joined the Harris Loan Program at the Field Museum, Chicago, in order to obtain supplemental materials for specialized units throughout the course.

Frank Fiala has provided diagnostic tools and equipment for making clinical cases relevant to students. In addition, Frank Fiala, worked with Dr. Robert Druzinsky, director of Anatomy & Physiology at Governor's State University, in the regarding a field trip to the cadaver lab.

3. **Need** for the new curricula:

- a. Present and analyze data on student learning that point to a need for a new course.

The GBN Science Department has recently shifted its course sequence to ensure that the core science courses (biology, chemistry, and physics) would be completed (pending math prerequisites) during the first three years of high school. As a result, there is a significant need for lab-based electives offered during a students' fourth year at GBN.

Illinois State Standards and National Science Standards both indicate that there is a need for real-life investigative experiences in high school science. In addition, students should be exposed to science-related careers.

- b. Present other data (demographic, anecdotal, research, and others) that point to the need for a new course.

During the 2008-2009 school year, the science department developed, implemented, and analyzed data from a student survey on science electives. Students expressed an interested in semester-long, lab-based electives. In addition, students expressed a specific interest in an Anatomy & Physiology course.

- c. Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for the new course.

4. **Rationale** for addressing the need for the new course:

- a. State the purpose of the new course, indicating specifically how this new course shall improve student learning by meeting the needs described in #3 above.

Currently, our Anatomy & Physiology course is a one-semester course that focuses on the skeletal, muscular, and nervous systems. The addition of this second course will complete the yearlong curriculum of a typical anatomy and physiology course while still giving the students the option to enroll in one or both semesters.

Illinois Learning Standards require high schools to afford students the opportunity to analyze a particular occupation to identify decisions that may be influenced by knowledge of science. In addition, high schools should engage students in a manner to gain an appreciation of how scientific and technological progress has affected fields of study, careers and job markets and aspects of everyday life. This course will enable students to role play as medical professionals and investigate a number of medical-related careers.

- b. If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.

The department considered offering a year-long Anatomy & Physiology course. However, this was rejected due to student survey data that indicated a desire for semester-long electives.

The department also considered offering one semester of anatomy and a second semester of physiology. However, because the two are interconnected, it is optimal to teach the subjects concurrently.

- c. Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

This course, if offered, will, by design, augment the Fundamentals of Personal Training course in the PE department and will build upon the current health and biology curricula students experience as sophomores and freshmen, respectively.

5. **Description** of proposed course:

- a. Describe the students for which this new curriculum has been designed and the approximate size of the target group.

The target group will range from Team to Honors students; the course will be developed for the regular-level (163) student. The class will be designed as a hands-on experience that will meet the needs of a variety of learners. Because it will be considered a medical-related course, we expect to see enrollment from students who are interested in medical technology, nursing, athletic training, physical therapy, and pre-med, to name a few.

Enrolled students will be juniors or seniors who have completed or are concurrently enrolled in physics. This prerequisite will ensure that students complete the core science courses (biology, chemistry, and physics) prior to exploring electives.

- b. Tentative Outline of Proposed Course

# Anatomy & Physiology: Body Systems

|  |  |   |
|--|--|---|
| <b>Unit Name</b>                       | Unit 1: Introductory Anatomy and Physiology Topics   | Unit 2: The Senses  |
| <b>Class Periods</b>                   | 4  | 4   |
| <b>Concepts/Topics</b>                 | <ul style="list-style-type: none"> <li>Levels of Structural Organization: Organ System Overview</li> <li>Maintaining Life: Necessary Life Functions/Homeostasis</li> <li>The Language of Anatomy: Anatomical Position/directional and regional terms, body planes &amp; sections/cavities</li> <li>Cells and Tissues</li> <li>Part 1: Anatomy of a cell, Organelle review, cellular diversity, cell physiology membrane transport, cell division, protein synthesis</li> <li>Part 2: Body Tissues: Introduction to basic tissue types</li> </ul> | <ul style="list-style-type: none"> <li>Special Cell Types in the Sense Organs (Histology)</li> <li>The Eye and Vision</li> <li>Anatomy of the Eye</li> <li>Pathway of Light through the eye and light refraction</li> <li>Visual fields and visual pathways</li> <li>Eye reflexes</li> <li>The Ear: Hearing and Balance</li> <li>Anatomy of the Ear</li> <li>Mechanisms of Equilibrium</li> <li>Mechanisms of Hearing</li> <li>Hearing &amp; Equilibrium Deficit</li> <li>Chemical Senses: Taste &amp; Smell</li> <li>Olfactory Receptors and the sense of smell</li> <li>Taste buds and the sense of taste</li> <li>Developmental Aspects of the special senses</li> </ul> |
| <b>Text Resource</b>                   | Chapter 1, 2, 3 pp. 2-108  | Ch. 8, pp. 280-308  |
| <b>Suggested Labs &amp; Activities</b> | <ul style="list-style-type: none"> <li>Language of Anatomy Exercise</li> <li>Cell Anatomy &amp; Cell Division Class Project</li> <li>Classification of Tissues exercise</li> </ul>   | <ul style="list-style-type: none"> <li>Special Senses investigation</li> <li>Use of the Otoscope Lab</li> <li>Vision screening tests</li> </ul>   |
| <b>Skills</b>                          | <ul style="list-style-type: none"> <li>Lab Safety &amp; Technique</li> <li>Design &amp; Implement Lab Investigation</li> <li>Drawing Conclusions</li> <li>Text Reading</li> <li>Related-Article Reading</li> <li>Note taking</li> <li>Microscope Use &amp; techniques</li> <li>Diagramming</li> <li>Collaborative Group work</li> <li>Peer Editing/Grading</li> <li>Research Anatomy-related topics</li> <li>Working in a scientific community</li> <li>Communicating effectively</li> </ul>   | <ul style="list-style-type: none"> <li>Exercising proper lab safety</li> <li>Working in a scientific community</li> <li>Communicating effectively</li> <li>Applying knowledge learned by using visual comparison</li> <li>Lab safety &amp; technique</li> <li>Design &amp; implement lab investigation</li> <li>Creating data tables</li> <li>Drawing conclusions</li> <li>Microscope Use &amp; Techniques</li> <li>Text reading</li> <li>Related article reading</li> <li>Note taking</li> <li>Cooperative group work</li> <li>Presentation skills</li> <li>Applying research to real-life problems</li> </ul>   |
| <b>State Standards</b>                 | 11.A 4a-f, 11.A. 5a-e, 12.A.4b   | 11.A 4a-f, 11.A. 5a-e, 12.A.4b  |

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|--|--|--|
| <b>Unit Name</b>                       | <b>Unit 3: Endocrine System</b>  | <b>Unit 4: Blood, Cardiovascular System</b>  |
| <b>Class Periods</b>                   | <b>3</b>   | <b>7</b>   |
| <b>Concepts/Topics</b>                 | <ul style="list-style-type: none"> <li>Overview of the endocrine system and hormone function</li> <li>Major endocrine organs: pituitary gland, thyroid gland, parathyroid glands, adrenal glands, pancreatic islets, pineal gland, thymus, gonads</li> <li>Cell types in the Endocrine System (histology)</li> </ul>   | <ul style="list-style-type: none"> <li>The Blood: composition &amp; functions of blood</li> <li>Histology of Blood Cells</li> <li>Hemostasis</li> <li>Blood groups and transfusions</li> <li>Developmental aspects of blood</li> <li>Structure and function of the heart</li> <li>Types of cells in the heart and vessels</li> <li>Function, and histology of blood vessels</li> <li>Trace the flow of oxygenated and deoxygenated blood through the body</li> </ul>   |
| <b>Text Resource</b>                   | Ch. 9, pp. 309-338   | Ch. 10, pp. 339-359<br>Ch. 11, p. 360-401<br>Ch. 12, pp. 402-439   |
| <b>Suggested Labs &amp; Activities</b> | <ul style="list-style-type: none"> <li>Functional Anatomy of Endocrine Glands</li> <li>Case Study: Hormone Investigation</li> </ul>  | <ul style="list-style-type: none"> <li>Blood typing simulation</li> <li>Anatomy of the Heart Investigation</li> <li>Anatomy of Blood Vessels Investigation</li> <li>Human Cardiovascular Physiology-Blood Pressure and Pulse Determinations</li> </ul>   |
| <b>Skills</b>                          | <ul style="list-style-type: none"> <li>Lab Safety &amp; Technique</li> <li>Design &amp; Implement Lab Investigation</li> <li>Drawing Conclusions</li> <li>Text Reading</li> <li>Related-Article Reading</li> <li>Note taking</li> <li>Microscope Use &amp; techniques</li> <li>Diagramming</li> <li>Collaborative Group work</li> <li>Peer Editing/Grading</li> <li>Research Anatomy-related topics</li> <li>Working in a scientific community</li> <li>Communicating effectively</li> </ul> | <ul style="list-style-type: none"> <li>Lab safety &amp; technique</li> <li>Graphical analysis</li> <li>Design &amp; implement lab investigation</li> <li>Creating data tables</li> <li>Drawing conclusions</li> <li>Quantitative data collection</li> <li>Text reading</li> <li>Related article reading</li> <li>Note taking</li> <li>Microscope Use &amp; techniques</li> <li>Diagramming</li> <li>Collaborative Group work</li> <li>Peer Editing/Grading</li> <li>Research Anatomy-related topics</li> <li>Working in a scientific community</li> <li>Communicating effectively</li> </ul> |
| <b>State Standards</b>                 | 11.A 4a-f, 11.A. 5a-e, 12.A.4b   | 11.A 4a-f, 11.A. 5a-e, 12.A.4b   |



| <b>Unit Name</b>                       | <b>Unit 5: Lymphatics &amp; the Immune System</b>  | <b>Unit 6: Respiratory System</b>  |
|--|--|--|
| <b>Class Periods</b>                   | <b>2</b>   | <b>3</b>   |
| <b>Concepts/Topics</b>                 | Structure and function of the lymphatic system <ul style="list-style-type: none"> <li>• The lymphatic vessels</li> <li>• Lymph nodes</li> <li>• Other lymphoid organs (ie. Spleen)</li> <li>• Histology of Cells of the Immune System</li> <li>• Innate Body Defenses: Cell surface membrane barriers, phagocytes, natural killer cells</li> <li>• Inflammatory system</li> <li>• Acquired Immunity</li> <li>• Adaptive body defenses: Antibodies, Antigens, Lymphocytes &amp; Macrophages</li> <li>• Immune System Disease</li> </ul>   | <ul style="list-style-type: none"> <li>• Functional anatomy of the respiratory system</li> <li>• Histology of the lung and air passages</li> <li>• Mechanics of Breathing</li> <li>• Respiratory physiology</li> <li>• Respiratory disorders</li> <li>• Developmental aspects of the respiratory system</li> </ul>   |
| <b>Text Resource</b>                   | Ch. 12, pp. 402-439  | Ch. 13, pp. 440-467  |
| <b>Suggested Labs &amp; Activities</b> | <ul style="list-style-type: none"> <li>• Case Study Investigation: Cancer and the Lymphatic System</li> </ul>  | <ul style="list-style-type: none"> <li>• Anatomy of the Respiratory System exercise</li> <li>• Respiratory System Physiology Investigation (Breathing lab)</li> <li>• Spirometry demonstration</li> </ul>  |
| <b>Skills</b>                          | <ul style="list-style-type: none"> <li>• Lab safety &amp; technique</li> <li>• Graphical analysis</li> <li>• Design &amp; implement lab investigation</li> <li>• Creating data tables</li> <li>• Drawing conclusions</li> <li>• Quantitative data collection</li> <li>• Text reading</li> <li>• Related article reading</li> <li>• Note taking</li> <li>• Concept mapping</li> <li>• Microscope use</li> <li>• Diagramming</li> <li>• Collaborative Group work</li> <li>• Peer Editing/Grading</li> <li>• Research Anatomy-related topics</li> <li>• Working in a scientific community</li> <li>• Communicating effectively</li> <li>• </li> </ul> | <ul style="list-style-type: none"> <li>• Lab safety &amp; technique</li> <li>• Graphical analysis</li> <li>• Design &amp; implement lab investigation</li> <li>• Creating data tables</li> <li>• Drawing conclusions</li> <li>• Quantitative data collection</li> <li>• Text reading</li> <li>• Related article reading</li> <li>• Note taking</li> <li>• Concept mapping</li> <li>• Microscope use</li> <li>• Diagramming</li> <li>• Collaborative Group work</li> <li>• Peer Editing/Grading</li> <li>• Research Anatomy-related topics</li> <li>• Working in a scientific community</li> <li>• Communicating effectively</li> </ul> |
| <b>State Standards</b>                 | 11.A 4a-f, 11.A. 5a-e, 12.A.4b   | 11.A 4a-f, 11.A. 5a-e, 12.A.4b   |

|  |   |   |
|--|---|---|
| <b>Unit Name</b>                       | Unit 7: Digestive System & Body Metabolism  | Unit 8: The Urinary System  |
| <b>Class Periods</b>                   | 4   | 3   |
| <b>Concepts/Topics</b>                 | <ul style="list-style-type: none"> <li>Anatomy &amp; Physiology of the Digestive system</li> <li>Nutrition and Metabolism</li> <li>Developmental Aspects of the Digestive system</li> </ul> <p>Review:<br/>Structure and function of the digestive system (alimentary canal and accessory organs)<br/>Cell Types in the Digestive system (Histology)</p> <p>Elaboration of:</p> <ul style="list-style-type: none"> <li>Enzymes and their role in digestion</li> <li>Physical digestion vs. chemical digestion</li> <li>Peristalsis</li> <li>Role of hormones in digestion</li> <li>Digestion process</li> </ul> | <ul style="list-style-type: none"> <li>Structure and function of the excretory system</li> <li>Structure and function of the urinary system (Kidneys, Ureters, Bladder, and Urethra)</li> <li>Structure and function of the kidney</li> <li>Histology of the Kidney</li> <li>Structure and function of the nephron</li> <li>Histology of the Nephron</li> <li>Process of filtration, secretion &amp; reabsorption</li> <li>Role of hormones in water conservation</li> <li>Urine formation process</li> <li>Fluid, Electrolyte and Acid/Base balance</li> <li>Anatomy and Histology of the Ureter, Bladder, and Urethra</li> <li>Developmental Aspects of the Urinary System</li> </ul> |
| <b>Text Resource</b>                   | Ch. 14, pp. 468-516   | Ch. 15, pp. 517-543   |
| <b>Suggested Labs &amp; Activities</b> | <ul style="list-style-type: none"> <li>Functional Anatomy of the Digestive System Investigation</li> <li>Nutrition Lab</li> </ul>   | <ul style="list-style-type: none"> <li>Functional Anatomy of the Urinary System investigation</li> <li>Kidney dialysis simulation</li> <li>Urinalysis</li> </ul>  |
| <b>Skills</b>                          | <ul style="list-style-type: none"> <li>Lab safety &amp; technique</li> <li>Graphical analysis</li> <li>Design &amp; implement lab investigation</li> <li>Creating data tables</li> <li>Drawing conclusions</li> <li>Quantitative data collection</li> <li>Text reading</li> <li>Related article reading</li> <li>Note taking</li> <li>Concept mapping</li> <li>Collaborative group work</li> </ul>  | <ul style="list-style-type: none"> <li>Lab safety &amp; technique</li> <li>Graphical analysis</li> <li>Design &amp; implement lab investigation</li> <li>Creating data tables</li> <li>Drawing conclusions</li> <li>Quantitative data collection</li> <li>Text reading</li> <li>Related article reading</li> <li>Note taking</li> <li>Concept mapping</li> <li>Microscope use</li> </ul>  |
| <b>State Standards</b>                 | 11.A 4a-f, 11.A. 5a-e, 12.A.4b  | 11.A 4a-f, 11.A. 5a-e, 12.A.4b  |

| Unit Name                   | Unit 9: The Reproductive System  | Unit 10: Cat Dissection   |
|-----------------------------|--|---|
| Class Periods               | 5  | 5   |
| Concepts/Topics             | <ul style="list-style-type: none"> <li>Anatomy &amp; Histology of the Male Reproductive system</li> <li>Male Reproductive Functions</li> <li>Anatomy &amp; Histology of the Female reproductive system</li> <li>Female Reproductive system functions and cycles</li> <li>Mammary glands, anatomy and histology</li> <li>Survey of Pregnancy and Embryonic development</li> <li>Developmental Aspects of the Reproductive system</li> </ul>   | <ul style="list-style-type: none"> <li>Identification of body structure &amp; function</li> <li>Cumulative unit of all body systems</li> </ul>  |
| Text Resource               | Ch. 16, pp. 544-581  | GBN Developed Inquiry Packets   |
| Suggested Labs & Activities | <ul style="list-style-type: none"> <li>Anatomy of the Reproductive System Investigation</li> </ul>   | <ul style="list-style-type: none"> <li>Cat dissection</li> </ul>  |
| Skills                      | <ul style="list-style-type: none"> <li>Lab Safety &amp; Technique</li> <li>Design &amp; Implement Lab Investigation</li> <li>Drawing Conclusions</li> <li>Text Reading</li> <li>Related-Article Reading</li> <li>Note taking</li> <li>Microscope Use &amp; techniques</li> <li>Diagramming</li> <li>Collaborative Group work</li> <li>Peer Editing/Grading</li> <li>Research Anatomy-related topics</li> <li>Working in a scientific community</li> <li>Communicating effectively</li> </ul> | <ul style="list-style-type: none"> <li>Lab safety &amp; technique</li> <li>Drawing conclusions</li> <li>Text reading</li> <li>Related article reading</li> <li>Note taking</li> <li>Collaborative group work</li> <li>Practical lab skills</li> </ul> |
| State Standards             | 11.A 4a-f, 11.A. 5a-e, 12.A.4b   | 11.A 4a-f, 11.A. 5a-e, 12.A.4b  |

6. **Implications** of the proposed course:

- a. What are the implications of this proposed course for staffing, facilities, and budget?

Because the GBN science department has recently shifted the curricular sequence, a student's fourth year at GBN will be "open" for a science elective of their choice. In the past, students were scheduled for four years of science classes (Unified Lab Science, Biology, Chemistry, Physics). As a result, we do not expect a need for an increase in staffing.

The consumable and non-consumable materials needed for Anatomy & Physiology are estimated at a cost of \$4000.00 (see attached spreadsheet-annual consumable budget of approximately \$1200.00).

The Fundamentals of Personal Training and Anatomy & Physiology will complement one another. Ideally, students will be enrolled in both courses which will allow for further collaboration among teachers and students.

- b. What are the implications of this proposed change for other courses in the department and for other departments in the school?

Within the science department, we may see a decrease in the enrollment in AP Biology as well as a decrease in other department electives. However, because of the prerequisites for the course, we do not believe that the electives will suffer a tremendous drop in enrollment.

Because the Fundamentals of Personal Training (FPT) and Anatomy & Physiology will complement one another, Physical Education may see an increase in FPT enrollment.

- c. What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?

A summer curriculum project will be necessary for the curriculum designers as well as a small group of peers to edit and make suggestions for improvement.

Minimal professional leave may be required to allow the curriculum designers to meet with area high schools and community colleges that offer anatomy and physiology.

Time for Karyn, Jean, and Frank to meet and/or observe one another to coordinate curriculum.

7. **Method of evaluating** the success of the proposal after it is implemented:

- a. If the proposal is approved and implemented, how shall it be evaluated? What specific outcomes shall indicate success of the implemented proposal?

Interdisciplinary collaboration will exist among teachers and students in the Anatomy & Physiology and Fundamentals of Personal Training courses.

The course's success will be evaluated in part by continued student interest in the elective. Enrollment is expected to remain consistent and/or grow over the first two years of implementation.

| Equipment Requests   |            |      |            |                   |
|--|------------|------|------------|-------------------|
| Item   | Vendor     | Quan | Unit price | Total             |
| Heart poster   | Wards      | 1    | \$17.50    | \$17.50           |
| Urinary Tract poster   | Carolina   | 1    | \$19.95    | \$19.95           |
| Male reproductive system poster                                  | Carolina   | 1    | \$19.95    | \$19.95           |
| Female reproductive system poster                                | Carolina   | 1    | \$19.95    | \$19.95           |
| Eye Anatomy Poster   | Wards      | 1    | \$17.50    | \$17.50           |
| Ear Anatomy poster   | Wards      | 1    | \$17.50    | \$17.50           |
| Blood Cells Poster   | Wards      | 1    | \$24.95    | \$24.95           |
| Astigmatism Test Chart   | Carolina   | 1    | \$12.95    | \$12.95           |
| Human Skin Model   | Carolina   | 1    | \$155.00   | \$155.00          |
| Functional Lung Model  | Wards      | 1    | \$62.95    | \$62.95           |
| Kidney Model   | Carolina   | 1    | \$136.25   | \$136.25          |
| Heart Model (3D)   | Carolina   | 1    | \$53.75    | \$53.75           |
| Digital Blood Pressure/Pulse Monitor                             | Carolina   | 1    | \$69.95    | \$69.95           |
| Otoscope   | Wards      | 2    | \$129.00   | \$258.00          |
| Disposable Specula (for Otoscopes)                               | Wards      | 1    | \$69.95    | \$69.95           |
| Tuning Forks (512 Frequency+)                                    | Carolina   | 1    | \$114.00   | \$114.00          |
| Ishihara's color blindness plates                                | Carolina   | 1    | \$199.95   | \$199.95          |
| Mammal Corpus Luteum   | Carolina   | 7    | \$5.60     | \$39.20           |
| Mammal Duodenum Sec  | Carolina   | 7    | \$4.25     | \$29.75           |
| Mammal Kidney  | Carolina   | 7    | \$4.95     | \$34.65           |
| Epididymis   | Carolina   | 7    | \$4.90     | \$34.30           |
| Testis Sec   | Carolina   | 7    | \$4.90     | \$34.30           |
| Mammal Ovary Sec   | Carolina   | 7    | \$6.80     | \$47.60           |
| Mammal Graafian Follicles  | Carolina   | 7    | \$7.00     | \$49.00           |
| Mammal Artery & Vein   | Carolina   | 7    | \$4.60     | \$32.20           |
| Mammal Trachea CS  | Carolina   | 7    | \$4.95     | \$34.65           |
| Mammal Lung Sec  | Carolina   | 7    | \$4.25     | \$29.75           |
| Human Lung Sec   | Carolina   | 7    | \$6.35     | \$44.45           |
| Mammal Cardiac Muscle (two views: longitudinal, cross sectional) | Carolina   | 7    | \$4.90     | \$34.30           |
| Human Thyroid Gland  | Carolina   | 1    | \$4.95     | \$4.95            |
| Pancreas tissue (differential stained)                           | Carolina   | 1    | \$5.35     | \$5.35            |
| Human Artery & Vein, cross section                               | Carolina   | 1    | \$7.00     | \$7.00            |
| Trachea, cross section (human)                                   | Carolina   | 1    | \$4.95     | \$4.95            |
| Lung (human)   | Carolina   | 1    | \$6.35     | \$6.35            |
| Duodenum, cross section (human)                                  | Carolina   | 1    | \$4.25     | \$4.25            |
| Mammal Liver   | Carolina   | 1    | \$5.10     | \$5.10            |
| Kidney (longitudinal section)(human)                             | Carolina   | 1    | \$10.30    | \$10.30           |
| Storage Bins (for Cats)  | Target     | 15   | 12.00      | \$180.00          |
| Penlights (ADC metalite reusable penlight, aluminum, small)      | Amazon.com | 7    | 4.28       | \$29.96           |
| Human Sperm Smear  | Carolina   | 1    | 7.50       | \$7.50            |
| <b>TOTAL</b>   |            |      |            | <b>\$1,979.91</b> |

|  |          |    |          |                  |
|--|----------|----|----------|------------------|
| <b>Annual Consumable Supplies</b>        |          |    |          |                  |
| Urinanalysis Simulated kit               | Carolina | 1  | \$149.00 | \$149.00         |
| Comparative Mammalian Eye Dissection kit | Carolina | 1  | \$45.95  | \$45.95          |
| Comparative Sheep Heart Dissection kit   | Carolina | 1  | \$69.95  | \$69.95          |
| Sheep Kidney                             | Carolina | 14 | \$5.75   | \$80.50          |
| Sheep Pluck (butcher)                    | Carolina | 1  | \$12.50  | \$12.50          |
| cardboard tubes for respiration lab      | Carolina | 1  | \$19.95  | \$19.95          |
| ECG electrodes (stickers)                | Carolina | 1  | \$15.75  | \$15.75          |
| Cats (dissection)                        | Carolina | 15 | 50       | 750.00           |
| <b>Total</b>                             |          |    |          | <b>\$1143.60</b> |

## **APPLICATION FOR CURRICULAR CHANGE AND COURSE PROPOSAL**

School: Glenbrook North

Department: Mathematics

Date: October 21, 2010

Name of proposed curricular change: Intensified Algebra 163 GTA (daily ninety-minute block)

### **1. Brief description of the curricular change**

The Mathematics and Special Education Departments are proposing a new course for incoming freshmen who have been recommended for Pre-Algebra. This new course would be offered for 90 minutes every day, allowing students to complete the equivalent of Pre-Algebra 163 and Algebra 163 by the end of their freshmen year. Students will receive one mathematics credit and one additional elective credit (not counting towards math graduation requirements) for this course. This course will be team-taught by a mathematics teacher and a special education teacher. Most of the students in this class will have an IEP.

### **2. Curriculum Planning Committee Membership**

#### **a) List the members of the committee.**

|                      |   |
|----------------------|---|
| Eric Etherton        | Assistant Principal of Student Services           |
| Kris Frandson        | Associate Principal of Curriculum and Instruction |
| Kathy French         | Instructional Supervisor of Special Education     |
| Tara Hoeft-Runde     | Special Education Teacher                         |
| Joy Lacey            | Mathematics Teacher                               |
| Robin Levine-Wissing | Instructional Supervisor of Mathematics           |

#### **b) Give the rationale for the membership of this committee.**

The committee members were chosen because they each have a large stake in student achievement in mathematics, and thus in the success of this program.

### **3. Need for the curricular change:**

#### **a) Present other data (demographic, anecdotal, research, and others) that point to a need for change.**

This new course will provide at-risk learners with access to course work similar to that of their peers. The committee believes that freshmen students need more intense mathematics instruction. Currently, the targeted students enter high school with math skills that are behind 95% of their peers at GBN. Their local Terra Nova percentiles are below 10% and most of these students have needs that extend beyond learning mathematics. They may have social or emotional issues, and many struggle with reading and writing. About 50% of students enrolled in Pre-Algebra are eligible for special education services because of their disabilities. The other 50% experience significant learning needs or require intense remediation of basic pre-algebra skills.

Historical enrollment in Pre-Algebra has been: 18 students in 2006; 21 in 2007; 23 in 2008; 13 in 2009; and 12 students in 2010. The trend towards fewer students in Pre-Algebra in the last two years could potentially be attributed to IEP teams recommending students for the more advanced Algebra 163 GTA who eventually need additional support either one-on-one from teachers or in the Math Enrichment Center. These students would be better served in the new course.

b) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change.

Many high schools in the north suburban region have moved to a double-block or double-period of Algebra 1 for high risk students. New Trier High School, Grayslake North High School, Waukegan High School, and all of the High School District 211 schools have added additional Algebra time. Adlai Stevenson High School and Evanston Township High School not only went to the double-block, but also adopted the Agile Mind program. Kathy French and Robin Levine-Wissing observed these classes at Stevenson in September.

Both Evanston and Stevenson then eliminated the Pre-Algebra course for incoming freshmen, and students at those schools now cover the pre-algebra concepts and all of Algebra 1 through the Agile Mind program in the double-block.

National Council of Teachers of Mathematics (NCTM) President Cathy Seeley answers questions from math teacher members on the NCTM website. Recently the website posted a discussion about teaching algebra for special education and other high risk and struggling students. The following excerpts from Cathy's comments affirm our desire to use the Agile Mind program since that program utilizes the instructional styles described below.

This (teaching algebra to special education and other high risk students) is truly a challenge. From conversations with effective teachers, here are a few thoughts. First, these students can make good use of multiple representations, especially concrete and pictorial representations. Thus, the use of graphing calculators can be very helpful. Many special education students can learn symbolic skills, but using a visual approach can make this more likely. It can also help to use hands-on models, such as blocks or tiles, to model algebraic ideas. Many equation-solving skills can be modeled using cups and chips or tiles. It's important that you, your aide and the special education teacher have appropriate professional development in order to use these tools to help students learn. As with all tools and activities, making the connection to the mathematical ideas and skills is critical. One teacher I know prepares special pages of notes and tips for students such as these. Group work can be very effective, so that students work together and talk about their approaches. Obviously, your role as a facilitator, asking appropriate questions at the appropriate times, is very important.

It may also be that for the long term, your school might look into scheduling a double block of time for algebra.....I have talked with teachers who tell me that they are sometimes surprised at how much their lowest students can achieve



when given certain kinds of activities, structure, guidance and encouragement. Expectations again play the most important role of all.

Cathy Seeley, NCTM President, Article “Hidden Potential”, September 2010  
NCTM website

Fraser High School in Michigan went to a double-block Algebra class for at-risk students in 2007. The passing rate for students in the double-block Algebra class was 81%, compared to 73% in the county and the rest of the school. Teachers felt students better understood the curriculum and developed a “can-do” attitude about mathematics. They also reported feelings of success and accomplishment for all students in the new course format. Fraser High School expanded the program for the next school year.

Research certainly supports the need for utilizing research-based mathematics instructional methodology in the classroom. When teaching at-risk students, we also need to address the social-emotional learning needs of our students. The Academic Youth Development (AYD) component of the Agile Mind Intensified Algebra program addresses the potential social-emotional barrier to student achievement in math. According to Agile Mind, “...*the AYD program deepens students’ commitment to learning and productive persistence in the face of academic struggle.*” Socially, the Agile Mind program supports positive peer interaction through ongoing teaming and peer-to-peer feedback related to mathematics problems. Further, the AYD component explicitly teaches students about the malleability of their own brains. Students learn that they can become smarter. This leads to more positive feelings about not only math, but also their ability to manage the frustration that accompanies challenging academic tasks in any area. With increased frustration tolerance and knowledge of what it feels like to struggle and then reach a goal, students who complete the Agile Mind program are better equipped to self-advocate for their learning needs and to strive for levels that they previously would not have reached for.

4. **Rationale** for addressing the need through a curricular change:

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.
  - To increase the number of instructional minutes for our at-risk mathematics learners, resulting in students completing content relevant to two traditional math courses and putting students in a position to access more rigorous content and higher-level mathematics while improving their academic identities. Since students will be meeting daily for 90 minutes of instruction, a total of 2 credits would be given for the year long course – one credit in mathematics and one general elective credit (not counting to the required math credits). This distribution of credits is similar to our schools offering a double period of mathematics on a daily basis.

Desired Outcomes:

- Expand student opportunities for post-high school levels of mathematics.
- Build stronger mathematics skills to support student success on standardized college entrance exams (ACT, SAT, etc.), hopefully positioning students for more opportunities post-high school.
- Students will develop an internal locus of control for their own learning success in not only this class but also in other courses as a result of their participation in the Academic Youth Development (AYD) component of the Agile Mind Program. (see program description in 5b).

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.

The committee discussed increasing the number of instructional minutes for the targeted student group and continuing to use current curriculum from Pre-Algebra and Algebra 1. Based on data describing these students' learning needs and our own program observations in a neighboring district, it was determined that increasing instructional minutes without re-evaluating the curriculum would not likely lead to desired outcomes. Research supports that increasing instructional minutes and using instructional time to engage students in a way that matches with their learning needs, including the social/emotional (AYD) component, is most likely to lead to the desired outcomes. The committee rejected the option of using the same curriculum for this new course in an effort to move away from traditional methods of mathematics instructional delivery. In essence, the team believes that more of the same will not change outcomes for these students, and research supports this notion.

- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

- Increased student readiness to tackle problem-solving concepts in science courses (primarily Biology GT) because of improved math skills.
- Beyond freshman year, students that completed Intensified Algebra will be more prepared for other science courses that might not have been accessible to them in previous years due to the mathematics component in these science courses.

5. **Description** of proposed change:

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.

The committee recommends that no more than 16-18 students be enrolled in the proposed course. The target group would be freshmen students who would normally be enrolled in Pre-Algebra due to their need for intensive support (small teacher-student ratio) and remediation. Additionally, there could be a few students who were recommended for Algebra 163 GTA (team) whose skills and learning needs would best be met in the new course.

- b) Provide a tentative outline of the proposed course or program.

See appendix A

6. **Implications** of the proposed change:

a) What are the implications of this proposed change for staffing, facilities, and budget?

Staffing:

- For the first year of the program, an additional .4 FTE from within the building allocation will be needed because the course would be taught as a daily ninety-minute block. Special Education FTE for the program will be absorbed within the department's current FTE allotment. Keep in mind that students would be covering two years of mathematics.
- For the first year, there will be no impact on the number of Algebra 163 GTA sections offered. However, in subsequent years, there might be one less section of Algebra GTA, depending on enrollments each year.
- Provided that the program is as successful as we anticipate, it is likely that we will transition all Pre-Algebra students into a course like this, thereby increasing the number of sections of the daily 90-minute course. If that occurs, some of the additional FTE would be transferred to this course from the Algebra 163 GTA course.

Facilities:

- We will need to work with scheduling/room assignments since this class meets daily for 90 minutes.

Budget:

- Current estimate is \$2,900 for summer professional development for teachers (funding for this portion of the program will come from building resources, Title II grant funds and/or special education grant funds), online curriculum component, and consumable books for students (students will be responsible for textbook cost).
- An additional \$700 is needed for professional development for teachers during the school year. Funding for this portion of the program will come from building resources, Title II grant funds and/or special education grant funds.

b) What are the implications of this proposed change for other courses in the department and for other departments in the school?

Special Education:

- This course is unlikely to impact the enrollment in the existing self-contained mathematics classes other than Pre-Algebra.

Mathematics:

- See above in 6(a).

Other Departments:

- This proposed course will not limit a student's ability to take electives over the course of their high school career. There is often concern about students' ability to take elective courses. Typically, students enrolled in Pre-Algebra as freshmen would be unable to take an elective as sophomores when they are in Algebra 163 GTA. This proposed course, while limiting students' ability to take an elective in their freshman year, would allow students to take an elective in their sophomore year.
- This proposed course should be scheduled at the same time as one of the Algebra 163 GTA sections so it does not impact the science team courses.

c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?

- As part of the cost of the program, Agile Mind provides professional development and on-going training for teachers that will be delivering the program.
- Summer curriculum funds would be needed before the first year for the two teachers to begin working together to plan the program.

7. **Method of evaluating** the success of the proposal after it is implemented:

a) If the proposal is approved and implemented, how shall it be evaluated?

- Successful completion through Algebra 1 which is determined by student mastery of Algebra 1 concepts in this course and recommendation into a Geometry course for the student's sophomore year.
- Semester finals examinations would include the same content as the existing Algebra 163 GTA and/or Algebra 163 G courses to allow teachers to compare student progress in this new course to that of students enrolled in existing courses.
- These students will be monitored during their sophomore and junior years while in Geometry and Advanced Algebra in regard to their academic progress. Mastery of the content in these courses will demonstrate the effectiveness of the program.

b) What specific outcomes shall indicate success of the implemented proposal?

- Students will be enrolled in and successfully complete Advanced Algebra in their junior year, which is on target with same-aged peers.

- Students will have developed an improved self-confidence about their math skills.
- Students will have achieved a higher-level of readiness for college entrance examinations.
- Student transcripts will reflect mastery of courses that are required for college entrance at many institutions.

Each daily lesson is designed for a 90-minute block. A typical lesson has the following components.

- **Daily preview.** Outline of day's activities that explicitly describes what students will be doing and the purpose of each activity. The preview helps students organize their thinking for the lesson and see the connections among lesson components.
- **Opener.** A 5-10 minute daily warm-up routine for transitioning into class work. The goal is to help focus students on the upcoming lesson and access relevant prior knowledge, and to provide teachers with formative assessment data. The warm-ups typically involve mathematics problems involving concepts or skills needed for the lesson but may also involve questions for private reflection and/or partner discussion.
- **Core learning activity.** 25-35 minutes of instruction to promote learning of essential algebra content. Activities feature high-cognitive-demand tasks and are typically situated in real-life context. Online animations of mathematically-important aspects of the tasks are utilized. Tasks are augmented by use of the student activity book to maximize time on task (e.g., so that students do not have to copy problems, tables, etc.) and regular use of routines that provide ways for students to organize and access the content, e.g., routines to support frequent formative assessments (such as use of whiteboards).
- **Process homework.** 10-minute partner routine to review the previous lesson's homework. It promotes communication among students about mathematics and their mathematical thinking, and also teaches students to take ownership of their own learning. Students process their mid-unit and end-of unit assessments with their partners using an expanded version of this routine.
- **Consolidation activity.** 20-25 minutes of instruction designed to review/repair prior knowledge required for upcoming lessons (i.e., preview the algebra content and correct misconceptions), provide additional opportunities for practice to deepen conceptual understanding and skill proficiency, and/or review online and pencil-and-paper assessments. These are typically designed as partner activities.
- **Lesson wrap-up and introduction of homework.** 5-minute routine used to highlight important ideas and activities in the lesson which is accomplished through previewing the lesson's homework assignment.



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- **Staying sharp.** A daily set of six short problems that provides distributed practice with algebra and prealgebra skills. Staying Sharps are also used to preview upcoming content; i.e., they help students review relevant prerequisite knowledge and also provide formative assessment data to teachers about their students' knowledge of prerequisite concepts and skills. Staying Sharps are part of the daily homework assignment.
- **Homework.** Roughly 30 minutes of additional work outside of class time to help develop students' confidence and abilities to work independently in mathematics and to provide additional practice with important concepts and skills.

### Scope and sequence

The following scope and sequence reflects Version 1 of *Intensified Algebra I*. Subject to change for the 2010-2011 school year.

## **Unit 1: Getting started**

### **1: Exploring problem-solving strategies**

Students begin to experience collaboration as a strategy to solve problems. They share problem-solving strategies as they explore problems that have single and multiple solutions.

### **2: Getting smarter through problem solving**

This topic introduces students to the ideas of malleable intelligence and brain growth through learning. Students continue to develop problem-solving strategies as they extend their understanding of patterns by exploring polygon trains.

### **3: Problem solving, effort, and your brain**

Students learn about the concept of working harder to get smarter, and they apply this idea to learning mathematics. They also learn that effective communication is an interaction between the giver and getter of information. They then apply this understanding as they solve problems in this topic. They continue to explore multiple solution strategies and learn how being able to approach problems in multiple ways can help maintain motivation in problem solving.

## **Unit 2: Developing mathematical models**

### **4: Representing relationships in multiple ways**

This topic develops a key theme of the course: Relationships between variables can be represented using words, tables, graphs, or symbols. Students are formally introduced to different ways to represent patterns and relationships and begin to connect various representations of proportional and non-proportional situations to one another (verbal, numeric, graphical, algebraic). They also extend their understanding of multiple representations in a way that will pay big dividends in Algebra I: They begin to learn to generate other, related representations when given a single representation of a pattern or relationship.

### **5: Thinking about algebra**

Students further develop their problem-solving capabilities and their algebraic thinking by working on a non-routine problem, Consecutive Sums. Students also explicitly explore the use of metacognitive strategies to improve their problem solving and learning.

### **6: Variables and functions**

Students are informally introduced to the concept of function as a dependency relationship between two variables, in which one depends on the other in a systematic way. Students extend their growing



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understanding of multiple representations and use them to represent functions involving proportional and nonproportional linear relationships algebraically, numerically, graphically and verbally.

### **Unit 3: Recognizing linear and nonlinear patterns**

#### **7: Linear and non-linear patterns**

This topic explores the ideas that linear data show a pattern of constant addition, and, when graphed, the points lie on a line. Students learn to differentiate between the domain and range for a problem and those for a function rule modeling that problem. Then, other patterns that indicate nonlinear relationships between two quantities—specifically, quadratic and exponential relationships—are introduced and represented using tables, graphs, written and verbal descriptions, and algebraic rules.

#### **8: Algebraic thinking and how learning feels**

Students further develop their problem-solving capabilities and their algebraic thinking by working on a non-routine problem. Students analyze the feelings they experience as they work on the problem, and learn that confusion is a natural state of learning and that learning often involves backsliding.

#### **9: Linear patterns and proportionality**

Students continue to develop problem-solving strategies as they extend their understanding of proportionality by exploring patterns exhibited by proportional relationships. They review the uses of ratios and proportional reasoning in solving real-world problems, use scale factors to enlarge and shrink figures, and express proportional relationships in multiple ways. Real-world applications engage students to explore and make reasonable conjectures while testing their predictions.

### **Unit 4: Rate of change**

#### **10: Rate of change in motion problems**

Understanding the rate at which one quantity changes with respect to another is key to understanding how the two quantities are related. In this topic, students explore the concept of rate by analyzing motion over time. Students investigate the rate at which distance changes numerically and graphically.

#### **11: Staying motivated while solving problems**

Students also learn that setting goals can support effective effort and learning, even in the face of challenging problems such as the one they tackle in this topic.

#### **12: Exploring rate of change in other situations**

This topic deepens student understanding of the central ideas of rate of change. Students discover that they can model data sets that have a constant rate of change with a linear function. Students also learn that not all data are linear, and thus require other models

### **Unit 5: Linear functions**

#### **13: Understanding slope and intercepts**

This topic relates the constant rate of change of a linear function, the slope of the line that is the linear function's graph, and the value of  $m$  in the linear function rule  $y = mx + b$ . Students explore this connection using tables, graphs, and function rules. It also develops students' understanding of the  $x$ - and  $y$ -intercepts of the graph of a linear model and the relationship between the intercepts and the situation being modeled. Students learn to find the values of the intercepts directly from linear function rules expressed in slope intercept form ( $y = mx + b$ ) or standard form ( $Ax + By = C$ ).

#### **14: Building effective communication skills**

This topic lays the groundwork for student understanding of the importance of effective communication. Students come to understand effective communication as an interaction between the giver and getter of information. They then apply this understanding as they explore visual representations of data, including scatter plots, and analyze the information contained in a graph.

#### **15: Creating linear models for data**





This topic revisits analyzing rate of change to determine whether using a linear model to represent data is appropriate. It also develops the point-slope form for the equation of a line, explicitly connects the point-slope and slope intercept forms, and introduces students to the idea of transformations of functions by transforming the basic function  $y=x$  to create linear models for data.

## **Unit 6: Linear equations and inequalities**

### **16: Solving linear equations**

In this topic, students learn how equations are related to functions. The topic explores how different representations of a function lead to techniques to solve linear equations, including tables, graphs, concrete models, algebraic operations, and "undoing" (reasoning backwards).

### **17: Problem solving in a community of learners**

Students develop effective communication skills as they come to understand their importance in their own community of learners.

### **18: Solving linear inequalities**

This topic introduces students to solution techniques for linear inequalities. Students learn to solve with graphs, tables, and algebraic operations.

## **Unit 7: Systems of linear equations**

### **19: Formulating and solving systems**

Systems of linear equations, in which two conditions apply to a situation, and thus must be modeled with two equations, are introduced in this topic. Students learn to set up a system, solve it using graphs and tables, and check the solution for reasonableness.

### **20: Mindset**

Students continue to develop their problem-solving capabilities and algebraic thinking by working on a nonroutine problem, The Icicles Problem. They also explore the idea of "mindset" and how it can affect their success as a student.

### **21: Other methods for solving systems**

Continuing with the exploration of systems of two linear equations, this topic introduces two algebraic methods for solving systems: the substitution method and the linear combination method. Students begin to see when to use each method, and how to interpret the results of each method

## **Unit 8: Non-Linear functions: Exponential and quadratic functions**

### **22: Exponential functions**

This topic builds on students' knowledge of exponential functions by exploring different situations that can be modeled with exponential functions. Students use tables and graphs to contrast the repeated multiplication of exponential patterns with the repeated addition of linear patterns. It also provides a review of laws of exponents and the meanings of negative exponents.

### **23: Attributions and their effect on problem solving**

Students practice identifying attributional styles and reattributing successes and difficulties to controllable factors. They also hone their skills as givers and getters of information as they present their solutions to nonroutine problems.

### **24: Graphs of quadratic functions**

This topic continues the study of transformations on basic functions that began with linear functions. Students build on their previous exposure to quadratic functions as they review the features of the parabola,  $y = x^2$ , and explore how changes in the values of the constants  $a$  and  $c$  in  $y = ax^2 + c$  affect the graph of the function  $y = x^2$ .



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## **Unit 9: Quadratic equations**

### **25: Operations on polynomials**

This topic explores polynomial operations through a construction scenario. Students learn how to multiply, add, and subtract polynomials using concrete models and analytic techniques. They also learn how to factor trinomials using concrete models and analytic techniques.

### **26: Solving quadratic equations**

This topic focuses on solving quadratic equations that arise from quadratic functions. Students learn to solve these equations by graphing and by factoring and see how the solution methods are connected as they connect the roots of an equation, the  $x$ -intercepts of a graph, and the zeros of a function.

### **27: The quadratic formula**

This topic extends the work of the previous topic by introducing students to the quadratic formula as a method for solving quadratic equations. As using this formula sometimes requires students to simplify expressions containing square roots, the connection between the algebra and the geometry of square roots is explored. Students also learn how the value of the discriminant indicates the nature of the solutions.

## **APPLICATION FOR CURRICULAR CHANGE**

School: Glenbrook North    Department: Social Studies

Date: 10-25-10

Name of proposed curricular change:

**ADD:** Sports in Society, Glenbrook Summer School course

1.    **Brief description** of the curricular change

Sports in Society will analyze the connection between athletics and American society, past and present. The course will also explore, from the sociological perspective, contemporary issues and controversies in sports today. Sports in Society would be offered as an enrichment course. Open to all Glenbrook students, including incoming freshmen, the class would be a regular level summer school course taught two hours daily for three weeks; students would earn .25 credit for the social studies elective.

2.    **Curriculum Planning Committee Membership**

a)    List the members of the committee.

Justin Georgacakis and Robin Sheperd worked in developing and creating this course. They consulted with Scott Williams and Aimee Wool, GBN Sociology teachers.

b)    Give the rationale for the membership of this committee.

Justin Georgacakis is a GBN Physical Education teacher with certification in PE as well as Social Studies. He is very excited about the potential to add this course as a summer school Social Studies offering. Having taught and coached at GBN for several years, he considers this an excellent enrichment opportunity for students already deeply interested in sports, and those who are looking to broaden their interests to include this topic. Mr. Georgacakis also taught two sections of Sociology at GBN during the spring of 2009.

Robin Sheperd is the GBN Social Studies Instructional Supervisor, and taught sociology in the department for nine years. She has provided administrative support throughout the course proposal process.

Scott Williams and Aimee Wool have taught Sociology at GBN for 25 years collectively.

c)    If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.

As needed, guest speakers will be used to support specific curricular goals of the course and may include administrative or organizational leaders within the collegiate and professional arena of athletics and sports organizations.

3.    **Need** for the curricular change:

a)    Present and analyze data on student learning that point to a need for change.  
N/A

or

- b) Present other data (demographic, anecdotal, research, and others) that point to a need for change.

This course would serve as a means for all students, athletes and non-athletes alike, to study the influence sports have made on the world in which we live. This subject transcends all groups and is a topic to which all students can relate. Americans as a whole share a passion for sports, regardless of their ethnic or socioeconomic backgrounds. Athletics is a major component of American leisure time, and can even have an economic impact on a city or region. Our own student population reflects this interest in sports as well. Students involved in athletics, and students enrolled in social studies classes, have expressed interest in the sociological issues of sport. Students are exposed to these issues from their childhood on, either as participants in sports, fans, and simply as citizens impacted by the media and the culture around them. This course would provide an ideal opportunity to explore these issues within the context of an enrichment class offered during the summer.

or

- c) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change.  
N/A

4. **Rationale** for addressing the need through a curricular change:

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.

The course will meet the purposes discussed in 3b above through a variety of instructional strategies. The class will be primarily student-centered and discussion-based, and students will read articles and a book to enhance their knowledge. The class will include opportunities for students to interview people in athletics, from the Glenbrooks and beyond, as well as a panel discussion. The class will include a field trip to a Chicago sports facility for a tour.

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.  
N/A

- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

Sports and Society will complement existing courses within Social Studies, including Sociology, Psychology, US History and World History. The course will also complement the Physical Education curriculum, and could even complement our athletic programs, as athletes enrolled in the course could bring new perspective to their teams.

5. **Description** of proposed change:

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.

This course will be designed for all students, including incoming freshmen. Any student interested in exploring athletics and sociology will be our target group. We hope to enroll one section of the course in the inaugural summer. If the course is approved, we will make students aware of it through their social studies courses, PE courses, and athletic teams. We will also make incoming 9<sup>th</sup> graders aware of the course through their sender schools.

- b) Provide a tentative outline of the proposed course or program.

Resources will include readings, both articles and book segments (e.g. *Sports in Society: Issues and Controversies*, Jay Coakley; *100 Greatest Moments in Olympic History*, Bud Greenspan; *Friday Night Lights*, H.G. Bissinger; *Social Issues in Sport*, Ron Wood). The course will also incorporate video segments.

Unit I: Overview and History

- Essential Questions
  - Why study sports?
  - What American values do sports reflect? Are these values ever in conflict?
  - How did sports become such an influential institution in American culture?
  - How are children in America introduced to sports and their roles in sports?
  - How do sports serve as an agent of socialization in our culture?
  - How do the sociological perspectives apply to sports? (i.e. functionalist theory, conflict theory, and symbolic interactionist theory)

Unit II: The Impact of Sport on Society and Societal Change

- Essential Questions
  - How have sports impacted society and how do they affect change?
    - Racism and racial integration
    - Gender discrimination and inclusion (Title IX)
  - How has societal change impacted sports?
  - How has the drive/pressure for athletic success impacted athletes' decision making?
  - How do sporting events demonstrate elements of collective behavior?

Unit III: The role of Athletes in American Society

- Essential Questions
  - Are athletes held to a different standard regarding their behavior? If so, why?
  - How has the media driven the growth of athletics?
  - How do athletics and athletes impact a regional economy?
  - How are athletes at the various levels compensated, and what does this say about our society?
  - Do professional athletes attain all the attributes of the upper social class as defined by sociologists?
  - How does the violence of sports impact other areas of society? Do people view violence in athletics differently?

#### Unit IV: Collegiate and High School Athletics

- Essential Questions
  - How do sports impact schools?
  - How do sports help fulfill the functions of education as defined by sociologists?
  - How does an athlete determine which college to attend? How does the college recruiting process work? What is the role of scholarships?
  - Should college athletes be paid?

#### Unit V: The Olympics

- Essential Questions
  - How does Olympic performance impact a country's status in the world view?
  - How have nations prepared their athletes for the Olympics, and how does this preparation reflect the nation's culture?
  - How have political/social tensions impacted past Olympics?

#### 6. **Implications** of the proposed change:

- a) What are the implications of this proposed change for staffing, facilities, and budget?  
The course would require one teacher for the section we hope to enroll, two hours a day for three weeks. As summer school is self-sustaining, the enrollment fees should offset this cost. We hope to cover costs for materials with existing departmental monies.
- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?  
Because the course is offered as enrichment, under a shorter schedule, and for .25 credit, we do not believe it will impact enrollment in other social studies courses, or other elective areas. We are cognizant of the existing "History of Baseball" class, and have worked with last summer's instructor to ensure the course content does not overlap.
- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?  
Summer curriculum work would be required for thorough curriculum development.

#### 7. **Method of evaluating** the success of the proposal after it is implemented:

- a) If the proposal is approved and implemented, how shall it be evaluated?  
We will evaluate the course through administrative evaluation, student feedback, and teacher reflection.
- b) What specific outcomes shall indicate success of the implemented proposal?  
Positive reviews in the areas listed above shall indicate success of the implemented proposal; and of course we will look for ongoing enrollment in the course.

## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook North    **Department:** World Languages

**Date:** 11/06/10

**Name of proposed curricular change:** Modern Hebrew 273, 363, 373

1.    **Brief description of the curricular change:** We have a sufficient number of students in Hebrew 263 who would like to continue their studies next year in Hebrew 363 or 373. In addition, we expect students to come in from Solomon Schechter School ready to take Hebrew 363 or 373. We also have students currently in Hebrew 163 who would qualify to continue their studies in an honor's level course and would therefore be prepared to take Hebrew 273.

2.    **Curriculum Planning Committee Membership**

- a)    **List the members of the committee.**

Josh Morrel – Hebrew teacher at Glenbrook North  
Ann Koller - Instructional Supervisor of World Languages at Glenbrook North

- b)    **Give the rationale for the membership of this committee.**

Josh Morrel is the current Hebrew teacher, and would be developing Hebrew 273, 363, and 373. Ann Koller is responsible for overseeing the curriculum and instruction of the new Hebrew program.

- c)    **If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.**    N/A

3.    **Need for the curricular change:**

- a)    **Present and analyze data on student learning that point to a need for change.**

The students currently enrolled in Hebrew 163 and 263 are progressing at a satisfactory rate. Some of the students in Hebrew 163 will be prepared for Hebrew 273 and others in Hebrew 263 will be ready to take Hebrew 363 or 373 at the end of this school year.

- b)    **Present other data (demographic, anecdotal, research, and others) that point to a need for change.**

The department's goal is to maintain the continuation of the curricular sequence in Modern Hebrew provided that enrollment is sufficient to support coursework in the third and fourth years of study.

- c) **Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change.**

This proposal is not so much about a need for change but rather a need for the continuation of studies in a language already begun by students at Glenbrook North. The community would like to see a full program offered to our students.

4. **Rationale for addressing the need through a curricular change:**

- a) **State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.**

Hebrew 273 (Honor's) will allow students who have excelled in Hebrew 163 to take a more challenging second year course and receive honor's credit. Hebrew 363 (Regular) will allow students to continue their learning from Hebrew 263. Those students who have performed at a higher level in Hebrew 263 will be able to take Hebrew 373 (Honor's). Students at all levels will continue developing the four language skills that are essential to communication in all of our courses: listening, speaking, reading, and writing. Students will also continue to learn more about Israeli history and culture and read more advanced works of literature.

- b) **If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.** N/A
- c) **Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.**

If implemented, this proposal would give students of Hebrew 163 and 263 the same opportunities afforded to students of all of the other languages who wish to continue their studies.

5. **Description of proposed change:**

- a) **Describe the students for which this curriculum change has been designed and the approximate size of the target group.**

There are 39 students currently enrolled in Hebrew 163 and 20 students in Hebrew 263. In Hebrew 163, there are six seniors and in Hebrew 263 there are four seniors. There are 49 potential candidates plus additional students from Solomon Schechter for the proposed classes.

- b) **Provide a tentative outline of the proposed course or program.**

A course outline for Hebrew 273, 363, and 373 will be developed over the summer as part of a summer curriculum project. The project will include a course syllabus and some lesson plans. We will use the textbook Hebrew from Scratch Book 2, which is the second book in the series currently used, and which is appropriate for



levels three and four.

**6. Implications of the proposed change:**

**a) What are the implications of this proposed change for staffing, facilities, and budget?**

We do not anticipate any changes in staffing, facilities, or budget as a direct result of the introduction of Hebrew 273, 363, and 373 next year since students in Hebrew are already enrolled and will simply be continuing with their studies in this language. However, if next school year we again have one or two classes of Hebrew 163, then this will have an impact on other languages, which will face a decreased enrollment. As a result, it is possible that we might see a reduction in staff for other languages, as we did for this year.

**b) What are the implications of this proposed change for other courses in the department and for other departments in the school?**

As stated in 6.a) above, the proposed change will have an impact on other courses in the department only if we again run one or two sections of Hebrew 163. There may be, however, a small number of students who would not be able to fit the existing or new Hebrew courses in their schedules because there might only be one section of each level available.

**c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?**

The Hebrew teacher would need a summer curriculum project to develop the Hebrew 273, 363, and 373 courses. Summer curriculum projects to develop new courses are generally contracted for 40 hours of work.

**7. Method of evaluating the success of the proposal after it is implemented:**

**a) If the proposal is approved and implemented, how shall it be evaluated?**

Qualitative (student surveys, observations, and teacher feedback) and quantitative (enrollment in the course, interest and enrollment in a fourth level Hebrew class, grade distributions) data will be evaluated to determine if the course is a success.

**b) What specific outcomes shall indicate success of the implemented proposal?**

Student enrollment numbers, appropriate grade distributions, student surveys, and interest in Hebrew 463/473 will be a measure of success.

**To:** Michael Riggle; Rosanne Williamson  
**From:** Cameron Muir  
**Cc:** Brian Wegley  
**Re:** New Course Proposals  
**Date:** December 1, 2010

The Glenbrook South Administration, with the approval of the Instructional Supervisors Council, recommends the following six new course proposals for approval. I am also attaching the new course proposal forms for each of the new courses listed below.

| Department   | Course Title                                  | Status                                       | Rationale   | Impact  | Evaluation  |
|--------------|---|--|---|---|---|
| Applied Tech | <i>Engineering Design and Fabrication</i>     | New Course – One Semester                    | The Engineering Design and Fabrication class would combine the Engineering/CAD and Product Design classes providing a more accurate representation of the changes in recent engineering education: greater problem solving, project based curriculum, construction of working prototypes. | No impact on staffing or other departments.   | Project-based products, presentations and research will be at an enhanced level. Connections with university programs and engineering competitions will result. |
| English      | <i>American Culture and the Graphic Novel</i> | Summer School – One Semester                 | This one semester summer school class would encompass two main goals: (1) explore the cultural impact of graphic storytelling on contemporary society and (2) enhance students' graphic literacy skills and comprehension.  | No impact on regular school staffing. This is an elective class not satisfying any of the state- required English graduation course requirements.   | Students will demonstrate mastery of visual literacy through an analytic essay applied in the context of graphic novels.  |
| English      | <i>Reading Enrichment</i>                     | New Course – One quarter up to two semesters | The course would enable students to receive RtI Tier II reading interventions and earn credits simultaneously. Students will take the proposed course in addition to their core courses.  | This would target a small number of students each semester who would forgo either study hall or an elective. No anticipated impact on staffing as a result of the delivery of flexible services.                                | Pre and post-assessments of student progress and monthly progress monitoring of students will determine student growth as a result of the course.               |
| English      | <i>Media Collage</i>                          | New Course – One Semester                    | A senior English elective would give students the opportunity to attend to core English skills, like reading and writing, while also helping them to build a deeper understanding of digital tools.   | No impact on staffing or other departments. Student enrollment is anticipated to come from other English electives. This is an elective class not satisfying any of the state- required English graduation course requirements. | Increased student awareness of how media functions exhibited through the final performance assessment.  |
| Math         | <i>Precalculus 563</i>                        | New Course – Year-long                       | Currently the Studies sequence terminates after Algebra III / Trig Studies. In addition, the present sequence does not afford an option for students to move down from the regular after completing Advanced Algebra 363.   | Staffing will be a zero-sum with the decrease in sectioning from one or more of the regular pre-calculus courses.   | Assessment of student grades, college placement, increased number of students persisting through four years of mathematics .                                    |

|                 |  |  |  |  |   |
|-----------------|--|--|--|--|---|
| Math            | <i>Mathematics Enrichment</i>                  | New Course - One quarter up to two semesters | The course would enable students to receive structured RtI Tier II interventions and earn credits simultaneously. Earned credits range from 0.25 to 1.0 credits depending upon the intensity of student remediation needs. Students will take the proposed course in addition to their core mathematics courses. This course will not count towards mathematics graduation requirements. | This would target a small number of students each semester who would forgo either study hall or an elective. No anticipated impact on staffing as a result of the delivery of flexible services. | Pre and post-assessments of student progress and monthly progress monitoring of students will determine student growth as a result of the course. Students will show increased success in core mathematics courses. |
| World Languages | <i>Mandarin Chinese 463/473</i>                | New Course – Year-long                       | We would like to offer students a fourth year of Mandarin Chinese language and culture upon completion of Mandarin Chinese 363/373. This would prepare students for the Advanced Placement Mandarin Chinese Language and Culture course the following year, if approved.   | Any staffing will be accommodated within the existing staffing allocation.   | Student surveys, enrollment numbers, and grade distribution data will be reviewed to determine if the course is a success.  |
| World Languages | <i>Advanced Placement Mandarin Chinese 583</i> | New Course – Year-long                       | We would like to offer an Advanced Placement (AP) Mandarin Chinese Language and Culture course to allow students to continue their study of Chinese language and culture at the college level while attending GBS.   | Any staffing will be accommodated within the existing staffing allocation.   | Student surveys, enrollment numbers, AP scores and grade distribution data will be reviewed to determine if the course is a success.  |

In addition, Glenbrook South's social studies department would like to change the name of its *Conflict in the Modern World* class to *International Relations*, which is consistent with Glenbrook North.

## APPLICATION FOR CURRICULAR CHANGE

**School:** Glenbrook South    **Department:** Applied Technology

**Date: 10/28/2010**

**Name of proposed curricular change:**

## Engineering Design and Fabrication

1. **Brief description of the curricular change:**

This proposal is meant to provide a creative environment where Engineering can go from conception to reality. Presently the Engineering CAD and Product Design classes are using Fisher Techniques models to produce concepts to support their design theories. The Engineering Design and Fabrication class would replace the Engineering/CAD and Product Design classes providing greater problem solving abilities and expanding the potential areas of concentration. Real world experiences can be developed in cooperation with many challenging assignments. Project based curriculum will culminate in actual construction of working prototypes for analysis.

## 2. Curriculum Planning Committee Membership

- a) List the members of the committee.  
Lee Fiorio, Steve Kornick, Gary Freund
- b) Give the rationale for the membership of this committee.  
Associate Principal Freund's Project Lead the Way (PLTW) experiences are vital to our committee. Mr. Kornick and Mr. Fiorio are defining changes needed in providing experiences needed for students to fully realize the field of Engineering.
- c) If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.

### 3. **Need for the curricular change:**

- a) Present and analyze data on student learning that point to a need for change.
- or
- c) Present other data (demographic, anecdotal, research, and others) that point to a need for change.

The Engineering Design and Fabrication class will encompass technologies that are representative of today's work environment. Students will be exposed to areas such as material sciences through the fabrication lab. From aluminum to foam, steel to composites, the need to understand and demonstrate why a chosen material will work provides applications that define engineering. Challenging problems will be addressed with a focus on engineering and constructing real models that reflect research, thought and innovation.

- d) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change.

Presently there is a national effort to expand engineering courses in the high schools. Northwestern University is seeking opportunities in engineering activities with local high schools. They have working relationships with Evanston and New Trier high schools and are looking for partnerships in Engineering, with project based curriculums. (See attached meeting notes).

Project Lead the Way is a national engineering curriculum that has been adopted or is in the process of being adopted by all the schools but Glenbrook in the North Suburban Educational Region for Vocational Education (NSERVE) consortium, and many others throughout the state. This program requires a district to adopt a four-year plan of adding required courses to complete a sequence. College credit is available through many universities such as Purdue, Bradley, and Rochester Poly Tech. All instructors must attend a two week summer training program for each course offered. National testing is done in an AP format. PLTW does require a list of tools, equipment and software for schools to be considered a PLTW qualifying school.

4. **Rationale for addressing the need through a curricular change:**

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.

GBS students will be able to address new technologies in the energy sector, expanding their knowledge of wind, solar, and geothermal systems. Projects such as water purification, bridges, and erosion can be constructed using real materials instead of simulations. Skill development in tools and fabrication will be greatly enhanced.

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.

Project Lead the Way has been considered as a structure for this course; however, this is not feasible at the moment due to retirement issues. Teachers Lee Fiorio and Steve Kornick are presently in the retirement pipe line and it would not make sense to invest resources in preparing teachers in the Project Lead the Way curriculum who are near retirement. We do however see this class and its resources evolving into PLTW's "Principal of Engineering" in the future.

- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

The Sciences, specifically Physics and Horticulture can be part of many projects. Math skills will be emphasized throughout all curricula. As an Engineering class, students will be required to keep an engineering journal in which all notes and progress can be tracked.

5. **Description of proposed change:**

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.

Students registering for the former Engineering/CAD 363-463 and Product Design

261-461 course would benefit from this curriculum change. This represents approximately 30-45 students in total. This course will be offered at both the honors and regular levels.

- b) Provide a tentative outline of the proposed course or program.

## ENGINEERING DESIGN and FABRICATION

### COURSE DESCRIPTION

Students in this class would apply technology science and mathematics to solve open ended engineering and design problems. The product development cycle and design process would be used by teams of students to complete larger scale real-world projects. Students would research, develop, fabricate, test and analyze engineering designs. Findings would be presented to peers and teachers in the form of written technical reports and oral presentations. This would be a capstone experience for students interested in Technology, Design and Engineering.

### COURSE OUTLINE

#### UNIT 1: Materials and Structures

- Statics
- Material Properties
- Material Testing
- Design Problem- Materials and Structures

#### UNIT 2: Energy and Power

- Kinematics
- Mechanisms
- Energy Sources
- Energy Applications
- Design Problem- Energy and Power

#### Unit3: Control Systems

- Machine Control
- Fluid Power
- Design Problem- Control System

### 6. **Implications of the proposed change:**

- a) What are the implications of this proposed change for staffing, facilities, and budget?

Mr. Fiorio will be replacing his Engineering CAD and Product design classes with Engineering Design and Fabrication. Grant funds would be used to purchase equipment necessary to provide real world experiences.

- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?

It is strongly believed that this class would and should lead to many interdisciplinary activities. The research portion of any project would require students to go beyond the classroom and involve other department's expertise at GBS.

- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?

Summer curriculum work would be necessary to combine the Drafting/Engineering and Product Design curriculum. Researching and developing new projects that would reflect real world challenges would be an integral component of the summer curriculum project.

7. **Method of evaluating the success of the proposal after it is implemented:**

- a) If the proposal is approved and implemented, how shall it be evaluated?

A successful class will be evident by the quality of students it attracts and the enhanced level of projects that they are able to produce.

- b) What specific outcomes shall indicate success of the implemented proposal?

Student will develop presentations and conduct research through a project-based approach. Students will make connections with university engineering programs and competitions. (see notes attached)

## Meeting Notes.

### Northwestern and NSERVE Notes and Action Items October 26, 2010

#### Attendees:

Harold Kung, Steve Kornick, Martha Eldridge Stark, Kemi Jona, Susan Ipri Brown

#### Discussion Topics:

- Programs for Northwestern and NSERVE to coordinate
- Programs to involve NU students
- Programs to increase mutual faculty understanding
- Programs to support career/tech ed. programs such as Glenbrook South's electric vehicle project

#### Key Points:

- Schools are adopting engineering based educational programs in a variety of ways, and are still working through 'best practices'
- NU's name carries weight with the schools and students
- NU students and faculty can make an impact on the school programs

#### Action Items:

- Organize a trip for faculty and students to visit Glenbrook South HS (SIB,MES)
  - o Professor Kung speaking to classes
  - o Inspection of rooftop solar heating system
  - o Identify areas for student groups to help out
  - o How PLTW capstone course could involve NU students
- Discuss schools as clients for Engineering Design and Communications course projects (HK,SIB,SK)
- Identify funding for research experiences for teachers (RETs) for teachers this summer (HK,SIB)
- Continue conversations to involve NSERVE in the Transforming STEM Learning proposal with CAF (KJ,MES)
- Create model for Innovation grant-like programs between the university and the schools, including engineering lab day (All)
- Plan for presentation at December NSERVE joint meeting (KJ,SIB,MES)

#### References:

##### *For Martha and Steve*

Engineering in K-12 Education: Understanding the Status and Improving the Prospects:

[http://books.nap.edu/catalog.php?record\\_id=12635](http://books.nap.edu/catalog.php?record_id=12635)

America's Lab Report: Investigations in High School Science:

[http://books.nap.edu/catalog.php?record\\_id=11311](http://books.nap.edu/catalog.php?record_id=11311)

Exploring the Intersection of Science Education and 21st Century Skills: A Workshop Summary:

[http://books.nap.edu/catalog.php?record\\_id=12771](http://books.nap.edu/catalog.php?record_id=12771)

Changing the Conversation: Messages for Improving Public Understanding of Engineering:

[http://books.nap.edu/catalog.php?record\\_id=12187](http://books.nap.edu/catalog.php?record_id=12187)

Standards for K-12 Engineering Education? [http://www.nap.edu/catalog.php?record\\_id=12990](http://www.nap.edu/catalog.php?record_id=12990)

Boston Museum of Science, National Center for Technological Literacy K-12 Engineering



Programs: <http://www.mos.org/nctl/k12.php>

***For Steve:***

Our Engineering Design and Communications project client information site:  
<http://www.segal.northwestern.edu/projects/clients/faqs/>

***NSERVE Members:***

Evanston Township District 202

Maine Township District 207

    Maine East

    Maine South

    Maine West

New Trier Township District 203

Niles Township District 219

    Niles North

    Niles West

Northfield Township District 225

    Glenbrook North

    Glenbrook South

Oakton Community College

    Des Plaines Campus

    Skokie Campus

## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook South    **Department:** English

**Date:** Oct. 29, 2010

**Name of proposed curricular change:** American Culture and the Graphic Novel (one semester summer school English elective offering)

1. **Brief description of the curricular change:** This one semester summer school class would encompass two main goals: (1) explore the cultural impact of graphic storytelling on contemporary society and (2) enhance students' graphic literacy skills and comprehension.
2. **Curriculum Planning Committee Membership**
  - a) List the members of the committee: John Cowlin
  - b) Give the rationale for the membership of this committee: interest and knowledge
  - c) If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees. N/A
3. **Need for the curricular change:**
  - a) Present and analyze data on student learning that point to a need for change.

or
  - b) Present other data (demographic, anecdotal, research, and others) that point to a need for change.

or
  - c) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change.

The GBS technology department has been expressing to GBS staff the importance in helping students learn and become comfortable with new 21<sup>st</sup> century literacies. Graphic storytelling is one such literacy.

Consider the following: *Time* magazine published a list of the "100 best English-Language novels from 1923 to the present," and ten of the novels on the list are graphic novels; Art Spiegelman's *Maus: A Survivor's Tale – My Father Bleeds History* won the Pulitzer Prize for literature; Alan Moore's Hugo winning graphic novel *Watchmen* is routinely included on lists of the greatest novels of the 20<sup>th</sup> century. If nothing else, these facts demonstrate that graphic storytelling is indeed considered "literature" by mainstream media circles.

In his article entitled “Comics in the Classroom,” author Ross White states, “A recent explosion of academic interest in comic books and graphic novels has stirred the creation of comics curricula nationwide. Several colleges and universities are now offering courses in comics literature, and high school teachers are exploring graphic novels as a new way to stimulate young readers’ interest in literature.”

Arguments can and are being made that comics “can relate to the specific Multiple Intelligences” including: verbal/linguistic, visual/spatial, mathematical, kinetic/bodily, interpersonal, intrapersonal, naturalistic, and musical/rhythmic.

As Rocco Veksaci puts it in his article entitled, “How Comic Books Can Change the Way Our Students See Literature: One Teacher's Perspective”, published in *The English Journal*, “Unlike more “traditional” literature, comic books are able to quite literally “put a human face” on a given subject. That is, comic books blend words and pictures so that, in addition to reading text, readers “see” the characters through the illustrations. What is more, the interplay of the written and visual is a complicated process; a comic “does not happen” in the words, or the pictures, but somewhere in-between, in what is sometimes known as ‘the marriage of text and image.’” Because this “in-between” space is difficult to identify and varies from title to title, reading comic books requires an active, though largely subconscious, participation on the part of the reader. Such participation has been referred to as “closure,” whereby the reader fills in the details of the empty space between the panels, and the result of this process is to “foster an intimacy. . . between creator and audience.”

In short, visual storytelling involves a complex meaning/making paradigm between author a reader, and the decoding of this paradigm is quite different from traditional text-only literature. Graphic literacy is all together a different, yet significant, literacy that students need to be able ‘speak.’

#### 4. **Rationale for addressing the need through a curricular change:**

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.

Upon completing the class, students will be better prepared to meet the new 21<sup>st</sup> century visual literacies crucial to student academic success above and beyond high school. Students will also have a better understanding of the way graphic literature has both had an influence on American culture, and how graphic literature serves as a reflection of American culture.

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.

N/A

- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

This course will fill in gaps in the English department summer school offerings – both in terms of student interest and visual literacy skills.

**5. Description of proposed change:**

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.

This course is designed to appeal to students with interests in alternative literature, art, and contemporary media. It is designed to appeal to students looking for an alternative to the traditional English course elective. The size of the target group is one section of summer school – twenty to thirty students.

- b) Provide a tentative outline of the proposed course or program.

Unit I      An Introduction to Visual Literacy: *Understanding Comics: The Invisible Art* by Scott McCloud

Unit II      Historically Speaking: comics as a Reflection of American Culture  
                 1940s – wartime propaganda  
                 1950s – McCarthyism, fear, and censorship  
                 1960s – the counterculture movement  
                 1970s – the Civil Rights movement and political commentary  
                 1980s – Reaganomics and big business  
                 1990s – social ills and issues  
                 2000s – the global stage

Unit III      The Voice of Historical Fiction: *Maus* by Art Spiegelman

Unit IV      The New Literature: *Watchmen* by Alan Moore

**6. Implications of the proposed change:**

- a) What are the implications of this proposed change for staffing, facilities, and budget?

This course will require no changes for staffing, facilities, and budget. The cost of an instructor to teach the class for one summer semester will come from summer school registration fees. There must be sufficient enrollment at a cost-neutral level in order to run the course .

- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?

This class would provide students with one additional English class elective option.

- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?

This one semester summer school class will require no extra resources or summer curriculum work.

7. **Method of evaluating the success of the proposal after it is implemented:**

Students will demonstrate their mastery of visual literacy and the concepts of this course by applying the concepts learned to a graphic novel of their choice in an analytic essay.

## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook South    **Department:** English

**Date:** 11/05/10

**Name of Proposed Curricular Change:** Reading Enrichment 163

**1. Brief description of the curricular change:**

Proposing the current course is an outgrowth of the Response to Intervention (RtI) Reading Subcommittee's work to provide evidence-based reading support for readers who have been identified through universal screening or by teacher referral. The course would enable students to receive RtI Tier II and Tier III reading interventions and earn credits simultaneously. Students will take the proposed course in addition to their core courses.

**2. Curriculum Planning Committee Membership**

- a) List the members of the committee.

Damien Braude, Sue Levine-Kelley, Monika Neale

- b) Give the rationale for the membership of this committee.

Sue Levine-Kelley is the Instructional Supervisor for English, ELL, and Broadcasting. Monika Neale is the Response to Intervention Coordinator. Additionally, Sue Levine-Kelley and Monika Neale are the co-leaders of the RtI Reading Subcommittee. Damien Braude is the Reading Interventionist and a member of the RtI Reading Subcommittee.

**3. Need for the curricular change:**

- a) Present and analyze data on student learning that point to a need for change.

In order to comply with the most recent changes in federal law and state regulations, schools are required to provide supplemental instruction with increasing intensity in a general educational setting for those students who have been identified as being at risk for academic struggles due to lack of sufficient reading skills.

- b) Present other data (demographic, anecdotal, research, and others) that point to a need for change.

Historic data indicates that a considerable portion of juniors do not meet basic standards in Reading as measured by the Prairie State Achievement Exam (PSAE). With an acute focus on early identification and systematic remedial interventions, we expect to be able to address the needs of these students more effectively.

- c) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change

Reading comprehension is one of the pivotal skills that students must possess to be successful learners at the secondary level. Reading comprehension, or one's interaction with the text to construct meaning; however, is an immensely complex process. Reading research in the past 15-20 years revealed several key factors that influence whether comprehension is successful. Some of these factors are reader characteristics such as prior knowledge, skills and strategies, while other factors relate to the text itself. Most relevant to the current course proposal, however, is the finding that if a student cannot read a text fluently, reading comprehension suffers or is nonexistent (Coyne, Kame'enui, Carnine, 2007).

The new course has been designed with varying reading levels in mind and focuses on both fluency building and the application of comprehension strategies. Building fluency will ultimately aid comprehension, while teaching reading strategies through content area materials will enable students to deal with more than one set of facts, competing theories, multiple viewpoints and how to acquire increasingly complex concepts in text.

#### 4. **Rationale for addressing the need through a curricular change:**

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.

The Tier II complementary program to core instruction follows a curricular format that includes decoding strategies, fluency practice, comprehension questions, and writing prompts within science and social studies content. This explicit, direct instruction will help students improve word attack, vocabulary, fluency and comprehension skills. Instructional routines include direct instruction, modeling, guided practice, student practice and application with feedback.

The Tier III complementary program provides a balanced program of computer-assisted individual instruction, silent sustained reading and direct group instruction that addresses the literacy skills mentioned above.

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.

The reading committee has reviewed a number of evidence-based supplementary reading programs that would fit the requirement of the federal mandate pertaining to providing scientifically-validated interventions. After a careful and thoughtful selection process, REWARDS Plus was chosen to be one of the options to be offered within the framework of this supplementary reading instruction for Tier II. Read 180 has been identified as a Tier III intervention. Read 180 meets the federal mandate requirements for a Tier III intervention and is already used in the school predominantly for students in Special Education. Evidence shows that mainstream

students with low reading skills do benefit from this more intense program.

- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

Reading strategies applied in the course are an extension of the universally applied Tier I reading strategies, Content Area Reading Team (CART), which are utilized in all GBS core courses throughout the curriculum. However, reading strategies will be taught more explicitly, with increased intensity (e.g., small group setting) and frequency.

GBS currently offers Reading Skills Development (RSD) with a curriculum that includes different research-based strategies to support student growth in reading. The RSD curriculum includes sustained silent reading, intensive conferencing, meta-cognitive strategies, and the incorporation of select University of Kansas comprehension strategies that help students who are closer to grade level to improve their reading comprehension.

The major difference between RSD and Reading Enrichment is in the degree of remediation, the explicitness and intensity of the instruction. The course outline and progress monitoring results specify in much greater detail the sequencing and coordination of components and what teachers do explicitly to ensure that students learn the components as they proceed through the curriculum.

## **5. Description of proposed change:**

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.

GBS students whose reading performance on the universal screening fall below the identified threshold for Tier II may be considered for the Tier II intervention offered in this course. GBS students whose reading performance on the universal screening fall below the identified threshold for Tier III may be considered for the Tier III intervention offered in this course. These students in both tiers of interventions would benefit from continued decoding and fluency practice with greater focus on vocabulary and comprehension.

Based on our first universal screening that we completed in the fall of 2010, we anticipate anywhere between 45-65 students to be identified annually, including English Language Learners and students with special needs. Upon completing the necessary data triangulation, we expect 25-50 students to be eligible and enrolled in the program per semester.

- b) Provide a tentative outline of the proposed course or program.

The elective-credit course is a semester in duration with the option of students exiting after a quarter or semester if the desired goal has been reached. The goals of the program are that students will read multisyllabic and high frequency words



found in science and social studies textbooks, as well as in other course materials, more accurately and fluently. A further expectation is that as accuracy and fluency increase, comprehension will also increase. Other goals include accurately completing multiple-choice items, short-answer questions, and writing extended responses and summaries of reading passages.

To start the course, within the Tier II setting, the Rewards Plus program will be used. There are two sets of textbooks that will be used from the REWARDS Plus series: Reading Strategies Applied to Social Studies Passages and Reading Strategies Applied to Science Passages. The lessons are based on social studies or science passages that were written specifically to be interesting and representative of text commonly found in secondary science, social studies and literature books. These passages require little specialized background knowledge, contain many multisyllabic words, and have a readability range from 8<sup>th</sup> to 9<sup>th</sup> grade. Social Studies lessons require two to three instructional periods (approximately 45-50 minutes) while Science lessons require three to four.

Before reading the passage in each lesson, students use a predetermined set of strategies to review multisyllabic words for the day. These strategies help students determine the pronunciation of difficult words. The teacher introduces the meanings of critical vocabulary and provides background knowledge required for passage comprehension. During reading, the teacher asks literal and inferential comprehension questions, and after reading, students practice repeated readings to build fluency. Strategies for answering multiple-choice and short-answer items and for writing summaries and extended responses to writing prompts are taught and modeled. Students practice these strategies in each lesson.

Within the Tier III setting, The Read 180 program will be used. Read 180 is research-based and proven to meet the needs of struggling readers whose reading achievement is below the level of proficiency. The program directly supports student needs through differentiated instruction, adaptive and instructional software, high-interest literature, and direct instruction in reading, writing, and vocabulary skills.

## **6. Implications of the proposed change:**

- a) What are the implications of this proposed change for staffing, facilities, and budget?

The program can be staffed within the existing at-risk staffing allocation and housed with present classroom facilities.

Student and teacher materials have been ordered for the Tier II reading program (Reading Plus workbooks). With the exception of additional student workbooks, no additional resource requirements are anticipated at this time for the Tier II program. To obtain additional student materials or complimentary programs, building budget will be utilized upon approval from the Assistant Principal for Curriculum and Instruction.

Student and teacher materials will be needed for the Tier III reading program (Read 180). While this program currently is utilized within the GBS Special Education Department, a limited number of resources can actually be shared from one class to another. Student workbooks, novels, and PIN licensing will be purchased to furnish the new students programmed within the Tier III program. These additional items can be purchased as extra items, adding to our existing structure, because the district has purchased the general licensing rights to the program using special education funds.

- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?

Students who complete the Reading Enrichment course, but still need Tier II reading support, and other students who are identified, may be considered for the existing Reading Skills Development course. Careful curricular and instructional coordination of the proposed class and RSD will be of paramount value.

Students who enter Reading Enrichment needing Tier III interventions may need that intervention for the whole year or may be able to exceed predicted peer progress enough to move into a Tier II intervention after a semester or a quarter.

- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?

We anticipate that summer curriculum work will be necessary.

**7. Method of evaluating the success of the proposal after it is implemented:**

- a) If the proposal is approved and implemented, how shall it be evaluated?

To evaluate the program's efficacy, pre and post assessments are recommended. Strategic (meaning at least once a month) progress monitoring and providing feedback to students individually and their families is required by the State. It is, however, the RtI Reading Subcommittee's recommendation that data collection should occur every other week to gauge student growth and make timely instructional decisions.

- b) What specific outcomes shall indicate success of the implemented proposal?

Students who are enrolled in the program, will have increased ability to:

- Accurately decode and encode unfamiliar or multisyllabic words to increase passage reading accuracy and fluency.
- Understand critical academic vocabulary that includes not only vocabulary specific to Social Studies and Science, but high frequency academic words as well.
- Apply multiple cognitive strategies before, during, and after reading such as

previewing expository passages, finding the main idea and summarizing in order to comprehend expository texts.

- Respond to multiple-choice and short answer items.
- Write coherent multi-paragraph answers, summaries, and extended responses.

## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook South    **Department:** English

**Date:** 11/5/10

**Name of proposed curricular change:** Media Collage: Stories in a Digital Age

**1. Brief description of the curricular change:**

While a number of courses in the building supplement curricula with digital tools, like blogs, wikis, and digital storytelling, there is no course that uses these tools as the means to examine our role of authorship in the twenty-first century. An English elective would give students the opportunity to attend to core English skills, like reading and writing, while also helping students to build a deeper understanding of digital tools and their function in our responsibilities as readers, writers and citizens.

**2. Curriculum Planning Committee Membership**

- a) List the members of the committee.

Scott Glass

- b) Give the rationale for the membership of this committee.

I am interested in teaching this course.

**3. Need for the curricular change:**

M.I.T.'s Media Laboratory, the Association for Supervision and Curriculum Development, and the Knight Foundation: these are just three of the prominent organizations that recently have called for a re-examination of the way we are teaching, or not teaching, our students to be creative, critical thinkers when using the digital tools at their disposal. In his paper "Rethinking Learning in the Digital Age," MIT's Michael Resnick draws an analogy between computers and finger paint. His point in this analogy is that most people mistakenly think of the computer like they think of the television. But, as he explains, this is misguided. Whereas the television requires passivity from its audience as it delivers information to them, the computer can be a tool for dynamic, active thinking and the actual production of content. Like finger paint, the computer allows people to manipulate materials and invent. Respected copyright lawyer Lawrence Lessig makes a similar point in his book *Remix*, arguing that the media texts that surround us completely should be regarded as "paint on a pallet." To extend the metaphor, remixing media texts, then, is akin to learning how to express oneself clearly and powerfully on a "canvas."

Still, as educators we tend to think of our students arriving in the classroom knowing how to use computers and digital tools in the way Resnick describes. But research and anecdotal evidence make it clear that while students are immersed in the digital culture, their immersion does not make them particularly skilled at navigating, creating, and analyzing content in this twenty-first century world. While arguing this point in the

Journal of Adolescent & Adult Literacy, David Considine, Julie Horton, and Gary Moorman, state that “[the Millennial Generation’s] extensive use of [digital technologies] often creates a false sense of competency, as well as the misperception among many adults that contemporary youth are ‘media savvy.’ Hands on is not the same as heads on.”

In essence, Considine, Horton, and Moorman are saying that Millennials are not as literate when it comes to digital technology as we think. In recent faculty meetings, teachers at GBS have been asked to consider how literacy is traditionally defined in order to move beyond more limited definitions, like “literacy is the ability to read a printed text.” As we incorporate technology both to bolster writing and reading, as well as to improve skills like communication, creativity, and critical thinking, this course will be instrumental in bringing these literacies together.

4. **Rationale for addressing the need through a curricular change:**

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.

Ultimately, this course can only strengthen our students’ abilities to become critical, creative thinkers and problem solvers: two crucial skills for their continued success at Glenbrook South and after. We are living in a transformative age, one that media critic Douglas Rushkoff calls a “new renaissance.” If the original renaissance helped make people readers, this new renaissance will demand us to be authors. The point is not just that digitalization provides the means to become content producers. In a competitive world that rewards innovation, students must become adept at imagining ideas, expressing those ideas coherently, evaluating the power of their communication, and revising to make their voices more commanding. This synergistic effect cannot be achieved by threading skills throughout the curriculum. Instead, students need an intensive, eighteen-week study of the changing media landscape and the individual’s role within it.

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.

No other approaches have been considered.

- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

First, while this course focuses on these new technologies, at its core it is ultimately about communication. It builds off of the work done in other English classes, where the focus is on conveying clearly one’s ideas. After all, a digital story or blog can only be as good as its writing, in which case this course ultimately will complement the work already being done in English.

Second, as was stated earlier, numerous courses in the building use blogs, wikis and digital storytelling. However, nowhere are students asked to thoroughly study their digital world as it exists for them once they are outside of the classroom.

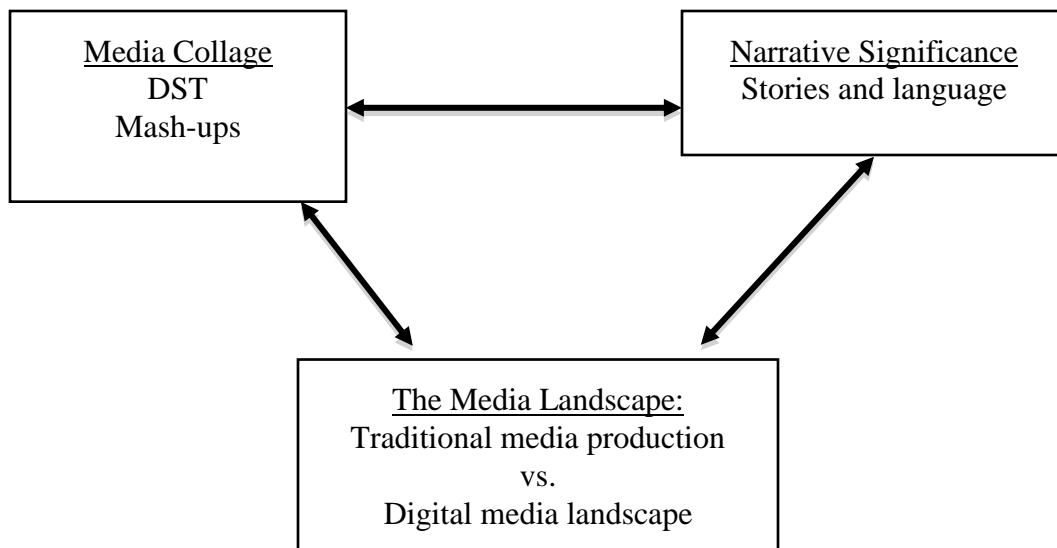
## 5. Description of proposed change:

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.

The curriculum is designed as a rigorous one-semester junior/senior elective.

- b) Provide a tentative outline of the proposed course or program.

The course will be organized in three threads: Media Collage, The Media Landscape, and Narrative Significance.



### Media Collage

This thread encompasses actual student production of media. One of the most familiar modes of production will be digital storytelling, as well as other tools that may be used, including mash-ups and fan fiction. The term media collage, as defined by Jason Ohler in *Educational Leadership*, refers to the “ability to integrate emerging new media forms into a single narrative.” The term “media forms” refers to Web pages, blogs, digital stories, and mash-ups, among others.

This thread will require students to create media that represents their own voices and experiences. In Ohler’s article, he argues that there is a need for both “private and participatory social literacy”: it is important that students understand how to create media for themselves as well for publication and collaboration. While all student production will be shared within the classroom, there will be one project designed for an audience outside of its walls.

Possible projects include:

#### 1. The Iconic American Text

This project asks students to interview a family member, neighbor or friend about what the interviewee considers to be an iconic American text: a book, film, play, artwork, or piece of music that helped to define an important concept or instill some belief about America. This will be the first project.

## 2. The Mash-up

Possibly based on the iconic text project, this project asks students to remix media texts in order to juxtapose, draw connections, and/or communicate a fresh perspective on previously created material. This project will also serve as an ideal time to discuss copyright laws and sources like Creative Commons and OurMedia.

## 3. Glenbrook/Glenview Stories (Web site/wiki)

A possible culminating project would ask students to find a story dealing with GBS or Glenview, research it, and then create a media collage (digital story, mash-up, blog posts) for publication on a class Web site. Ideally, the Web site itself will be a product of class collaboration.

## The Media Landscape

This thread will look at the ways that traditional media structures have been altered and subverted with the advent of digital tools. Traditionally, media has moved in one direction, from the small number of corporate producers of content to the large number of viewers. Media conglomeration in the last 15 years has concentrated this power into even fewer hands. However, this model is quickly changing as digital tools for creating media become cheaper and more widespread.

At the same time, regardless of the unprecedented access that our students have to the controls of production, a good portion of the media that they view is constructed for commercial purposes and represents a particular point of view. If the growing popularity of digital tools has been a hallmark of the last 10 years, so to has the exponential growth of information and *misinformation* with which we are bombarded on a daily basis.

Conventional media literacy has focused on the ways in which texts like films, ads, and news stories are produced, packaged, and sold. Although digital tools are giving a larger number of people the ability to broadcast their voices and tell their own stories, we still live in a culture overwhelmed with commercial media. For this reason, it is still tantamount that students have the critical tools to navigate this culture, which means knowing what questions to ask about any media text that they encounter and how to find reliable information.

While these conversations typically are framed as repudiations of major media corporations for their irresponsibility, this topic must be dealt with in a more nuanced way. For example, citizen journalism (typically in the form of blogs) provides more diverse voices and views on important topics, which brings more people into our democratic process. But this kind of journalism is not typically held to the same standards as traditional news sources so that questions of veracity undoubtedly surface. It is also true that some of the most important global stories can not be reported on as easily without the financial backing that a corporation supplies.

The class will use scholarly articles and observation to study the advantages and disadvantages of our quickly changing media landscape.

## Narrative Significance

For some time now, researchers have claimed that the primary way that humans understand their world is through narrative. While we may regard stories as something to engage in when we want to be entertained, the role of story in our lives is much more profound.

With this in mind, and because, first and foremost, this is an English course, we will spend a good deal of time discussing the importance of narratives to our lives and creating authentic, powerful stories. Whether it is a blog, a digital story, or a Web site, the ability to use language in fresh and captivating ways ultimately determines the success or failure of any media collage. Digital tools do not and will not supplant the need for people to communicate with language.

Every project created in the course will first and foremost require students to produce meaningful and powerful writing. After all, if the future of digitalization means that our students will have the opportunity to publish and express themselves not just privately, but socially as well, then they must continue to write and reflect on their writing.

As a way to broach this subject, students will read *The Triumph of Narrative*, by Robert Fulford.

**6. Implications of the proposed change:**

- a) What are the implications of this proposed change for staffing, facilities, and budget?

No new staffing or facilities are necessary. The course would utilize existing computers within labs and film editing programs.

- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?

While the course will certainly complement other courses, ultimately it will compete with other elective courses for enrollment.

- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?

A summer curriculum project is required in order to fully write the curriculum.

**7. Method of evaluating the success of the proposal after it is implemented:**

- a) If the proposal is approved and implemented, how shall it be evaluated?

Evaluation will take place through observations by administrators, such as the English Department I.S. and the Associate Principal of Curriculum and Instruction; through reflection by the instructor; and through anecdotal student feedback gathered by comparing students' beginning knowledge with their final understanding of the subject.

- b) What specific outcomes shall indicate success of the implemented proposal?

An increased student awareness of how the media functions, exhibited through continuous coursework as well as in a final performance assessment.



## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook South    **Department:** Mathematics

**Date:** 11/05/10

**Name of proposed curricular change:** Precalculus 563

**1. Brief description of the curricular change:**

We are proposing a yearlong course that will follow Algebra III with Trig Studies 453 and provide a course for students who struggled in Advanced Algebra 363. Currently the Studies sequence terminates after Algebra III / Trig Studies. In addition, the present sequence does not afford an option for students to move down from regular after completing Advanced Algebra 363.

**2. Curriculum Planning Committee Membership**

a) *List the members of the committee.*

Kathy Coskey, Mark Gallagher, Phil Gartner, Lea Hotton, Natalie Jakucyn, Ann LePage, Ryan Sutherlin, Mary Wiltjer

b) *Give the rationale for the membership of this committee.*

Phil Gartner is the Instructional Supervisor for Mathematics. Ryan Sutherlin is the Mathematics Studies Coordinator and will be chairing the committee. Lea Hotton taught the Algebra III with Trig Studies course for 5 years. Mark Gallagher has worked with our Studies population for a majority of his career, and is a teacher of Advanced Algebra. Kathy Coskey teaches Advanced Algebra and is the RtI coordinator for the mathematics department. Natalie Jakucyn and Mary Wiltjer have both authored texts for the University of Chicago and have worked with at-risk students. Mary is currently the team leader for Algebra 2 with Trig Studies. Natalie taught Algebra III with Trig G several years ago and is currently teaching Precalculus with Statistics 463 and Decision Making with Data.

c) *If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.*

N/A

**3. Need for the curricular change:**

There are two factors driving the need for this curricular change. First, the population of students that are juniors who complete Algebra III with Trig Studies has increased over the last few years. Each year, there are approximately ten to fifteen juniors in Algebra III with Trig Studies. After the completion of the course, they had three options: 1. Precalculus with Statistics 2. Decision Making with Data or 3. No more mathematics. Precalculus with Statistics is a difficult adjustment for students who have spent their high school mathematics career in the Studies program. There are countless anecdotes of

students becoming frustrated with the difficulty of the class, and therefore doing poorly, failing, or just dropping the course. The prerequisite for Decision Making with Data is Precalculus with Statistics, but given the difficulty that the Studies' students have had in adapting to Precalculus with Statistics, that prerequisite has been waived for stronger students from Algebra III Studies. Again, the success of the students in Decision Making with Data from Algebra III with Trig Studies has been marginal. They are grouped with students who have finished Precalculus with Statistics, Precalculus with Discrete, or in some instances, AP Calculus.

The second group of students that necessitate this curricular change is the student who is not as successful in Advanced Algebra and is not predicted to succeed in Precalculus with Statistics. Currently, a student who has a low "C" or a "D" in Advanced Algebra has two options upon completing the course: 1. retake Advanced Algebra, or 2. move on to Precalculus with Statistics. The ability to drop to a lower level class does not exist for that student since much of the material in Algebra III Studies overlaps with the Advanced Algebra curriculum. The Advanced Algebra teachers from the 2009-2010 school year were asked to look back at their recommendations for the 2010-2011 school year. From that group of teachers, approximately 50 students were identified that would have benefited from being in this proposed course, Precalculus 553, had it existed at the time, instead of Precalculus with Statistics. The teachers of Precalculus with Statistics will also tell you that they can identify students that are going to struggle early in the year. This course would be a place that those students could succeed if they moved down in the beginning of the school year.

Looking at data from the 2009-2010 school year, 17 out of 20 students who earned a D in Advanced Algebra were recommended for Precalculus with Statistics. 68 out of 72 students who earned a "C" in Advanced Algebra were recommended for Precalculus with Statistics, as well. Precalculus 553 would be an ideal course for some of the students (but not all as some may have the ability or may respond to other measures to bring up their performance). As we looked at the grade distribution data, we noticed that 28 students out of 296 (9.5%) earned a "D" or "F" in 2008 for the first semester of Precalculus with Statistics. 25 students out of 329 (7.6%) earned a "D" or "F" during the first semester of 2009. Precalculus with Statistics was clearly not a successful course for these students, and some would have benefited from the Precalculus 553 option.

Our goal is that we have a Precalculus course that is an appropriate challenge for students of all levels. Many students who do not take a fourth year of mathematics do so because there is not a course that fits their needs. As GBS College Counselor Ann LePage stated, "a math option for these students is essential." Indiana University and Purdue University are starting to strongly recommend four years of high school mathematics, possibly leading to a future requirement. It is important that we are ahead of this requirement, and have a course that is rich mathematically and taught at a pace and with an instructional style that allows for student success. It is important that students have a course that is the next step up on the ladder. Colleges do not look favorably at a Consumer or Applied Mathematics course for mathematics credit. We should provide the students a course that will lead them to success in college.

4. **Rationale for addressing the need through a curricular change:**

There is no doubt in the committee's mind that student learning will improve with the addition of this course. The main reason for that success is that the students will be placed in a course that will be taught to their ability level. This is not to say that they will not be challenged mathematically or that the standards will be low, but the course will be taught as a Studies-level course. The pace of the course will be suited to the student. The concepts will be approached from an application point of view. This course provides continuity to their curriculum.

Most of our students attend college after GBS and need to have a fourth year of mathematics. Our goal for this course is to provide an opportunity for the students to be enrolled in a mathematics class as a senior that will provide them with the needed foundation to be successful in a college mathematics classroom.

Another benefit of addressing this need through a new course is that Precalculus with Statistics teachers are able to teach a higher-level, more challenging course when the lowest-achieving students are pulled out into a separate class. In essence, there would be a narrower range of ability levels, thereby allowing the teacher to more effectively teach to that level of students without going too slow for the "Studies" level students that are in the advanced course.

5. **Description of proposed change:**

- a) *Describe the students for which this curriculum change has been designed and the approximate size of the target group.*

From this committee's informal research, there are approximately 60 students that would be target for this course. The target group would be the juniors from Algebra III with Trig Studies and the students who struggle with Advanced Algebra as recommended by the instructor and Instructional Supervisor.

- b) *Provide a tentative outline of the proposed course or program.*

The course will cover the following content, introduced and taught through applications, modeling, and labs. All of the functions will have a focus on transformations.

- Polynomial Function Behavior
  - Domain, Range
  - Increasing, Decreasing, Concavity
  - Piecewise-defined
  - Inverse Functions
  - Factoring
  - Composition
  - Transformations
  - Solving Polynomial Equations
  - Optimization

- Linear Programming
- Modeling / Applications
- Trigonometric Functions
  - Transformations
  - Right Triangle Trigonometry
  - Unit Circle
  - Trigonometric Identities
  - Law of Sines/Law of Cosines
  - Solving Trigonometric Equations
  - Modeling / Applications
- Rational Functions
  - Graphing
  - Simplifying
  - Operations (Addition, Subtraction, Multiplication, Division)
  - Solving Rational Equations
  - Modeling / Applications
- Logarithmic Functions
  - Properties
  - Inverses
  - Solving Equations
  - Applications/Modeling
- Probability/Statistics
- Matrices/Vectors
- Modeling with Data (integrated throughout)
- Financial Topics (integrated where appropriate)

## 6. **Implications of the proposed change:**

- a) *What are the implications of this proposed change for staffing, facilities, and budget?*

This course should not cause any additional staffing. The addition of this course will be balanced with the loss of sections of Precalculus with Statistics.

- b) *What are the implications of this proposed change for other courses in the department and for other departments in the school?*

There will be fewer students in Precalculus with Statistics. There will be a couple fewer students in Decision Making with Data. This course should have no effect on other departments outside of math except for those students who otherwise would

have taken no math and are now enrolling in a math course at the expense of another department's offering.

- c) *What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?*

Summer curriculum work is needed because this will be a brand new course with a new team and a new textbook. We would perhaps need training if a program were selected that requires it.

**7. Method of evaluating the success of the proposal after it is implemented:**

- a) *If the proposal is approved and implemented, how shall it be evaluated?*

We will evaluate the course by evaluating the success of the students in the course. Are they staying with the course for the entire school year? Are they having success with the material? We will analyze anecdotal data from the teachers and the students. We would hopefully be able to also view data from Oakton on students' placement tests.

- b) *What specific outcomes shall indicate success of the implemented proposal?*

We will look at the enrollment of the class. Does it stay consistent? There is a propensity for a handful of less motivated or less able seniors to drop a mathematics class at the semester. Do the students in this class stay for the entire year? We will look at their grades and their placements at the colleges that they attend. Are more students taking mathematics for four years at GBS? If so, then this class is a success.

## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook South    **Department:** Mathematics

**Date:** 11/05/10

**Name of proposed curricular change:** Mathematics Enrichment 163

**1. Brief description of the curricular change:**

Proposing the current course is an outgrowth of the Response to Intervention (RtI) Mathematics Subcommittee's work to provide evidence-based mathematics enrichment for students who have been identified through universal screening or by teacher referral. The course would enable students to receive structured RtI Tier II and Tier III interventions and earn elective credits simultaneously. Students will take the proposed elective-credit course in addition to their core mathematics courses.

**2. Curriculum Planning Committee Membership**

- a) List the members of the committee.

Kathy Coskey, Phil Gartner, Monika Neale

- b) Give the rationale for the membership of this committee.

Phil Gartner is the Instructional Supervisor for Mathematics. Monika Neale is the Response to Intervention Coordinator. Kathy Coskey is a mathematics teacher and the RtI liaison from the Mathematics Department.

**3. Need for the curricular change:**

- a) Present and analyze data on student learning that point to a need for change.

In order to comply with the most recent changes in federal law and state regulations, schools are required to provide supplemental instruction with increasing intensity in a general educational setting for those students who have been identified as being at risk for academic struggles.

- b) Present other data (demographic, anecdotal, research, and others) that point to a need for change.

Historic data indicates that a considerable portion of juniors do not meet basic standards in mathematics as measured by the Prairie State Achievement Exam (PSAE). With an acute focus on early identification and systematic remedial intervention, we expect to be able to address the needs of these students more effectively starting in the freshman year.

Based on the results of the universal screening (freshman placement) and the administration of the AAIMS Algebra probes, we know that there are a considerable

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number of students (approximately 10% of freshmen) who would benefit from additional learning opportunities in mathematics. The group of students found at risk is typically comprised of students placed in Pre-Algebra, Algebra Studies, Algebra TEAM, and occasionally Algebra I courses.

- c) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change

While research on mathematics instruction at the secondary level seldom extends beyond analyzing mathematics instruction in terms of achievement on high-stakes tests, several general practices have emerged over the years. Some of them have been consolidated and published by the National Council of Teachers of Mathematics (NCTM) in 2000 when the preK-12 standards were reissued. Learning standards and corresponding practices that were increasingly more explicit were developed in years to follow and were greatly impacted by the Individuals with Disabilities Education Act (IDEA, 1997) and No Child Left Behind (2002). After the most recent reauthorization of IDEA 2004, a heightened emphasis on diverse learners' access to high-quality instruction in general educational settings emerged. However, it wasn't until 2008, when the National Mathematics Advisory Panel's report was published and some specific areas for improvement were discussed; one of which was making mathematics curriculum and assessment more algebra-focused. These reports and professional guidelines were influential in the Mathematics Subcommittee's work to establish mechanisms to ensure that struggling learners are identified early and instructional efforts focus on remediating deficit areas with targeted interventions.

Additionally, in a study published by Baker, Gersten, and Lee (2002) 15 high-quality research studies were examined for instructional impact. The study identified four types of interventions that yielded significant student improvement in at-risk (not Learning Disabled) students' mathematical performance. The first involves providing teachers with progress-monitoring data. The second successful intervention identified in the research was peer tutoring. The third was providing feedback to parents. And finally, explicit, teacher-led instruction that addressed both problem solving and computation was identified as the fourth type of intervention that positively impacted student outcomes and resulted in greater accuracy and better retention.

Additional resources that advocate for change can be found at:

- Center on Instruction  
[www.centeroninstruction.org/resources.cjm?category=math](http://www.centeroninstruction.org/resources.cjm?category=math)
- RTI Action Network:  
[www.rtinetwork.org](http://www.rtinetwork.org)
- National Center on Response to Intervention:  
[www.rti4success.org](http://www.rti4success.org)
- What Works Clearinghouse  
[ies.ed.gov/ncee/wwc](http://ies.ed.gov/ncee/wwc)

4. **Rationale for addressing the need through a curricular change:**

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.

The course will follow a routine that includes responsive mathematics teaching practices and explicit systematic instruction to cement emerging skills and to promote acquisition of new mathematical understandings. To provide the greatest potential for success for all students, the instruction will be tailored to students' needs.

Instructional approaches include teacher-led instruction, modeling, guided practice, student practice and application with feedback, as well as data collection on student progress every other week. Additionally, depending on identified needs, a computer-assisted individualized component may be considered.

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.

The Mathematics Subcommittee has reviewed a number of evidence-based supplementary curricula that would fit the requirement of the federal mandate pertaining to providing scientifically-validated interventions. After a careful and thoughtful selection process, it was deemed necessary to add a course with flexible structure to address the needs of diverse learners.

- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.

Instructional strategies applied at the Tier II level will be an extension of current practices in the classroom, characterized by increased explicitness and high rates of student-teacher interaction. A major consideration, however, is creating sufficient time for screening and a diagnostic process in order to match instruction to student need as closely as possible.

5. **Description of proposed change:**

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.

The course will be available to students who are identified as at risk of not completing the Algebra I course successfully. Student may be identified through freshman universal screening, mathematics course placement, data received from the middle school or data on a student's performance on the AAIMS probes administered monthly. Based on our initial estimations, we expect approximately 55-60 freshmen to be found eligible for Tier II interventions annually.

- b) Provide a tentative outline of the proposed course or program.
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The course is a year in duration, with the option of students exiting after a quarter or semester if the desired goal has been reached. The course will focus on deficits identified through screening and progress monitoring. It will support success in the current math course by providing direct instruction on related topics while addressing gaps in needed prerequisite knowledge and skills.

**6. Implications of the proposed change:**

- a) What are the implications of this proposed change for staffing, facilities, and budget?

This course would require additional staffing. Additionally, a suitable room would have to be used for the periods that this course runs. All staffing, facilities and professional development needs will be funded through existing building-level allocations.

- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?

Currently no structured enrichment/remedial class in mathematics is being offered. Coupled with the fact that students will take this course in addition to their core mathematics class, the implications for other courses in the department is minimal. It will be necessary to have strong collaboration among the core mathematics course teacher and the instructor of this enrichment class. Other departments could be affected if this course is taken at the expense of another course. It is possible that the course might be taken instead of a study hall or some other time in the schedule not devoted to a course and therefore would not affect other departments.

- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?

Summer curriculum may be necessary to prepare for the following academic year.

**7. Method of evaluating the success of the proposal after it is implemented:**

- a) If the proposal is approved and implemented, how shall it be evaluated?

To evaluate the program's efficacy, pre and post assessments are recommended. Strategic (meaning at least once a month) progress monitoring and providing feedback to students individually and their families is required by the State.

- b) What specific outcomes shall indicate success of the implemented proposal?

Students will demonstrate improving understanding and retention in the various pre-algebra and algebra topics underlying their deficits. In sum, students who are enrolled in the program will be more likely to grow in their mathematics knowledge as evidenced by EPAS (Educational Planning and Assessment

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System) growth. They will be also more successful in their core mathematics courses.



## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook South    **Department:** World Languages

**Date:** 11/01/10

**Name of proposed curricular change:** Mandarin Chinese 463/473

1.    **Brief description of the curricular change:** We would like to offer students a fourth year of Mandarin Chinese language and culture upon completion of Mandarin Chinese 363/373. The addition of this new course would provide students the opportunity to continue the development of their linguistic skills, and would prepare them for the Advanced Placement Mandarin Chinese Language and Culture course the following year, if approved.

2.    **Curriculum Planning Committee Membership**

- a)    **List the members of the committee.**

Hong Wu- Mandarin Chinese teacher at Glenbrook South

Danita Fitch- Instructional Supervisor of World Languages at Glenbrook South

- b)    **Give the rationale for the membership of this committee.**

Hong Wu is the current Mandarin Chinese teacher, and would be developing the fourth year course. Danita Fitch is responsible for overseeing the curriculum and instruction of the new Mandarin Chinese program.

- c)    **If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.** N/A

3.    **Need for the curricular change:**

- a)    **Present and analyze data on student learning that point to a need for change.**

The students currently enrolled in Mandarin Chinese 363/373 are progressing at a satisfactory rate. They will be prepared for a fourth year curriculum by the end of this school year.

- b)    **Present other data (demographic, anecdotal, research, and others) that point to a need for change.**

Students and parents anticipate the continuation of learning for next school year, which would be consistent with the department's goal to offer an Advanced Placement course in Mandarin Chinese Language and Culture the following year.

Many selective colleges and universities require 4 years of language study for admission and/or as a graduation requirement. By offering the proposed course, we are enabling our students to meet these requirements.

- c)    **Summarize opinions of experts (researchers, higher educational professionals,**

**business people, parents, community members) who speak to a need for change.**

Mandarin Chinese is the language with the greatest number of native speakers in the world with 873 million people. There are an additional 178 million people throughout the world that speak Mandarin as a second language.<sup>1</sup> Due to the changing global economic and political stage, Mandarin is a language that will provide countless opportunities for the future of our students.

Students will also find ample opportunities to continue their learning at the post-secondary level. Enrollment in Chinese language study at American colleges and universities has increased 51% since 2002. These enrollment numbers clearly reflect the changes in the global economy. Students increasingly see their futures taking place in a multilingual world, and they want language preparation to help them function in that world.<sup>2</sup>

**4. Rationale for addressing the need through a curricular change:**

- a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.**

The fourth year Mandarin Chinese curriculum will allow students to continue their learning from the third year course. Students will build their vocabulary of the target language, will learn more about Chinese culture, and will study more advanced structural components. Students will also continue developing the 4 language skills that are essential to communication in all of our courses: listening, speaking, reading, and writing.

- b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected. N/A**
- c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.**

If implemented, this proposal would give students of Mandarin Chinese the same opportunities afforded to students of all of the other languages we offer, with the exception of American Sign Language.

**5. Description of proposed change:**

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.**

This is designed for the students who complete the third year Chinese course.

- b) Provide a tentative outline of the proposed course or program.**

The outline of the fourth year course will be developed over the summer as part of a summer curriculum project. Preliminary curriculum work for the course is already underway as the teacher continues to participate in a variety of professional development activities to ensure a successful transition to the Advanced Placement Mandarin Chinese Language and Culture course the following year. Instructional materials will be evaluated this winter, since newly developed texts and technology tools continue to enter the educational market to meet the increased global demand for learning Chinese.

**6. Implications of the proposed change:**

- a) What are the implications of this proposed change for staffing, facilities, and budget?**

We anticipate the possible need for an additional 0.2 FTE for one section of Mandarin Chinese 463/473, which would be combined with Advanced Placement Mandarin Chinese Language and Culture 583. In addition to a classroom for the scheduled class, there are no other facilities that will be needed. Funds to further support the professional development of the instructor will also be needed. All staffing, facilities and professional development needs will be funded through existing building-level allocations.

- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?**

We expect this course will have minimal impact on other courses in the department, as the students had already selected Mandarin Chinese as their language of choice. There may be, however, a small number of students who would not be able to select an additional elective course.

- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?**

The Mandarin Chinese teacher would create a summer curriculum project to develop the fourth year course. Summer curriculum projects to develop new courses are generally contracted for 40 hours of work.

**7. Method of evaluating the success of the proposal after it is implemented:**

- a) If the proposal is approved and implemented, how shall it be evaluated?**

Qualitative (student surveys, observations, and teacher feedback) and quantitative (enrollment in the course, interest and enrollment in an AP level Mandarin Chinese class, grade distributions) data will be evaluated to determine if the course is a success.

**b) What specific outcomes shall indicate success of the implemented proposal?**

Student enrollment figures and appropriate level of preparation to justify offering an Advanced Placement Mandarin Chinese course for the 2012-2013 school year will be a measure of success.

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<sup>1</sup> Ethnologue: Languages of the World, 15<sup>th</sup> ed. Copyright © 2005–2009 SIL International

<sup>2</sup> Modern Language Association of America, Survey-Enrollments in Languages Other Than English in United States Institutions of Higher Education, Fall 2006

## **APPLICATION FOR CURRICULAR CHANGE**

**School:** Glenbrook South    **Department:** World Languages

**Date:** 11/01/10

**Name of proposed curricular change:** Advanced Placement Mandarin Chinese Language & Culture 583

1.    **Brief description of the curricular change:**    We would like to offer an Advanced Placement (AP) Mandarin Chinese Language and Culture course to allow students to continue their study of Chinese language and culture at the college level while attending GBS. We anticipate one section of combined fourth-year and AP Mandarin Chinese, which is a fifth year course.

2.    **Curriculum Planning Committee Membership**

- a)    **List the members of the committee.**

Hong Wu- Mandarin Chinese teacher at Glenbrook South

Danita Fitch- Instructional Supervisor of World Languages at Glenbrook South

- b)    **Give the rationale for the membership of this committee.**

Hong Wu is the current Mandarin Chinese teacher, and would be developing the AP course. Danita Fitch is responsible for overseeing the curriculum and instruction of the new Mandarin Chinese program.

- c)    **If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.**    N/A

3.    **Need for the curricular change:**

- a)    **Present and analyze data on student learning that point to a need for change.**

or

- b)    **Present other data (demographic, anecdotal, research, and others) that point to a need for change.**

Current third year students would have the opportunity to move directly into the AP Mandarin Chinese Language & Culture course, based on teacher recommendation, to prepare for the Mandarin Chinese Advanced Placement examination in May 2012.

- c)    **Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change.**

Mandarin Chinese is the language with the greatest number of native speakers in the world with 873 million people. There are an additional 178 million people throughout the world that speak Mandarin as a second language.<sup>1</sup> Due to the changing global economic and political stage, Mandarin is a language that will provide countless opportunities for the future of our students.

Students will also find ample opportunities to continue their learning at the post-secondary level. Enrollment in Chinese language study at American colleges and universities has increased 51% since 2002. These enrollment numbers clearly reflect the changes in the global economy. Students increasingly see their futures taking place in a multilingual world, and they want language preparation to help them function in that world.<sup>2</sup>

4. **Rationale for addressing the need through a curricular change:**

- a) **State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.**

The purpose of this course is to prepare students for the AP Mandarin Chinese Language & Culture exam and allow them to attain a high level of proficiency in language and culture skills. They are expected to develop an expanded ability to communicate in a culturally appropriate manner in various contexts. When Mandarin Chinese 163 was proposed three years ago, we stated that we would propose additional courses in subsequent years.

- b) **If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.** N/A
- c) **Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.**

If implemented, this proposal would give students of Mandarin Chinese the same opportunities afforded to students of all of the other languages we offer, with the exception of American Sign Language.



**5. Description of proposed change:**

- a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.**

This course is designed for students who are currently enrolled in Mandarin Chinese 373 and 363.

- b) Provide a tentative outline of the proposed course or program.**

The outline of the AP course will be developed over the summer as part of a summer curriculum project. The College Board is very clear about the guidelines for all language courses in the Advanced Placement program, and summer work would be in alignment with these expectations. Instructional materials will be evaluated this winter, since newly developed texts and technology tools continue to enter the educational market to meet the increased global demand for learning Chinese.

**6. Implications of the proposed change:**

- a) What are the implications of this proposed change for staffing, facilities, and budget?**

We anticipate the possible need for an additional 0.2 FTE for one section of Advanced Placement Mandarin Chinese Language and Culture 583, which would be combined with Mandarin Chinese 463/473. In addition to a classroom for the scheduled class, there are no other facilities that will be needed. All staffing, facilities and professional development needs will be funded through existing building-level allocations.

- b) What are the implications of this proposed change for other courses in the department and for other departments in the school?**

We expect this course will have minimal impact on other courses in the department, as the students had already selected Mandarin Chinese as their language of choice. There may be, however, a slight number of students who would not be able to select an additional elective course.

- c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?**

The Mandarin Chinese teacher would create a summer curriculum project to develop the fourth and fifth year courses. Summer curriculum projects to develop new courses are generally contracted for 40 hours of work.

**7. Method of evaluating the success of the proposal after it is implemented:**

- a) If the proposal is approved and implemented, how shall it be evaluated?**

First and foremost, we will look at enrollment figures to see if we are meeting the

needs of the students. We will also look at grade distributions. We will look at student performance data on local as well as state or national assessments including scores on the AP exam. Student surveys will also give us feedback.

**b) What specific outcomes shall indicate success of the implemented proposal?**

Enrollment figures to justify one section of the combined upper-level Mandarin Chinese will be the first indicator of success. We would also expect the grade distribution for AP Mandarin Chinese 583 to be similar to other AP language courses. We will look at local, state, national assessments to verify that students are meeting the course objectives. We will look at AP exam results to make sure that our students compare favorably with AP Mandarin Chinese students at other schools.

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<sup>1</sup> Ethnologue: Languages of the World, 15<sup>th</sup> ed. Copyright © 2005–2009 SIL International

<sup>2</sup> Modern Language Association of America, Survey-Enrollments in Languages Other Than English in United States Institutions of Higher Education, Fall 2006

Section A - Introduction

These procedures, outlined below, are intended to facilitate the systematic processing of curriculum development proposals for making modifications in the instructional program of District #225. The curriculum shall be defined to consist of all courses of study offered by the district.

Modifying the curriculum shall be defined as:

1. Adding or deleting a course, an entire sequence of courses, or a program.
2. Significantly changing the goals of an existing course or program.

Decisions concerning the administrative operation of the curriculum shall not be subject to the curriculum planning strategy. Decisions concerning such items as the following shall be made by the appropriate administrative staff:

- 1) assignment of the instructional staff,
- 2) development of the master class schedule,
- 3) assignment of students to classes,
- 4) recommendations concerning instructional materials, subject to the provisions of Policy 7180: Instructional Materials,
- 5) changes in course or program titles,
- 6) utilization of facilities,
- 7) classroom methodology or individual teaching strategies,
- 8) use of new instructional technologies.

Section B - Procedures

1. Each instructional supervisor, in conjunction with the associate principal for instruction and the department staff, shall conduct an annual evaluation of approximately twenty percent (20%) of the department's courses and programs. It is the expectation that all courses within a department will be reviewed at least once during the five-year cycle. The courses and programs to be reviewed will be determined through a collaborative process involving the associate principals for instruction and instructional supervisors at both schools. This review will be used as a base for the Instructional Supervisor Curriculum Report.
2. The impetus for curriculum change may be such factors as, but not limited to, the following: a demonstrated need for learning outcomes not met by current curriculum; data on student learning; demographic data on students; professional expert advice from educational consultants or representatives of higher education; the conclusions of educational research. Upon seeing a curricular need, staff members, students, parents, and members of the community may submit ideas for curriculum changes to the instructional supervisor of the appropriate department. Principals also shall inform parents and members of the community about curricular issues and shall invite representatives to join curriculum planning committees when appropriate. Experts and consultants may be engaged to provide input to the process when deemed appropriately by the respective principals.
3. Upon receiving a suggested change in curriculum, the instructional supervisor may convene an ad hoc departmental curriculum planning committee to address the need for the curricular change. This curriculum planning committee, after studying the perceived need, may write a curriculum proposal. If the proposed change affects more than one department, the principal may convene an ad hoc interdisciplinary committee to address the perceived need.
4. The proposal of the departmental committee must include the need, the rationale, a description, and the implications of the curricular change, as well as a method of evaluating the success of the implemented proposal (Appendix B).
5. All proposals recommended by the departmental or interdisciplinary committees shall be reviewed by the building's instructional supervisors and principal. Accepted proposals shall be acted on successively by the principal, superintendent, and the Board.

The decision or recommendation of each of the above-listed individuals or groups shall be communicated in writing to the committee submitting the proposal. A timeline for the strategy is contained in Appendix A of these Procedures.

6. No proposal shall be implemented unless approved by the principal, the superintendent, and the Board. The instructional supervisors shall serve in an advisory function.
7. Each year proposals shall be submitted to the Board for approval as indicated in the timeline in Appendix A of these Procedures. Under extraordinary circumstances, the superintendent may authorize the submission of a proposal to the curriculum planning process or to the Board at any time during the year.
8. One year after the implementation of a curriculum change, the instructional supervisor and the designated administrator shall evaluate each proposal approved by the Board in order to determine whether the proposal was successful in meeting its goals and fulfilling the educational needs. A report of this evaluation, together with a recommendation as to the continuance or modification of the implemented change, shall be shared with the appropriate committee that had proposed the curriculum change and shall be submitted to the superintendent and the Board no later than the end of the third semester that the course is offered.

**APPENDIX A**

**CURRICULUM PLANNING STRATEGY**  
**ANNUAL TIMELINE \***

| <u>Deadline</u>       | <u>Activity</u>   |
|-----------------------|---|
| March 15 to August    | Collaboration between instructional supervisors and principal or associate principal for instruction at both schools to review department curriculum in light of data on student learning and to consider curricular changes. |
| August to October     | Instructional supervisors set up committees for suggested curricular changes. Committees meet, plan, elicit input from various constituencies, and write proposal applications.   |
| By November 1         | Curriculum planning committees submit applications for curriculum changes to the instructional supervisors.   |
| By November 15        | Instructional supervisors review proposals and submit recommendations to the principals.  |
| By December 1         | Principals accept or reject proposals and, if accepted, send them to the superintendent including any resource implications.  |
| Prior to Winter Break | Superintendent accepts or rejects proposals and gives rationale for actions.  |
| By February 1         | Superintendent informs the Board of Education and submits accepted proposals for Board action.  |
| By March 1            | Instructional supervisors submit proposals for summer curriculum work to develop course outlines and instructional resources.   |

By March 15

Superintendent either approves the proposal for summer project and designates funding for summer curriculum project or rejects the proposal. Instructional Supervisor Curriculum Reports are due to the superintendent. These reports are based on curriculum review conducted or modifications made during the past year and identified curriculum directions for the ensuing year(s). The reports should also include an evaluation and recommendation for any course that has completed the third semester of implementation.

Note: Under extraordinary circumstances, the superintendent may authorize the submission of a proposal to the Board at any time during the year.

**\* This timeline will be coordinated with but not limited by the district budget timeline process.**

**APPENDIX B**

**APPLICATION FOR CURRICULAR CHANGE**

School:

Department:

Date:

Name of proposed curricular change:

1. **Brief description** of the curricular change
2. **Curriculum Planning Committee Membership**
  - a) List the members of the committee.
  - b) Give the rationale for the membership of this committee.
  - c) If outside experts or consultants are requested, give rationale for their inclusion, proposed revisions, and the curriculum vitae and fees.
3. **Need** for the curricular change:
  - a) Present and analyze data on student learning that point to a need for change.

or
  - b) Present other data (demographic, anecdotal, research, and others) that point to a need for change.

or
  - c) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, community members) who speak to a need for change.
4. **Rationale** for addressing the need through a curricular change:
  - a) State the purpose of the change, indicating specifically how this curriculum change shall improve student learning by meeting the needs described in #3 above.
  - b) If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.
  - c) Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.



**APPENDIX B** (Continued)

**APPLICATION FOR CURRICULAR CHANGE**

5. **Description** of proposed change:
  - a) Describe the students for which this curriculum change has been designed and the approximate size of the target group.
  - b) Provide a tentative outline of the proposed course or program.
6. **Implications** of the proposed change:
  - a) What are the implications of this proposed change for staffing, facilities, and budget?
  - b) What are the implications of this proposed change for other courses in the department and for other departments in the school?
  - c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?
7. **Method of evaluating** the success of the proposal after it is implemented:
  - a) If the proposal is approved and implemented, how shall it be evaluated?
  - b) What specific outcomes shall indicate success of the implemented proposal?

Adopted: November 21, 1977  
Revised: October 9, 1995  
Revised: November 27, 2000  
Revised: August 11, 2003