Office of the Assistant Superintendent for Educational Services

To: Dr. Mike Riggle
From: Rosanne Williamson
Re: New Course Proposals
Date: January 6, 2010

I am forwarding to you the new course proposals I have received from Glenbrook North and Glenbrook South administrators. *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 be presented with these new courses for discussion at our next meeting on Monday, January 11, 2010 and that action on this item would occur no later than the Monday, February 8, 2010 board meeting.
Those building administrators and instructional supervisors who were closely involved in the development of these proposals will be available at the Board meeting on January 11, 2010 to address questions from the Board.

Board Policy: Curriculum Planning Strategy 7010 (policy and procedures) is available on the district website, as well at: http://www.glenbrook.k12.il.us/district/Bo_of_Ed/html/SBP&P.htm for those Board members who may wish to review Board Policy concerning our process for new course approvals. Board policy 7010 and its procedures identifies not only the process for how proposals shall be submitted for Board approval, but it 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."

To: Dr. Mike Riggle, Dr. Rosanne Williamson
From: Kris Frandson, John Finan
cc: Paul Pryma,
Re: New Course Proposals
Date: December 1, 2009

The Glenbrook North Instructional Supervisors Team met on Tuesday, November 24, 2009 and voted to recommend the following new course proposals for your approval. These courses also meet with the approval of the principal and both associate principals. One course, as noted, is already in existence at Glenbrook South. I am also attaching the new course proposal forms for each of these listed below as well as the rationales for course name changes. Please let me know if you have any additional questions.

Department	Course Title	Status	Need	Impact
Science	Honors Biology 173 (continuation of the PCB science sequence)	New Course	This is the third course in the Physics-Chemistry-Biology (PCB) sequence of honors courses since the elimination of Unified Lab Science.	No additional cost or FTE as students are simply enrolling in the third year of science that has usually been part of a three year sequence with Chemistry in the third year. Approximate equipment costs would be $9600.00
Science	Anatomy and Physiology: Bones, Muscles and Nerves	New Course	Provides an additional lab based single semester course for students seeking to take a fourth year of lab science. Students interested in the various medical fields would find the class beneficial	No additional cost or FTE as this course would function as a fourth year of science. Since the elimination of Unified Lab Science, students will have greater needs for a fourth year of lab based science electives. Approximate equipment costs would be $8400.00
Science	Forensic Science 161 & 162	Course exists at GBS as an elective science course.	Provides an additional lab based single semester course for students seeking a fourth year of a lab science.	No additional cost or FTE as this course would function as a fourth year of science. Since the elimination of Unified Lab Science, students will have greater needs for a fourth year of lab based science electives. Approx. equipment costs would be $4100.00
Science	Materials Science 163/173	New Course	Provides an additional lab based single semester course for students seeking a fourth year of a lab science.	No additional cost or FTE as this course would function as a fourth year of science. Since the elimination of Unified Lab Science, students will have greater needs for a fourth year of lab based science electives. Approximate equipment costs would be $5000.00

Social Studies	World Religions 161 & 162	Revision to existing course at GBS. One semester elective course	Provides a one semester social studies elective that is based upon thematic comparisons of world religions	No additional cost or FTE is anticipated as this course would be one of the available social studies electives for sophomore and senior students
World Languages	Modern Hebrew 163 & 263	New Course	Interest from students and community supports the course proposal	New staff members would have to be hired who have the appropriate skills to teach Hebrew. Potential of 0.02 to 0.04 FTE may be required. It may impact other world language enrollments and FTE would be absorbed within the department.
World Languages	French Conversation and Culture 561 & 562	New Course	This one semester or two semester course will provide opportunities for students desiring to maintain their French language skills as an alternative to AP or honors courses.	If the course has enough enrollment, additional FTE may be required to meet this need. AP and 5th year honors courses have not "run" due to low enrollment over the past two school years.
Course Name Changes	**Current Title**	**New Title**		
English	English Tutorial	*Course title change to* **Foundations of Writing**		
Careers and Life Skills	Clothing/ Fashion/ Interior Design Studio	*Course title change to* **Fashion Design Studio**		

APPLICATION FOR NEW CURRICULAR OFFERING

School: GBN Department: Science Date: October 20, 2009

Name of proposed course(s): **Anatomy & Physiology: Bones, Muscles, and Nerves**

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

   The focus of this semester-long course is on the human anatomy and physiology necessary to pursue any healthcare career. The lessons are designed to develop a solid understanding of how the human body works. Material will be approached through case-based investigations using a whole-class inquiry approach. Anatomy and Physiology 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 nervous system as well as the skeletal and muscular 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 who have an interest in an 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 worked to develop an anatomy course that will 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 will contact the current Anatomy & Physiology instructor at Oakton Community College to investigate the use of the cadaver lab in their facility.

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 elective program (non-AP courses) consists of only one year-long lab-based course. Competitive universities prefer to see that students have completed 4 years of lab-based science.

      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. A year-long Anatomy & Physiology course was also rejected because the department plans to work closely with the Physical Education and Health department, as well as biology courses, to identify the prerequisite body of knowledge and support the existing Fundamentals of Personal Training course in the PE department.

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

The department also considered proposing both Anatomy and Physiology I and II for the 2010-2011 school year. However, the committee was concerned that two semester electives would not support the existing course in the Physical Education Department. Once enrollment in Anatomy and Physiology I is established, the committee plans to reconvene and further develop Anatomy and Physiology II.

The department has considered alternative electives to propose. These electives are Forensic Science and Materials Science. These courses will be proposed for the 2010-2011 school year.

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 curriculum 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.

Anatomy & Physiology I is expected to serve approximately 25 students (1 section) during the first year of implementation. This number would be expected to expand during the 2011-2012 school year as this is the first year all GBN students will have a fourth year available for an elective course.

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 trainers, physical therapists, and pre-med majors, to name a few.

b. Tentative Outline of Proposed Course

Anatomy & Physiology I
1st Quarter

Unit Name	Unit 1: Introductory Anatomy and Physiology Topics	Unit 2: Skeletal System
Class Periods	11	12
Concepts/Topics	• Levels of Structural Organization: Organ System Overview • Maintaining Life: Necessary Life Functions/Homeostasis • The Language of Anatomy: Anatomical Position/directional and regional terms, body planes & sections/cavities • Chemical Composition of living matter: concepts of matter and energy, composition of matter, molecules and atoms, chemical bonds and reactions, biochemistry • Cells and Tissues • Part 1: Anatomy of a cell, Organelle review, cellular diversity, cell physiology membrane transport, cell division, protein synthesis • Part 2: Body Tissues: Introduction to basic tissue types • Tissue Repair	• Bones: An Overview • Histology of Bone and Connective Tissue • Axial Skeleton • Appendicular Skeleton • Joints • Developmental Aspects of the Skeleton
Text Resource	Chapter 1, 2, 3 pp. 2-108	Ch. 5, pp. 134-181
Suggested Labs/Activities	• Language of Anatomy Exercise • Cell Anatomy & Cell Division Class Project • Cell Transport Lab (want to do something different than 163) • Classification of Tissues exercise	• Overview of the Skeletal System investigation • The Axial Skeleton exercise • Appendicular Skeleton investigation • Joints and Body Movements
Skills	• Proper Lab Safety & Technique • Design & Implement Lab Investigation • Drawing Conclusions • Text Reading • Related-Article Reading • Note taking • Microscope Use & techniques • Diagramming • Collaborative Group work • Peer Editing/Grading • Research Anatomy-related topics • Working in a scientific community • Communicating effectively	• Proper Lab Safety & Technique • Drawing Conclusions • Text Reading • Related-article Reading • Note taking • Collaborative Group work • Peer Editing/Grading • Informal Presentation • Microscope Use & techniques • Diagramming • Research Anatomy-related topics • Working in a scientific community • Communicating effectively
State Standards	11.A 4a-f, 11.A. 5a-e, 12.A.4b	11.A 4a-f, 11.A. 5a-e, 12.A.4b

Anatomy & Physiology II 2nd Quarter

Unit Name	Unit 3: Muscular System	Unit 4: The Nervous System	Unit 5: Cat Dissection
Class Periods	7	9	4
Concepts/Topics	• Overview of Muscle Tissue • Celllular Anatomy of Muscle Cells • Types of Muscle Cells • Muscle Movements (how origins and insertions impact form and function) • Gross Anatomy of Skeletal Muscles • Groups of Muscles acting together • Developmental Aspects of Muscular Anatomy	• Organization of the Nervous System (CNS, PNS) • Histology of Nervous tissue: structure & function • Central Nervous system • Peripheral Nervous system • Developmental Aspects of the nervous system • Structure and function of the neuron • Types of Neurons, roles • Structure and function of the Brain (cerebrum, cerebellum and brain stem) • Nerve impulses • Polarized, depolarized, repolarized state of the neuron • Reflex arc • Synapses & Neurotransmitters, Communication between neurons • Role of receptors	• Identification of body structure & function • Cumulative unit for muscles, nervous system, and bones
Text Resource	Ch. 6 pp. 183-226	Ch. 7, pp. 227-279	lab manual???
Suggested Labs/Activities	• Microscopic Anatomy and Organization of Skeletal Muscle • Gross Anatomy of the Muscular System • Case Study Investigation: Muscle Soreness	• Neuron Anatomy & Physiology Activity • Gross Anatomy of Brain & Cranial Nerves • Spinal Cord & Spinal Nerve study • Human Reflex Physiology Lab	• Cat dissection
Skills	• Design & Implement Lab Investigation • Text Reading • Related Article Reading • Note taking • Informal Presentation • Microscope Use • Diagramming • Writing Skills • Research Physiology-related topics • Working in a scientific community • Communicating effectively	• Lab Safety & Technique • Creating Data Tables • Drawing Conclusions • Quantitative Data Collection • Text Reading • Related-article Reading • Note taking • Collaborative Group work • Peer Editing/Grading • Informal Presentation • Microscope Use & techniques • Diagramming • Research Physiology-related topics • Working in a scientific community • Communicating effectively	• Lab safety & technique • Drawing conclusions • Text reading • Related article reading • Note taking • Collaborative group work • Practical lab skills
State Standards	11.A 4a-f, 11.A. 5a-e, 12.A.4b	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 majority of the materials needed for Anatomy and Physiology are non-consumables at an estimated cost of $7000.00 (see attached spreadsheet).

        The Fundamentals of Personal Training and Anatomy and Physiology I 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 I 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 and Physiology and Fundamentals of Personal Training courses.

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

Anatomy Physiology I

Semester 1 Equipment Requests

Equipment Item	Vendor	Cat. #	Quantity	Price	Item Total
Physiology Wall Charts	Wards	33W0520	1	$409.00	$409.00
Brain poster	Wards	33W8230	1	$17.50	$17.50
Human Torso Model	Carolina	NP-56-6623	1	$1,095.00	$1,095.00
Pelvis Male	Carolina	NP-24-7755	1	$64.50	$64.50
Pelvis Female	Carolina	NP-24-7765	1	$64.50	$64.50
Compact Bone Model (3D)	Carolina	NP-56-7377	1	$138.95	$138.95
Human Reflex Pathway Model	Carolina	NP-56-6800	1	$110.00	$110.00
Somso Human Neuron Model	Carolina	NP-56-7419	1	$399.00	$399.00
Sheep Brain	Carolina	NP-26-5310	1	$219.00	$219.00
Proscope HR	Vernier	BD-HRB	12	$279	$3,348.00
Compound Light Microscopes-have					$0.00
Digital Body Composition Analyzer	Carolina	NP-69-6255	1	$72.00	$72.00
Percussion (Reflex) Hammer	Carolina	NP-69-6435	14	$4.95	$69.30
Aluminum Pan with Vinyl Dissecting Pad	Carolina	NP-62-9004	14	$15.50	$217.00
Dissecting Pins	Carolina	NP-69-9132	2	$15.75	$31.50
Mammal Simple Squ Epith	Carolina	NP-31-2330	7	$4.25	$29.75
Mammal Simple Cuboidal Epith	Carolina	NP-31-2366	7	$5.00	$35.00
Mammal Simple Colum epith	Carolina	NP-31-2420	7	$6.00	$42.00
Mammal Stratified Squa Epith	Carolina	NP-31-2510	7	$5.20	$36.40
Mammal Adipose Tissue	Carolina	NP-31-2704	7	$4.35	$30.45
Mammal Areolar Tissue	Carolina	NP-31-2686	7	$5.65	$39.55
Mammal Reticulor tissue	Carolina	NP-31-2668	7	$5.70	$39.90
Mammal Tendon CS & LS	Carolina	NP-31-2794	7	$8.60	$60.20
Mammal Nerve Fibers teased	Carolina	NP-31-3576	7	$8.25	$57.75
Mammal spinal chord CS	Carolina	NP-31-3708	7	$5.10	$35.70
Mammal Periph Nerve	Carolina	NP-31-3552	7	$4.95	$34.65
Mammal Hyaline cartilage	Carolina	NP-31-2898	7	$6.75	$47.25
Mammal Compact Bone CS	Carolina	NP-31-2952	7	$6.00	$42.00
Mammal Skeletal Muscle (two views: longit	Carolina	NP-31-3256	7	$4.75	$33.25
Smooth Muscle teased	Carolina	NP-31-3334	7	$4.40	$30.80
Mammal nerve Cells Smear	Carolina	NP-31-3570	7	$6.00	$42.00
Myelinated Nerve Fibers	Carolina	NP-31-3552	1	$4.95	$4.95
Sea Urchin Embryology Slides	Carolina	NP-30-9702	1	$6.85	$6.85
Carolina Blue Slide Boxes(for 25 slides)	Carolina	NP-63-4200	34	$2.10	$71.40
Motor Nerve Ending w/plates	Carolina	NP-31-3864	1	$19.80	$19.80
Human X-Rays	Wards	33W 1090	1	$34.95	$34.95
Full Scale Human X-Rays	Wards	33W 1091	1	$36.95	$36.95
					$7,066.80

Anatomy Physiology I

Semester 1 Annual Consumable Supplies

ATP Glycerinated Muscle kit	Carolina	NP-20-3526	1	$79.75	$79.75
Cats- double injected (Kit?? P. 434)	Carolina	NP-22-8021	15	$51.75	$776.25
Cat Pregnant double injected	Carolina	NP-22-8022	1	$79.95	$79.95
Mammalian Brain BioKit	Carolina	NP-22-1490	1	$135.00	$135.00
petri dishes		NP-74-1248	2	$11.15	$22.30
plastic dissection gloves (small)	Carolina	NP-70-6386	1	$14.50	$14.50
plastic dissection gloves (medium)	Carolina	NP-70-6387	1	$14.50	$14.50
plastic dissection gloves (large)	Carolina	NP-70-6388	1	$14.50	$14.50
scalpel handles	Carolina	NP-62-6520	14	$4.15	$58.10
scalpel blades	Carolina	NP-62-6631	1	$28.25	$28.25
dialysis tubing	Carolina	NP-68-4204	1	$54.00	$54.00
					$1,277.10

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook North Department: Science Date: October 15, 2009

Name of proposed curricular change: **Honors Biology (Junior Level)**

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

Unified Lab Science is no longer offered to incoming freshmen; the department continues to write a physics-chemistry-biology (PCB) sequence for upper-level incoming freshman students to take advantage of their solid math skills and previous academic success. The physics course is in its second year of implementation; the chemistry course is in its first year of implementation. This sequence will run parallel to a biology-chemistry-physics sequence for honors, regular and Team levels. If successful, the need for a physics first sequence will be investigated for all honors, regular, and Team level students.

2. **Curriculum Planning Committee Membership**

a) List the members of the committee.

Joan Gallagher-Bolos, Marcel Grdinic, Bob LeBlanc, Bob Froehlich, Jean Witty, and Christine Woods.

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

This committee consists of two chemistry teachers, two physics teachers, and two biology teachers all of whom have an interest in implementing a three-year science sequence, physics-chemistry-biology. The committee members are in tune with current research in science education scope and sequence as well as instruction. Members of this committee wrote the physics course and will continue to write the chemistry and biology courses as much in tandem as possible. The representation from the three disciplines permits the design of curriculum that will allow students to make coherent, explicit, regular connections throughout their science courses—physics, chemistry, and biology. The teachers need a common thread as they write the curriculum; this thread will help teach students the mental and mechanical processing that is used in science. The resulting courses will be quite different from the existing courses by virtue of their close coordination.

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

Jean Witty and Christine Woods are the content specialists for the biology course. Both Jean and Christine were selected to participate in a PCB curriculum committee associated with Northwestern University. The goal of the select group of biology instructors is to design a new and innovative Biology Curriculum for a Physics-first science sequence. As part of this curriculum design work, Jean and Christine will work with researchers from Northwestern

University's School of Education and Social Policy as well as researchers from Northwestern University's Feinberg School of Medicine.

In addition, outside experts were researched and confided in prior to developing the freshmen level physics course. Below is an excerpt from the freshmen physics course proposal:

Since we have not found a course that matches the Physics First curriculum that would address the concerns above, we will need to utilize a number of resources. Fernand Brunschwig, Physics and Science Education at Empire State College in New York, has already expressed an interest in helping us write a textbook for use in our freshman class. We would like to contact Herb Thier of U of C, Berkeley. Thier is one of the foremost experts on science education and science education history. Thier was part of the science educational revolution in the 1960s and has kept abreast of successful and failed attempts at implementing meaningful high school science programs. We would like to visit Rex Rice of Clayton High School in suburban St. Louis in order to observe his teaching of a successful physics first course. We would also like to interview the students and teachers at his building. In addition we would like to visit area schools that have shifted to Physics First—New Trier, Northside College Prep, Walter Payton, Wheaton Academy, etc.—in order to collect information, positive and negative, that would be pertinent to our unique physics first course.

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

The need for change was identified prior to developing the freshmen level physics course. Below is an excerpt from the freshmen physics course proposal:

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

There is a need for a common science language in order to help promote useful understanding, which will remedy common misconceptions in science. Teaching the science processing skills is best done in physics. There is also a need to teach students foundational scientific principles that are introduced in physics and built upon in chemistry and biology, namely systems, energy and matter. Competent, traditional instruction does not nurture the language of science, nor does it lead to a true understanding of science content, particularly when the initial science experience is as complex as biology. There are a host of studies illustrating the misconceptions that students hold, even into their undergraduate and graduate studies. One study was done by Doug Mulford, Pepperdine University, who did a chemical concepts inventory at Purdue University. Students with an average of 2.2 years of chemistry could not answer basic physical science content questions. Vanessa Barker, University of London, wrote a second paper. Barker has compiled a list of specific areas where students demonstrably lack useful understanding in the sciences including states of matter, particle theory, changes of state, physical and chemical change, open and closed systems and bonding. An enormous body of research shows that many students aged 11-18 are likely to have misconceptions in these areas.

Essential questions in science will provide the foundation to this physics-chemistry-

biology sequence in order to nurture a common science language. The sequence itself, if written and implemented well, will help curb the continuing misconceptions and build understanding of scientific principles.

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

The mediocre results from the TIMMS exam administered here at GBN showed a deficient understanding of energy compared to students internationally. Our departmental energy concept inventory articulates the specific points of misunderstanding within these concepts. We have used this nationally with both universities and high schools and therefore have a comparative understanding of where we stand. We also have a longitudinal study—freshmen through seniors—illustrating that the misunderstandings show a disappointing level of improvement as students progress through our currently sequenced science program.

The Northfield Township Science Articulation Study identified the need for the Glenbrook North and South to offer the same core science courses to freshman, sophomores, and juniors. The three-year science sequence will expose students to physics, chemistry, and biology prior to the PSAE and ACT exams. In addition, the three-year sequence will correlate with concurrent math courses.

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

The national trend to move to physics first is evident in that over 250 high schools have made this transition over the past 5 years. It is supported by the NSTA (National Science Teachers' Association), the NSF (National Science Foundation), and the AAPT (American Association of Physics Teachers), along with many other credible research and academic institutions.

For instance, the NSF believes that Physics First will help students better understand the foundations of science and perhaps move into a science field in the future. With better understanding, subject matter becomes more meaningful, which can develop an appreciation and perhaps even a passion for a particular avenue of study. AAPT says that Physics First will build a stronger foundation in scientific knowledge and understanding. The AAPT listed the five greatest reasons for schools moving to a Physics First science sequence: 1) students tend to take more science courses, 2) the misconceptions are not as developed in ninth graders as they are for juniors, 3) the younger students are more eager to explore and learn in a lab setting, 4) the upper level courses can be more rigorous if the foundation is set correctly, 5) early adolescents can be successful learning algebra and physics concurrently.

Many leading science education leaders and scientists including Nobel Prize winning physicist Leon Lederman also support a move to Physics First. Leon Lederman stated that the integrity of the three core disciplines would be preserved with a correctly implemented physics first program.

Most physics first programs simply shuffle the order of science classes. We intend to

design a three-year science program to meet the learning issues mentioned above.

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.

Because Unified Laboratory Science is no longer offered, a core course is needed for the purpose of teaching basic science skills—designing experimentation, formulating questions, learning how to find the answers to those questions, critically assessing the data, etc. Freshman physics provides a better framework for teaching these ideas/concepts to be further developed in an honors chemistry course. In order to understand modern molecular biology and the biochemical processes in cells, students need a solid background in both physics and chemistry. The third core science course is biology. With a solid chemistry and physics foundation, students should more easily grasp physics- and chemistry-related topics in the junior level biology course.

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

Since Unified Lab Science will no longer be available to freshmen, the science department brainstormed possible sequence choices. There is no other alternative that would address the concerns mentioned above. Should the physics-chemistry-biology sequence be deemed successful, the department would investigate the need to shift to a physics-chemistry-biology sequence for all levels. Until deemed successful, the biology-chemistry-physics sequence will continue to run at the honors, regular and Team levels.

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

This proposal will not affect any other department with regards to enrollment.

In order to have a sequence of science courses that complement one another, physics must be taught first. The foundational scientific concepts taught in physics will remain as a thread through chemistry and then biology. Because biology courses are primarily biochemical in nature, a greater level of chemistry understanding will further support students enrolled in biology.

Additionally the renewed look at critical thinking means that our approach to teaching science, as described above, will benefit all students. They will learn how to evaluate claims in science and apply this skill to other areas, as well.

This series of course proposals (physics-chemistry-biology) will eliminate the placement gap identified through the Township Articulation Process between North and South; South offers an upper level physics-chemistry program for the top 5% of their incoming freshman.

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.

Initially, Honors Biology offered at the Junior level will be comprised of approximately 50-60 students (the equivalent of 2-3 sections).

b) Tentative Outline of Proposed Course

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

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

In-house professional development opportunities will need to be offered to train teachers, design and implement new curriculum, and assess the course.

Additional equipment items will be necessary (see attached budget)

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

Because this course is a two or three-section course, it may affect the master schedule for the building. In addition, students in this sequence will have similar math and science schedules for three years in addition to similar English and social studies schedules by default.

In addition to the proposed sequence (physics-chemistry-biology) being designed with coherent curriculum, the sequence will also practice several of the same teaching methodologies. Students will, therefore, experience similar expectations of keeping a scientific journal, lab write up expectations, and everyday learning experiences such as white boarding and the use of cooperative groups.

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

Because we will be creating a new course, significant administrative support will be required throughout the implementation. This fact alone is repeatedly emphasized through the ARISE project (American Renaissance in Science Education), in all AAPT sources and from the schools where physics first programs (physics-chemistry-biology) have been successfully implemented.

Summer curriculum projects will be needed to continue writing the curriculum. Subsequent summer curriculum projects will be required as teacher training is needed.

The committee will need to observe one another in order to continue to write a coherent physics, chemistry, biology program.

The committee anticipates a need to speak with leaders in the field. Some travel will be involved for interviews and observations.

Time for the committee members to train department members will be needed if/when the need for further implementation is warranted.

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?

Data collection in freshmen physics began during the fall of 2008. However, more expensive data collection began in the fall of 2009. This data will be the data used to evaluate the success of the courses. The sequence will be evaluated at the end of the three year cycle using the assessment tools outlined below.

Below is an expert from the freshmen physics course proposal:

The evaluation process is crucial in determining whether the proposed sequence will be used as the curricular foundation in the science department. Below is a brief list of the tools that will be used. They must be written/modified this summer, as we need to start collecting data next school year.

Adaptations of chemical and energy concept inventories will be used.
Pre- and post- qualitative attitudes-based surveys from department members will be administered.
Pre- and post- qualitative attitudes-based surveys from students in each class will be administered.
We will write our own authentic assessment tools for evaluating content mastery.
We will show pre- and post-scientific concept understanding through high school.
We will follow student enrollment in science courses.

We will also use these assessments to determine whether the pilot program has failed.

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

Indicators of success were identified in the freshmen physics course proposal. Below is an excerpt from the freshmen physics course proposal:

Once pre-test data is gathered as a baseline, post-test data will be compared over three semesters. If the data shows a significant improvement, the sequence will be considered a success. At that time, the need to offer physics to a larger freshmen population will be investigated, and if needed, implemented.

If student science enrollment continues to remain the same or increases, the sequence shift will be deemed successful as students are exposed to a greater variety of science courses.

PCB Biology 173
1st Quarter

Unit Name	Biochemistry	Cells
Class Periods	4	6
Concepts/Topics	• Acid, base, dissociation, aqueous, concentration, H+, OH-, buffer, pH, pH scale, solute, solvent • Energy (kinetic & potential) Fields • Homogenate, homeostasis • Characteristics of Enzymes • Enzymes versus catalysts • Lock & Key • Activation Energy • Factors that affect Enzymes Activity • Macromolecules elements, monomers, functions & examples of carbs, lipids, proteins, nucleic acids, polymers • Water Characteristics • Condensation versus hydrolysis • Organic Chemistry	• Microscope use/techniques Calculate field of view Estimate size of the magnified object • Cellular organelles cell membrane, cytoplasm, mitochondria, ribosome, ER, Golgi Apparatus, Lysosome, Nucleus, Nuclear Membrane, Chromatin, Chromosome, DNA, RNA, Cytoskeleton, Microfilaments, Microtubules, Centrosomes/Centrioles, Spindle Fibers, Cilium, Flagellum, Nucleolus, Cell Wall, Vacuole, Vesicle, Plastids (Chromo, Leuko & Chloroplast) • Plant versus animal cell • Prokaryote versus eukaryote • Compound versus Dissecting Microscope
Text Resource	Chapter 2 & 3	Chapter 4
Suggested Labs/Activities	• Catalyst Demonstration • pH lab • Enzyme Lab • Hair Chemistry Activity • Macromolecule Lab using indicators - Benedict's, Biuret, Iodine • Field Biology Experience - Visit 1(focus:pH testing (simple lab experiment utilizing biochemistry at a water site), site visit to expose students to field biology	• Cell Lab • Microscope Activity
Skills	• Lab Safety & Technique • Graphical Analysis • Design & Implement Lab Investigation • Creating Data Tables • Drawing Conclusions • Creating Graphs (line, pie, bar) • Quantitative Data Collection • Text Reading • Related-Article Reading • Note taking • Concept Mapping • Collaborative Group work • Peer Editing/Grading • Research Biology-related topics	• Lab Safety & Technique • Graphical Analysis • Creating Data Tables • Drawing Conclusions • Creating Graphs (line, pie, bar) • Quantitative Data Collection • Text Reading • Related-article Reading • Note taking • Concept Mapping • Collaborative Group work • Peer Editing/Grading • Informal Presentation • Venn Diagram • Microscope Use & techniques • Diagramming • Research Biology-related topics
State Standards	11A4c, 12A4b, 12B4a &4b, 13A4a-d & 5a-d	11A4c, 12A4a & c, 12B4a, 4b, 5a & 5b

PCB 173- 1st Quarter continued

Unit Name	Homeostasis & Transport	Photosynthesis & Respiration
Class Periods	4	5
Concepts/Topics	• Parts of the cell membrane - Structure & Function • Passive Transport Osmosis, Diffusion, and Facilitated Diffusion • Active Transport • Turgor Pressure • Plasmolysis • Cytolysis • Endocytosis & Exocytosis • Passage across membrane Semi permeable In relation to particle size In relation to charge In relation to lipid solubility • Relative Solutions Iso, Hypo, Hypertonic	• 1st Law of Thermodynamics • Energy Concept as it relates to Photosynthesis & Respiration (aerobic & anaerobic) • Trace the flow of energy through an ecosystem • Auto versus heterotrophs • Chemical reaction for Photosynthesis & Respiration • Chloroplast & Mitochondrion - structure & function • Light versus Dark reaction • Chemiosmosis • Electron Transport Chain • Role of pigments • Stomata - structure & function • Optimal conditions for photosynthesis • Adaptations as they relate to Photosynthesis • ATP-ADP Cycle (enzymes) • Electrolysis, Kreb's Cycle, & Electron Transport Chain • Role of enzymes • Metabolism • aerobic versus anaerobic • Relationship between photosynthesis & respiration • Chromotography Rf value
Text Resource	Chapter 5	Chapter 6 & 7
Suggested Labs/Activities	• Model of a Cell Membrane • Osmosis in Living Cells • Egg Lab • Celery Demo • Dialysis Tubing Lab • Diffusion through Membranes Lab (using Vernier Conductivity Probe)	• Plant Pigments – Paper Chromatography • Photosynthesis and Cellular Respiration Lab using Vernier probes • Cellular Respiration Lab (Goldfish vs. Elodea)
Skills	• Lab Safety & Technique • Graphical Analysis • Design & Implement Lab Investigation • Creating Data Tables • Drawing Conclusions • Creating Graphs (line, pie, bar) • Quantitative Data Collection • Text Reading • Related Article Reading • Note taking • Concept Mapping • Peer Editing/Grading • Informal Presentation • Venn Diagram • Interpreting Analogies • Microscope Use • Diagramming • Research Biology-related topics	• Lab Safety & Technique • Graphical Analysis • Creating Data Tables • Drawing Conclusions • Creating Graphs (line, pie, bar) • Quantitative Data Collection • Text Reading • Related-article Reading • Note taking • Concept Mapping • Collaborative Group work • Peer Editing/Grading • Informal Presentation • Venn Diagram • Microscope Use & techniques • Diagramming • Research Biology-related topics • Mathematical Manipulation
State Standards	11A4a-c & e, 5a-c & e, 12A4a-b & 5a, 12B4a,	11A4a-c & e, 5a-c & e, 12A4a-b & 5a, 12B4a,

PCB Biology 173
2nd Quarter

Unit Name	DNA, Protein Synthesis, Technology	Cell Reproduction
Class Periods	7	6
Concepts/Topics	• Nitrogen-base names & pairing • Structure of DNA • Replication process • Helicase, polymerase, ligase, primase • Mutations arising from errors • Maintenance of chromosomal numbers • Functions of DNA, mRNA, ribosomes in the process • Transcription, Translation • Amino acids, Triplet codons • Redundant triplet codons for amino acids • Reading triplet codon/amino acid chart • Leading strand, lagging strand, Okazaki fragments • Polymerase Chain Reaction, Recombinant DNA • DNA fingerprinting, Gel Electrophoresis, Plasmids/Vectors	• Cell division: asexual reproduction: growth, repair • Phase names and characteristics • Cell cycle G1, G2, S • Relation to cancer • Oncogenes, tumor suppressor genes, metastasis, DNA mutation, telomeres, telomerase • Carcinogens • Gamete formation • Haploid, diploid • Phases: names and functions • Mutations arising from meiosis • Genetic Diseases: Down syndrome, Klinefelter's syndrome, Cri Du Dhat syndome & Turner syndrome • Fertilzation • Sex determination
Text Resource	Chapter 10, 11, 12	Chapter 8
Suggested Labs/Activities	• Extracting DNA from fruit • DNA/RNA/protein simulation – Dry Lab • Creating a recombinant DNA • Rainbow Electrophoresis • Interactive Internet activities/online activities • Transformation Lab • Case Study of Genetically Modified Foods	• Onion root mitosis Lab • Meiosis Simulation Lab • Pop-it Beads – understanding the process • Magnets – understanding the process • Interactive Internet activities/online activities
Skills	• Lab safety & technique • Graphical analysis • Implement lab investigation • Creating data tables • Drawing conclusions • Quantitative data collection • Text reading • Related article reading • Note taking • Concept mapping • Cooperative group work • Presentation skills • Applying research to real-life problems • Qualitative data collection • Use of Internet	• Lab safety & technique • Writing skills • Use of internet • Graphical analysis • Creating data tables • Drawing conclusions • Creating graphs (line, pie, bar) • Quantitative data collection • Text reading • Related article reading • Note taking • Concept mapping • Cooperative group work • Applying research to real-life problems • Microscope use • Applying knowledge learned by using visual comparison
State Standards	11A4a-f, 12F4a, 13A4a, 13A4b-d, 13B4b-c	12A4b, 12A4a, 11A4a-f

2nd Quarter continued

Unit Name	Genetics	
Class Periods	6	
Concepts/Topics	Working knowledge of: • Gamete • Chromosome, Gene, Allele • Locus • Dominant, Recessive • Genotype, Phenotype • Homozygous (purebred), Heterozygous • Autosome, Sex Chromosome • X-Linked • Y-Linked • Incomplete dominance • Genetic counseling	Working knowledge of: • Complete dominance • Codominance • Monohybrid • Dihybrid • Probability • Test cross • P_1 & F_1 cross • F_1 & F_2 generation • Punnett square • Principle of dominance, Principle of independent assortment • Pedigree
Text Resource	Chapters 9	
Suggested Labs/Activities	• Green albino tobacco plants • Genetics lab • PTC pedigree lab • Probability activity – Chi Square Analysis	• Research Based Project - Genetic Disorders • Paternity Case Analysis - Review Gel Electrophoresis • Genetic Counseling Case Study • Fast Plants Genetics Studies • J. Craig Venter's book on the Human Genome Project
Skills	Be able to recognize and work the following types of genetic problems to determine probabilities and/or genotypic/phenotypic ratios: • Monohybrid crosses • Dihybrid crosses • Probability based on more than one event • Probability based on any order • Multiple allele problems • Sex determination problems • Complete dominance problems • Incomplete dominance forms • Codominance problems • Test cross problems • Sex-linked problems • Pedigree problems • Any combination of the above type problems	• Lab safety & technique • Graphical analysis • Design & implement lab investigation • Creating data tables • Drawing conclusions • Creating graphs (line, pie, bar) • Quantitative data collection • Text reading • Related article reading • Note taking • Concept mapping • Cooperative group work • Presentation skills • Applying research to real-life problems
State Standards	11.A.4a-f, 11.A.5a-e, 12.A.4a-c, 12.A.5b, 13.A.4b-c, 13.A.5a-c	

PCB Biology 173
3rd Quarter

Unit Name	Evolution	Circulatory/Respiratory Systems
Class Periods	4	5
Concepts/Topics	Working knowledge of: • Animal Diversity (including Classification both animals and plants) • Natural Selection • Hardy Weinberg Theory • Evolution of Populations • Variations in a population (Stabilizing, directional, disruptive selection) • Genetic Drift	Review: • Structure and functions of the circulatory and respiratory systems • Structure and function of the heart • Component of blood (plasma, platelets, RBC, WBC, and characteristics) • Breathing mechanisms Elaboration of: • Mechanisms of oxygen and carbon dioxide transport • Structure and function of blood vessels • Trace the flow of oxygenated and deoxygenated blood through the body • Breathing mechanisms
Text Resource	Chapters 13, 16, 17, 19	Chapters 22, 23
Suggested Labs/Activities	• Egyptian Papyrus Bird Activity • Evolution Case Study • Galapagos Finches Lab • Plant Diversity Lab • Animal Diversity Lab	• Blood typing simulation • EKG • Breathing lab • Spirometry demonstration • Circulatory System Case Study (Runner, diagnosis:mitral stenosis)
Skills	• Cladograms • Understanding and Making of Dichotomous Keys • Understanding of natural selection mechanisms • Hardy Weinberg problems • Lab safety & technique • Graphical analysis • Design & implement lab investigation • Creating data tables • Drawing conclusions • Creating graphs (line, pie, bar) • Quantitative data collection • Text reading • Related article reading • Note taking	• Lab safety & technique • Graphical analysis • Design & implement lab investigation • Creating data tables • Drawing conclusions • Creating graphs (line, pie, bar) • Quantitative data collection • Text reading • Related article reading • Note taking
State Standards	11.A 4a-f, 11.A. 5a-e, 12.A.4b	

PCB Biology 173
3rd Quarter continued

Unit Name	Digestive/Excretory Systems	Immune System	Nervous System/Senses
Class Periods	4	4	4
Concepts/Topics	Review: • Structure and function of the digestive system (alimentary canal and accessory organs) Elaboration of: • Enzymes and their role in digestion • Physical digestion vs. chemical digestion • Peristasis • Role of hormones in digestion • Digestion process • Structure and function of the excretory system • Structure and function of the urinary system • Structure and function of the kidney • Structure and function of the nephron • Process of filtration, secretion & reabsorption • Role of hormones in water conservation • Urine formation process	• Innate Defenses • Inflammatory system • Acquired Immunity • Antibodies • Antigens • Primary and Secondary Immune Response • Cell mediated Immunity • Humoral immunity • B cells • T cells • Immune System Disease	• Structure and function of the neuron • Structure and function of the brain (cerebrum, cerebellum and brain stem) • Central nervous system & its role • Peripheral nervous system & its role • Nerve impulse • Polarized, depolarized, repolarized state of the neuron • All or none law • Structures & functions of the eye and ear • Processing of the senses • Reflex arc • Synapse • Neurotransmitters • Communication between neurons • Role of receptors • Types and roles of neurons
Text Resource	Chapters 21, 25	Chapter 24	Chapters 28 - 29
Suggested Labs/Activities	• Kidney dialysis simulation • Urinalysis Lab • Digestive System Case Study (GI issues in a student, diagnosis: IBS)	• Infectious Diseases Lab • Case Study (WBC abnormalities, diagnosis:effects of long term benzene exposure)	• Reflex activity • Senses lab • Case Study (Disoriented former football player, diagnosis:vascular dementia)
Skills	• Lab safety & technique • Graphical analysis • Design & implement lab investigation • Creating data tables • Drawing conclusions • Quantitative data collection • Text reading • Related article reading • Note taking • Concept mapping • Microscope use	• Lab safety & technique • Graphical analysis • Design & implement lab investigation • Creating data tables • Drawing conclusions • Quantitative data collection • Text reading • Related article reading • Note taking • Concept mapping • Collaborative group work • Deductive Reasoning	• Lab safety & technique • Graphical analysis • Design & implement lab investigation • Creating data tables • Drawing conclusions • Quantitative data collection • Text reading • Related article reading • Note taking • Concept mapping • Collaborative group work
State Standards	11.A 4a-f, 11.A. 5a-e, 12.A.4b		

PCB Biology
4th Quarter

Unit Name	Pig Dissection	Plants	Ecology
Class Periods	4	7	8
Concepts/Topics	• Overview of Integumentary System • Identification of body structure & function • Cumulative unit of the body systems	Know about plant structures & functions: • Angiosperms vs. gymnosperms • Characteristics of roots, stems and leaves • Purpose of roots, stems and leaves • Structures & function of roots, stems & leaves (including diagrams) • Transpiration-cohesion theory • Pressure flow theory • Primary vs. secondary growth • Monocots vs. dicots in stems • The process of opening & closing stems • plant reproduction • Parts of a flower (including diagrams) • Monocots vs. dicots in flowers • Perfect vs. imperfect flowers • Pollen grain & ovule formation, Pollination, Double fertilization • Functions of fruits and seeds, Types of fruits, Structure of fruits & seeds (including diagrams) • Monocots vs. dicots in seeds • Seed dispersal, Seed germination, Types of sexual reproduction Know about plant responses • What are hormones • Types of hormones & their effects • How auxin works in tropisms • Types of tropisms • How photoperiodism helps the plant determine day lengths • Long day vs. short day vs. day neutral plants	• Identify the basic principles of ecology • Identify and understand the different level of interactions: biosphere, ecosystem, community, population and organism • Identify the different examples and common characteristics of biomes: focusing on terrestrial biomes • Identify terrestrial biomes on a map • Identify and understand the trends found in primary productivity in different ecosystems • Differentiate between an organism's habitat and niche • Differentiate between the different types of niches • Identify and understand the different relationship within a community: parasitism, mutualism, commensalisms, predation and competition • Identify and explain limiting factors, population growth and growth curves • Identify parts and stages of food chains, food webs and food pyramids • Be able to design a food web based on food chains • Identify and differentiate the types of succession found: bare rock, sand dune and pond/lake. Be sure to know the index species at each stage found in the specific examples of succession • Identify and understand the biogeochemical cycles: carbon/oxygen, water and nitrogen
Text Resource	Chapters 46, 48-51, Pig Dissection lab manual	Chapters 31-33	Chapters 34, 36-37
Suggested Labs/Activities	• Pig dissection • Digital Photography of Organs	• Stomate Lab • Transpiration Lab • Flower Dissection Lab	• Predator-prey lab • Field Biology Experience - Visit 2 (in visit 2, students will participate in hands on field work, as set up from what they've learned in ecology unit)
Skills	• Lab safety & technique • Drawing conclusions • Text reading • Related article reading • Note taking • Concept mapping • Collaborative group work • Practical lab skills	See previous quarters	See previous quarters
State Standards	11.A 4a-f, 11.A. 5a-e, 12.A.4b		14A.4b-d, 12A.4b, 12A.5a, 12B.4a-b, 5a & 5b, 13A.4c

PCB Biology Budget Request

Item	Code	Vendor	Cost	Quantity	
Oxygen Gas Sensor	O2-BTA	Vernier	$188.00	8	1504
Carbon Dioxide Gas Sensor	CO2-BTA	Vernier	$249.00	8	$1,992.00
BioChamber 250	BC-250	Vernier	$6.00	8	48
Gel Electrophoresis Chambers		BioRad	$377.50	4	$1,514.00
Gel Electrophoresis Power Pac		BioRad	$250.00	2	500
LabQuest	LABQ	Vernier	$329.00	8	2632
Double Buret Holder	WF-70-7342	Carolina	$37.50	8	300
Transparent Acrylic Buret	NP-73-8144	Carolina	$50.00	20	1000
Wisconsin Fast Plants	Various Codes	Carolina	$26.50	5	132.5
					9622.5

TO: Paul Pryma
Kris Frandson
ILT

FROM: Mary Rockrohr

RE: GBN Course Offering: Forensic Science 161 & 162

DATE: October 7, 2009

Course Description:

Forensic Science

Prerequisite:
Completion of biology and chemistry and completion of, or concurrent enrollment in, 3rd year of lab science.

Population:
11th & 12th graders

Credit:
0.5 Lab Science Credit

Duration:
1 semester

Course Description:

Forensic Science gives students the opportunity to use their scientific skills and knowledge in biology, chemistry and physics as they analyze crime scenes and formulate conclusions. Students will learn how to secure a crime scene, analyze the situation, collect evidence, perform appropriate tests, and formulate conclusions. They will present their findings in the form of written "police reports," and oral presentations in front of a "jury." Topics presented will relate to Biology (fingerprint analysis, analysis of blood and DNA, hair analysis, footprint casting), Chemistry (toxicology studies, fiber analysis), Physics (car accident reconstruction, blood spatter analysis, ballistics), and other disciplines such as Anthropology and Criminal Justice.

Tentative Course Outline:

See attached

Rationale:

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.

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 a Forensics course.

Currently, our elective program (non AP courses) consists of just one year-long lab-based course. Competitive universities prefer to see 4 years of lab-based science.

Forensic s 161 & 162 is currently offered at Glenbrook South High School (original course proposal attached)

Implications for the Proposed Change:

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 core science classes (Unified Lab Science, Biology, Chemistry, Physics). As a result, we do not expect a need for an increase in staffing.

Because Forensics relies on concepts from biology, chemistry, and physics, much of the needed lab equipment is already available. However, there will be an initial financial burden for additional pieces of equipment and a recurring cost for consumable supplies (see attached budget).

Unit Name	Unit 1: Introduction to Forensics and Forensic Anthropology	Unit 2: Crime Scene Investigation and Evidence Collection
Class Periods	3	2
Concepts/Topics	• Making Qualitative and Quantitative Observations • Brain Information Processing Patterns • Credibility of Eyewitnesses • Careers in Forensic Science • Literature Review of Sherlock Holmes • Forensic Anthropology/ Anatomy: Bone Formation, Characteristic Traits that Distinguish, Sex, Height, Race and Age.	• Locard's Principal of Exchange • Securing a Crime Scene • Processing a Crime Scene: Photographing, Documenting, Sketching, and Collecting Evidence.
Text Resource	Chapter 1 and Chapter 13	Chapter 2
Suggested Labs/Activities	• Introductory Case: Was Someone Stealing the Trees? • Intro to Crime Scene • Sherlock Bones: Identification of Skeletal Remains Lab Activity • Video: Nova The Perfect Corpse • Sherlock Holmes, *A Study in Scarlet*, Reading/Writing Assignment • One of the Following Guest Speaker(s): 1. Supervisor of Crime Scene Investigators 2. Scientist from Forensic Laboratory 3. State Attorney	• Introduction Case: JonBenet Ramsey Case • The Cafeteria Caper Introduction to Case, Process the Crime Scene and Collect Evidence
Skills	• Literature review. • Develop basic skills in observation, data collection and data analysis • Develop deductive reasoning skills to draw a conclusion	• Develop basic skills in observation, data collection and data analysis • Math • Photography • Sketching • Writing scientific reports
State Standards	11A, 12A (possibly 12B and 12E), 13A&B	11A, 13A&B

Text Book Recommendation: *Forensic Science: Fundamentals and Investigations* by Bertino
Publisher: South-Western, Cengage Learning

Unit Name	Unit 3: Processing Evidence: Indicators & Enzymes And Hair Analysis	Unit 4: DNA Fingerprinting and Blood Typing
Class Periods	3	5
Concepts/Topics	• Understand organic molecule properties, including enzyme function • Identify uses for chemical indicators • Understand the structure of hair and how it is analyzed in forensic investigations	• Identify and use various tests using blood components • Differentiate between presumptive and conclusive tests • Develop an understanding of the molecular basis of heredity (including chromosomes, DNA and genetic inheritance)
Text Resource	Chapter 3	Chapter 7 and 8
Suggested Labs/Activities	• The Cafeteria Caper: Test and Analyze the "Stomach Contents" That Was Collected at the Crime Scene. • The Cafeteria Caper: Test and Analyze the Hair Samples Collected from the Crime Scene.	• Introduction Case: DNA Fingerprinting and Family Relationships • The Cafeteria Caper: Test and Analyze Blood Samples from the Crime Scene: Presumptive Blood Testing, Blood Typing, Punnett Squares, Karyotype Analysis, DNA Profiling
Skills	• Learn how to use a ProScope. • Develop basic skills in observation, data collection and data analysis • Develop deductive reasoning skills as students synthesize several pieces of data to draw a conclusion • Writing scientific reports.	• Learn how to use PCR and DNA Electrophoresis. • Develop basic skills in observation, data collection and data analysis • Develop deductive reasoning skills as students synthesize several pieces of data to draw a conclusion • Present findings to an audience through written reports and oral presentations.
State Standards	11A, 12A, 12C, 13A&B	11A, 12A, 13A&B

Unit Name	Unit 5: Blood Spatter	Unit 6: Fingerprinting, Foot Casting, Handwriting and Tire Impressions
Class Periods	2	5
Concepts/Topics	• Blood spatter analysis to determine the angle of impact and origin of a sample of blood.	• The history of fingerprinting • The characteristics of fingerprints • Lifting/ Recovering and analyzing fingerprints • IAFIS • The characteristics of handwriting • The characteristics of foot impressions-individual versus class characterisitcs • Casting of a foot impression
Text Resource	Chapter 8	Chapter 6, 10 and 15
Suggested Labs/Activities	• Introduction Case: Blood Paints the Picture • Blood Spatter: Impact Angle • Blood Spatter: Point of Origin	• Introduction Case: Unaltered Identity • Lab Activity: Study Your Fingerprint • Forensic Impressions Lab Activity
Skills	• Develop understanding about the physics of motion • Develop geometry skills as they calculate the angle of impact and origin of the blood. • Develop basic skills in observation, data collection and data analysis • Develop deductive reasoning skills as students synthesize several pieces of data to draw a conclusion	• Recovering fingerprints • Casting foot impressions • Develop basic skills in observation, data collection and data analysis • Develop deductive reasoning skills as students synthesize several pieces of data to draw a conclusion • Present findings to an audience through written reports and oral presentations.
State Standards	11A, 12D, 13A &B	11A, 12A, 13A&B

Forensic Science
Semester Course Outline

Unit Name	Unit 8: Analysis of Drugs and Poisons	Unit 9: Final Crime Scene Investigation!
Class Periods	3	5
Concepts/Topics	• Chemical Identification • Presumptive Blood Analysis • Fingerprinting	• Apply the skills and knowledge from the semester to solve a crime.
Text Resource	Chapters 6, 8, 9	All Chapters
Suggested Labs/Activities	• Renters Beware	• Wards Murder Mystery Mayhem Lab • OR Wards' CSI Who Killed Henry Ward?
Skills	• Recovering fingerprints • Anayzing Flame Tests • Performing Presumptive blood tests • Develop basic skills in observation, data collection and data analysis • Develop deductive reasoning skills as students synthesize several pieces of data to draw a conclusion • Contribute effectively to a scientific community • Present findings to an audience through written reports and oral presentations.	• Review Skills developed throughout the course. • Develop basic skills in observation, data collection and data analysis • Develop deductive reasoning skills as students synthesize several pieces of data to draw a conclusion • Contribute effectively to a scientific community • Present findings to an audience through written reports and oral presentations.
State Standards	11A, 12A&C,13A &B	11A, 12A, 12C, 12D

Other Topics May Include:

1. Fiber Analysis
2. Ballistics: Identification and Comparison, Trajectory, Gun Powder Residue
3. Car Accidents: Calculation of Speed, Reconstruction of an Accident
4. Entomology: Estimating time of death using insects.
5. Botany: Identification of plant material at a crime scene.
6. Glass Anlysis
7. Tool Marks
8. Arson

Descriptions	Catolog #	Quantity	Base Price	Total Price
ID Tents with Cut-Out Scale	15 F 4620	1	62.5	62.5
Crime Scene Barrier Tape	15 F 5060	1	16.5	16.5
Ward's 6" Photo Rules- White	14 F 0812	27	0.99	26.73
Traffic sketching Template	15 F 0222	7	21.95	153.65
Ward's Fixed 90 degree Photo Rule -Metric	15 F 4613	7	6.25	43.75
Perfect Print Fingerprint Pad	15 F 0219	7	9.5	66.5
Magnetic Fingerprint Kit	36 F 6139	7	48.95	342.65
Red magnetic powder	37 F 5087	1	10.45	10.45
Mini Longwave UV Lamp 4W	29 F 3005	7	31.5	220.5
Fluorescent Viewing Goggles	15 F 3170	1	21.95	21.95
Portable Fuming Chamber	14 F 8380	1	195	195
Fuming Hot Plate	15 F 8095	1	20	20
Liquid Cyanoacrylate Glue	37 F 5080	1	8.5	8.5
Forensic Impressions Lab Activity	36 F 5907	1	213.95	213.95
Ward's Sherlock Bones: Identification of Skeletal Remains Lab Activity-Asian Female	36 F 6084	1	295	295
Ward's Sherlock Bones: Identification of Skeletal Remains Lab Activity-Caucasian Male	36 F 6082	1	295	295
Luminol Powder Concentrate with Spray Bottle	37 F 2340	1	9.95	9.95
Ward's Science Behind Ballistics and Firearms Lab Activity	36 F 6238	1	300	300
Ward's Phenolphthalein Blood Test Kit	36 F 6134	7	19.95	139.65
Ward's Simulated Blood Typing "Whodunit" Lab Activity	36 F 0021	1	41.95	41.95
Ward's Simulated Blood Typing "Whodunit" Lab Activity-Refill Kit	36 F 0038	1	28.95	28.95
Ward's Murder, Mystery, Mayhem Lab Activity	36F 6263	1	165	165
Ward's CSI: Who Killed Henry Ward Lab Activity	36 F 6244	1	325	325
Ward's CSI: Who Killed Henry Ward Lab Activity--Refill Kit	36 F 6244	1	89.95	89.95
Adhesive Evidence Labels- pkg of 100	15 F 5072	1	12.95	12.95
Hand held magnifying glasses	25 F 2001	1	9.95	9.95
Mag-Lite Flashlights	15 F 4002	7	36.5	255.5
Forceps	14 F 0585	14	8.45	118.3
Swab Applicators -pkg of 100	14 F 5502	1	10.5	10.5
Biohazard Bags- pkg of 100	18 F 1597	1	29	29
Video : The Perfect Corpse from Carolina	NP-49-440	1	21.5	21.5
Video: Forensic Science: A shred of Evidence	NP -49-440	1	153.95	153.95
Hemastix	15 F 4560	1	55.5	55.5
Consumables (annual: $200/section/year) This budget estimates 2 sections next year.		2	200	400
Total				4160.23

APPLICATION FOR NEW CURRICULAR OFFERING

School: Glenbrook North High School Department: Science Date: 12.November.2009

Name of proposed curricular change: Materials Science 163 and Materials Science 173

1. **Description** of curricular change.

   The progress of civilization is an integral part of the history of Man and his materials – the Stone Age, the Iron Age, and today's Age of Silicon. Materials determine the technologies that provide protection, communication, information, construction, mechanization, agriculture, energy, transportation, and health. This laboratory-based course will introduce students to the production, processing, behavior, selection, and uses of six classes of materials: metals, ceramics, polymers, composites, semiconductors, and biomaterials. Knowing why glass shatters, steel is tough, rubber stretches and recovers, nylon can be drawn, and how nano gold is different from bulk gold, makes possible the selection of materials for enormously different applications. Studying failures such as the Titanic sinking, bridges collapsing, or smaller failures like light bulbs burning out or clothing staining are important parts of this course. Special attention is given to nanoscale materials and devices because of their potential for defining the next generation of important materials and machines. A student generated design project using science and engineering principles will culminate this year long course.

2. **Curriculum Planning Committee Membership**

   A. Committee Membership

      Nathan A. Unterman and PCB team, as needed.

   B. Give the rationale for the membership of this committee.

      Nathan Unterman was on sabbatical during the 2008-2009 school year. During this time, Nathan completed coursework in materials science, research scientific literacies, collaborated with PCB teachers, and developed a coherent curriculum for a Materials Science Course.

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

      Dr. Greg Light, Dr. Denise Drane, Dr. Thomas Mason, Dr. R. P. H. Chang, Dr. Lincoln Lauhon, Dr. Kathleen Stair, Dr. Sarah Dugan, Dr. Matthew Hsu, Linda Odom, Dr. Derk Joester, Dr. Julie Nucci, Dr. George Bodner, Dr. Joseph Krajcik, Dr. James Pellegrino, Marcel Grdinic, Robert Froehlich, Joan Gallagher-Bolos, graduate students, and others have been consulted on various aspects of this course development. Curricular vitae can be obtained upon request. At this time there are no fees.

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

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

   Since materials science and nanoscience have become more important within the research community and is socially relevant within the media, it has become necessary to evaluate how well secondary science education is preparing students to study such topics. Although most current curricula at the secondary level do not explicitly include materials science, the National Center for Learning and Teaching Nanoscale Science and Engineering (NCLT), SRI International, and other groups [1,2] have identified the Big Ideas of nanoscience and materials science, and have begun to link the underlying concepts to current science education benchmarks[3,4]. Vanessa Barker, University of London, has compiled a list of specific areas where students demonstrably lack useful understanding in the sciences, including states of matter, particle theory, changes of state, physical and chemical change, open and closed systems, and bonding. An enormous body of research shows that many students aged 11-18 are likely to have misconceptions in these areas. As designed in the implemented parts of the PCB curricula (physics and chemistry, to date), many of these misconceptions are being systematically addressed. It is believed that coherent curricular design with sequenced courses leading to a materials science capstone course will nurture an improved understanding of a common science language and stress the interdisciplinary nature of all science concepts. This, in turn, will increase scientific literacy and support science education in higher education.

   With the advent of Physics-Chemistry-Biology (PCB) sequence of courses and the elimination of Unified Laboratory Science, a fourth full year laboratory course is needed to be added to the curriculum to unify our core science program by connecting the skills, dispositions, and knowledge in a capstone course.

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

   During the 2008-2009 school year, the science department developed, implemented, and analyzed data from a student survey on science electives. Students expressed interest in non-advanced placement, laboratory-based electives. Details of this survey are available upon request.

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

   When addressing materials science, nanoscience, and nanotechnology as part of public outreach, the National Science Foundation states, "The systematic control of matter at the nanoscale has the potential to yield revolutionary technologies for electronics, medicine, aeronautics, the environment, manufacturing, and homeland security. Because nanotechnology is expected to bring profound economic and social impacts over the coming decade, leadership in nanotechnology development will be crucial to future U.S. competitiveness in the global economy."[5] The National Science Foundation forecasts that by 2015, newly derived nano-based products and technologies will generate over two

million jobs worldwide, with estimated production costs approaching $1 trillion.[6] There is a clear need to assure students have familiarity with nano concepts to make intelligent decisions regarding the socioeconomic impact of this technology.

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 design of this fourth year laboratory science course carefully considers the Physics and Chemistry (PC) curricula[7]. (Please refer to accompanying electronic document.) In addition, a brief review of Biology was made[8]. Looking at the literacies addressed in these courses, a capstone Materials Science curriculum has been developed[9] to include science literacies[10] that create a more robust and complete science curriculum. Currently, our elective program (non-advanced placement courses) consists of just one year-long laboratory-based course. Materials Science will give students an additional choice in laboratory-based science.

   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 is considering other electives. These electives include forensic science and anatomy and physiology. These courses will be proposed for the 2010-2011 academic year.

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

      Since Materials Science was developed to compliment the PCB curriculum, it will specifically extend this sequence. For students in the Biology-Chemistry-Physics (BCP) sequence, there will be some overlap, as this (BCP) sequence has not been reviewed for coherence. Materials Science requires the completion of physics, chemistry, and biology, but not necessarily in that sequence.

      Although there will be similar engineering and materials themes paralleled in Applied Arts (metals, plastics, etc.), this course will be exploring materials from a science perspective with engineering applications rather than engineered materials. Materials science will complement the Applied Arts electives.

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 target student profile will range from Regular to Honor students interested in a fourth year laboratory science course who do not want to take an advanced placement level course. The class 163 (regular) is designed to meet the needs of a variety of learners. At the 173 (honor) level, the basic curricular design will be modified to include more

advanced laboratory activities with a higher level of analysis, greater graphical emphasis (particularly in phase diagrams), and use of online databases.

B. Provide a tentative outline of the proposed course or program.

The course outline[9] and detailed Concept Centered Design (CCD) document[11] includes Concepts, Claims, Evidence, Tasks, Instruction, Models, and Unpacking. Demonstrations and possible lab activities (over 80 of them)[12] are available upon request. A poster overview[13] has been designed to demonstrate how this curricular change fits into a PCB curricular base.

Literacies for Materials Science

The universe is predictable and "regular"

Conservation of Energy and the Laws of Thermodynamics

Matter is made of atoms

Electromagnetism

The properties of materials depend on the identity, arrangement, size, and binding of the atoms of which they are made.

Science is an ever-changing process where questions are answered by interpreting repeated measurements in a systematic investigation.

Waves and wave mechanics.

Technology Skills

Use spreadsheets to manipulate data and graph relationships.

Use appropriate data acquisition equipment for collection and analysis of measurements.

Locate, interact, and participate with course information utilizing various Internet-Based applications.

Course Outline

I. Introduction
   A. What is Materials Science vs. Materials Engineering
   B. Overview of Materials

C. Issues that impact materials selection and design

II. Crystalline Nature of Matter
    A. Bonding
        1. Types
        2. Electron structure
        3. Potential Energy versus Interatomic separation
        4. Force versus Interatomic separation
    B. Crystals
        1. Lattice, Unit cell
        2. FCC (CCP), BCC, HCP, simple cubic
        3. Packing
        4. Defects
    C. Amorphous solids
    D. Polymorphism

III. Electronic Applications
    A. Resistors
        1. Defects that cause resistance
            a. Interstitials (impurities, self interstitials, and substitutional)
            b. Vacancies
            c. Dislocations
            d. Grain boundaries
        2. Series
        3. Parallel
        4. Combination
    B. Doping, semiconductors, point defects
    C. Conduction bands
    D. PN circuits, diodes
    E. Dielectrics, capacitors
    F. Manufacturing integrated circuits (mask, vapor deposition, etc.)
    G. 555 timer

IV. Mechanical Properties of Metals
    A. Strength
        1. Bend (3 point test)
        2. Shear (twist)
        3. Tensile (pull)
        4. Compression (push)
    B. Stress – strain
        1. Yield Strength (0.2%)
        2. UTS, Failure
        3. Elastic deformation
        4. Plastic deformation
    C. Dislocations – putting them in, taking them out.
        1. Defects in deformations and transitions
        2. Brittle, ductile, etc. transitions
    D. Alloys, strengthening alloys, solid solution. (defects)
    E. Thermal effects (specific heats, phase diagrams, lever rule, lamella, etc)

V. Ceramics
    A. Structure
        1. Ionic bonding
        2. Stability
        3. Carbon
    B. Properties
        1. Brittle Fracture
        2. Stress-strain
    C. Defects
        1. Crystal
        2. Cracks
    D. Processing/Fabrication
        1. Sintering
            a. Preform
            b. Clays
            c. Melting, working, annealing
        2. Diffusion
        3. Strengthening and toughening
    E. Applications
        1. Electrical
        2. Magnetic
        3. Optical
        4. Sensors
        5. Abrasives
        6. Biomedical
        7. Concrete
        8. Catalysis

VI. Size-Dependent Properties
    A. Size and scale
    B. Surface area to volume ratio
    C. Bulk versus nanoscale properties
    D. Self assembly, dominant forces
    E. Nanofabrication
    F. Probes/tools AFM, MFM, SEM

VII. Polymers
    A. Polymer molecules
        1. Chemistry and molecular weight
        2. Molecular shape, structure, configurations
    B. Thermoplastic and thermosetting
    C. Copolymers
    D. Defects
    E. Mechanical behavior
    F. Deformation and strengthening
    G. Crystallization, melting, glass transitions
    H. Rubber, elastomers

I. Biologicals

VIII. Magnetic and Optical Properties
- A. Electrons and light
- B. Color without pigment
  1. Polarization
  2. Diffraction
  3. Thin film interference
- C. Refraction
  1. Snell's Law
  2. Fiber optics
  3. Lenses
     a. Concave
     b. Convex
- D. Photonics
- E. Curie Point

IX. Biomaterials

X. Composites

XI. Environmental and Social Issues
- A. Recycling
- B. New materials and biological interactions
- C. Natural resources
- D. Energy
- E. Water

XII. Design project

<u>FINAL ACTIVITY</u>

Design, testing of materials
Criteria: structure, processing, properties, performance

Ideas include: Concrete
Cosmic Ray Interaction

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

A. What are the implications of this proposed change for staffing, facilities, and budget?

In the past, regular and Team level students were scheduled for four years of science classes (unified science, biology, chemistry, physics). Since Unified Laboratory Science is no longer offered, if Materials Science is added, we do not anticipate changes in staffing after the first year of implementation.

Because Materials Science is expected to be a singleton in its first year of implementation, it may be difficult to schedule within the building Master Schedule.

Our current chemistry and biology facility will work well for this course. The current physics rooms will be minimally adequate, but not optimal.

The 173 (Honor) and 163 (Regular) levels can be offered within the same block. The instructor will allow for differentiation between levels. This is not the preferred setting for a multilevel course.

To fully set-up this course, an initial budget of $10,000 (see Figure 1) will be necessary for laboratory equipment and supplies, and can be phased in over two years, as the budget allows. Many of the models of crystals that are needed can be used to enhance the PCB Chemistry course. Ongoing expenses will include consumables, similar to our current chemistry curriculum.

Item category	Vendor	Estimated Costs
Crystal Models	Klinger Educational Products	$3,500
Reference Books	ASM, others	$500
Toaster Ovens	Local	$1,000
Consumables	Various	$2,500
New Equipment	Lego®, various	$2,500

Figure 1. Estimated expenditure for course equipment, based on enrollment of 45 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, there may be a decrease in the enrollment in existing electives. However, due to the prerequisites of this course, we do not believe that the electives will suffer a significant drop in enrollment.

There may be a query about the Materials Science offering replacing Principles of Applied Science and Technology. The central goals in Principles of Applied Science and Technology are the engineering design processes, specialized tools such as pneumatics, and the science underlying these processes such as laser optics. Materials Science is primarily

investigating the materials themselves with secondary emphasis on some fabrication processes. In the few parts of the courses that are similar, different sub-discipline approaches are taken. For example in circuitry, the Principles of Applied Science and Technology course is looking to design circuits that control robotics. In Materials Science, the emphasis will be on the component behavior of carbon in a resistor, or gallium arsenide in a diode. There is great value to both courses, and one does not supplant or duplicate the other.

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 to create handouts, tests, laboratory, and other instructional materials. Additionally, the allocation of storage space, and the organization of laboratory materials will be necessary.

Minimal professional leave may be required to allow involved teachers the ability to attend conferences to keep current with content in this rapidly changing field.

7. **Method** of evaluating the success of the proposal after implementation.

A. If the proposal is approved and implemented, how shall it be evaluated?

Pre and post testing using the Materials Science Concept Inventory (copy under review from University of Texas, Austin) and the Nanoscience Concept Inventory[14] will be used to evaluate the effectiveness of student learning. Additionally, laboratory exercises, homework, and summative and formative tests will be evaluated to track student understanding.

B. What specific outcomes shall indicate success of the implemented proposal?

Specific outcomes that will indicate success in the course will be at least a one standard deviation change in the inventories, and a 70% average proficiency of course benchmarks.

References

[1] Workshop hosted by University of Michigan and SRI International, June 14-16, 2006, in Menlo Park, CA

[2] Stevens, Shawn, Lee Ann Sutherland, Patricia Schank, and Joseph Krajcik, *The Big Ideas of Nanoscience*, http://hice.org/PDFs/Big_Ideas_of_Nanoscience-20feb07.pdf February 2007. Retrieved 15.September.2008.

[3] American Association for the Advancement of Science, *Benchmarks for Science Literacy*, New York: Oxford University Press, 1993.

[4] National Research Council, *National Science Education Standards*, Washington, DC: National Academy Press, 1996.

[5] http://www.nsf.gov/eng/general/publicdoc/nanotechnology.jsp 12.August.2009

[6] Roco, M.C., International Strategy for Nanotechnology Research and Development, *J. of Nanoparticle Research, Kluwer Academic Publ., Vol. 3, No. 5-6, pp. 353-360, 2001*

[7] NOTE ***Documents mentioned here and below are electronically available***. Document A: PCB Physics Course Outline and Document B: PCB Chemistry Course Outline.

[8] Document C: PCB Biology. This is the work of a biology committee headed by Mrs. Mary Rockrohr.

[9] Document D: PCB Materials Science

[10] Document E: Proposed Scientific Literacies

[11] Document F: CCD Detailed Design of Materials Science

[12] Document G: Index of Materials Science Activities

[13] Document H: Poster presented at the International Linear Collider Conference, November 2008.

[14] Document I: Nanoscience Concept Inventory

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook North Department: Social Studies Date: November 2, 2009

Name of proposed curricular change:

ADD: **World Religions**, semester elective, regular level

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

World Religions would be a one-semester course offered at the regular level, and will be open to sophomores, juniors, and seniors who have successfully completed the History of World Civilizations (HWC) class. This course will focus on exploration and analysis of comparative themes addressing world religious traditions.

2. **Curriculum Planning Committee Membership**

a) List the members of the committee:

Jerome Hoynes spearheaded the process, and consulted closely with Susan Corfield, Emily Horvath, Ana Peso & Robin Sheperd.

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

Jerome Hoynes is interested in teaching the course in its inaugural year and has significant expertise in the content area. Returning from a 2008-2009 school year sabbatical leave granted to examine the issue of religious literacy and its role in public education, Mr. Hoynes was encouraged to develop a new course in world religions for the Glenbrook North Social Studies Department.

Social Studies Teachers Sue Corfield and Emily Horvath bring content expertise as they have extensive experience teaching an "introduction to world religions" unit in the freshmen level History of World Civilizations (HWC) course. While Mrs. Corfield and Mrs. Horvath successfully address the subject of world religions within the HWC class, both feel that the addition of an elective offering would be beneficial. With so much content to cover in the HWC course, a new class devoted to exploring religious themes in history and their implications in contemporary society would afford our students an opportunity to more deeply explore a subject matter that is under-addressed in school curriculum.

Librarian Anna Peso has accompanied the HWC classes on the exploring world religions field trips and has been instrumental in developing a research project to help students better understand the religious themes they investigated while on the field trips. She has

ordered new materials adding to our collection of books about religion. Ms. Peso has agreed to continue working with Mr. Hoynes to develop new library research projects and activities useful in the new course.

GBN Social Studies Instructional Supervisor Robin Sheperd was involved in the preliminary work and data collection regarding the curricular change. Mrs. Sheperd reports that there is overwhelming support from members of the Social Studies Department to add a course offering in World Religions. At GBN, our Social Studies Department is asking for approval of a class that merges the best elements of Glenbrook South's long-standing and well-respected World Religions East & World Religions West courses, consolidating the class into a new thematically organized one-semester elective.

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

Our sister school Glenbrook South has some of the top world religions teachers in the country. GBS Social Studies Supervisor Terry Jozwik is nationally recognized as a leader in the field of teaching world religions in the public schools. Mr. Jozwik is pleased that GBN will be adding a World Religions course offering and has indicated his willingness to assist us as we introduce the class. Over the years, the Glenbrook South Social Studies Department has gathered a tremendous amount of resources helpful in teaching world religions. They have agreed to allow us access to all of their World Religions course files on the Glenbrook server.

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

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

Over the years, the Glenbrook North Social Studies Department has held several discussions regarding our elective program. We have agreed on the need to provide students with an opportunity to enrich their knowledge of world religions. The proposed World Religions option would combine elements of two electives offered at our sister school, Glenbrook South: World Religions East and World Religions West. Currently, Mr. Hoynes is piloting a World Religions semester class at the Glenbrook Evening School. Other high schools in the area, such as Stevenson, offer elective World Religions courses. Finally, our discussions pointed to the fact that such a course would enhance students understanding of the problems of the modern world as religion is often a pivotal influence in global affairs.

Additionally, in the fall of 2009-10 school year, the GBN Social Studies Department revisited its own goals and skill objectives (see below). The World Religions course serves several goals, including: awareness and understanding of the global community, understanding others' cultural heritage, working effectively in groups in society, lifelong learning and critical thinking. The course will also emphasize the following skills identified as target skills by our department: critical thinking, communication, and collaboration.

DEPARTMENT GOALS, Revised Fall 2009

- Prepare students for active, reflective thoughtful citizenship
    - Encourage democratic participation
    - Instill civic "habits of heart"
- Create student awareness and understanding of the global community
    - Understanding others' cultural heritage to operate effectively in society
- Develop student understanding of American heritage
    - Democracy
    - Rule of law
    - Multiculturalism and diversity of American society
- Enable students to work effectively with individuals and groups in society
- Inspire students to become lifelong learners and critical thinkers
    - Be thoughtful consumers of information
    - Foster awareness of identity and direction

DEPARTMENT SKILLS, Revised Fall 2009

- Critical thinking skills
    - Decision making: prepare students to make intelligent, informed decisions
    - Determining cause and effect relationships
    - Drawing conclusions
    - Making connections within and among curricula
    - Applying knowledge
    - Problem solving
    - Accessing and evaluating information in the information age
        - Evaluation of sources
        - Confirmation of validity
        - Establishment of point of view
        - Development of frames of reference and objectivity

- Communication skills: written and spoken word
    - Ensure students can effectively communication with others, person to person
    - Educate students about effective digital communication
    - Incorporate presentation skills into the social studies experience
- Collaboration skills
    - Working effectively with individuals and groups
    - Respecting cultural differences to collaborate effectively with people from diverse social and cultural backgrounds

b) Summarize opinions of experts (researchers, higher educational professionals, business people, parents, and community members) who speak to a need for change.
The National Council for the Social Studies Curriculum Standards fall under 12 themes. Our World Religions course directly meets the standards of five of those themes:

- Social studies programs should include experiences that provide for the study of culture and cultural diversity.
- Social studies programs should include experiences that provide the study of people, places, and environments.
- Social studies programs should include experiences that provide the study of individual development and identity.
- Social studies programs should include experiences that provide the study of interactions among individuals, groups, and institutions.
- Social studies programs should include experiences that provide the study of global connections and interdependence.

The Illinois State Learning Standards for Social Science highlight several key themes that will be emphasized in the World Religions course. Among them are: Solving Problems, Communicating, and Making Connections.

Additionally, the Partnership for 21st Century Skills Initiative highlights Global Awareness as one of its "21st Century Interdisciplinary Themes." Among the skills listed under this theme is the following: "Learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts."

Social Studies teacher Jerome Hoynes, who was awarded a 2008-2009 sabbatical leave, is scheduled to present a lecture and Q & A in February 2010 as a part of the "Sabbatical Showcase" in which he will share his findings concerning "religious literacy" and if approved, will outline the World Religions course to be introduced in the 2009-2010 school year. Mr. Hoynes will share reflections and insights from the many readings, seminars and conferences he attended that focused on teaching world religions in a public school. GBN Science Teacher Nathan Unterman was also awarded a 2008-2009 sabbatical leave with a theme of exploring content literacy. His focus of study investigated "materials science" and he has also proposed a new course that examines material science literacy.

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 World Religions curriculum (see Description in #5) will meet the needs expressed by both students and faculty in #3 above. The students enrolled in World Religions 161 will gain a deeper understanding of their fellow global citizens. This understanding will improve their abilities to empathize, collaborate and problem-solve as they prepare for their future.

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:

World Religions will provide a strong enrichment course for students who have taken History of World Civilizations, our foundation course. Students will have an opportunity to explore more deeply the religious traditions and religiously related modern issues facing the United States. In addition to enriching the HWC curriculum, World Religions will complement several other electives which deal with social issues, history, geography, and modern world problems: Sociology, International Relations, Social Studies Simulation (Arab-Israeli Conflict), Human Geography, Political Science, Comparative Global Issues and AP World History. The course, offered at the regular level, will be open to all students who have successfully completed HWC.

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:

World Religions has been designed for students who have completed the HWC course and are seeking an additional challenge in the study of world religious traditions. The course is designed for students who have been successful at both the honors and regular level in HWC. We anticipate offering one section of the course each semester; therefore the approximate size of the target group is 50-56 students in the initial year.

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

World Religions will examine essential religion-related themes that are increasingly important to understand in our interdependent world. The course will utilize a comparative thematic approach and will include opportunities for experiential education as well as analytical attempts to critically discuss current real-world issues involving religion. We want students to discover connections and conflicts between various religious groups and how that interplay often results in significant consequences in history, law, media, wars and politics. Student assessment will take the form of traditional objective tests, current events reports, writing assignments, as well as several individual and group projects.

Tentative Course Outline: World Religions

Textbook: <u>World Religions - A Voyage of Discovery</u> by Jeffrey Brodd. This textbook is currently used in the two World Religions (East & West) courses at Glenbrook South as well as at the Glenbrook Evening School. Because Glenbrook South is currently exploring other textbook options, we would like to pilot the Brodd book for one year before making a determination for textbook adoption. Although we will be consulting

the Glenbrook North Library for extensive research guidance and background materials, it will also be helpful to use this textbook as it helps provide a solid foundation of scholarly information. This book will be a resource for the class throughout the semester while we engage in reading actual primary sources and current articles.

Unit I- Introduction: Weeks 1-2

- Introduce the study of world religions and the cutting-edge notion of teaching "religious literacy" in public schools. What constitutes a religion? What is a religious movement? Why is it especially crucial now that our students learn about religions in a diverse world? Review the origins of the American constitutional tradition espousing "freedom of religion" and promoting religious liberty.
- Students will conduct interviews and write reflection papers exploring religious expression. As a class, we will review what we think we already know and brainstorm about questions we would like answered during the semester.
- Introduce the current events writing assignment as a regular component of the class. Students will choose a religion-related news story from anywhere around the world and we will discuss it as a class. Particular emphasis will be placed on uncovering the significance of the article they select; how and why do these stories matter to the world today? Tracking current events will make the students more attuned to what is happening about religion-related news stories that will help prepare them for the second half of the course as we examine comparative case studies.
- Explain the thematic approach to exploring religious literacy. As students investigate the various religious themes, they will grow in curiosity and ability to make comparisons that can contribute to progress or problems as they play out in practice. Illustrate how it will enhance our efforts to better understand and analyze religions connections within contemporary world issues.
- Identify and introduce the nineteen world religious traditions we will study:

    - Baha'i Faith
    - Buddhism
    - Christianity
    - Confucianism
    - Earth Traditions
    - Ethical Humanism
    - Hinduism
    - Islam
    - Jainism
    - Judaism
    - Latter-day Saints
    - New Religious Movements
    - Shinto
    - Sikhism
    - Taoism
    - Unitarian Universalism
    - Zoroastrianism

- Identify and explain the nine themes we will explore in the course:

  - History & Demographics
  - Symbols
  - Books & Holy Texts
  - Core Beliefs & Ethics
  - Architecture & Holy Sites
  - Organization & Leadership
  - Holidays & Celebrations
  - Art & Music
  - Life, Death & Beyond

- Organize students into "theme teams" (small groups of 2-3) that will be responsible for looking for evidence of their theme on the field trips. This small group will keep that assigned theme as their focus as we research in the library and meet with numerous guest speakers who will be visiting our classroom. At the conclusion of the Unit II- Exploration, each group will present their findings to the rest of the class from the information they have garnered from experiential education and library research.

Unit II- Exploration: Weeks 3-7

- Students will travel to various houses of worship in Chicago-land on a two-day field trip that allows them the opportunity to explore close up the spaces and meet representatives of the traditions.
- Show *Sacred Spaces* (30 minutes) video; discuss and protocol issues concerning visiting houses of worship. Examine the websites of the various places we will be visiting. Invite several students who have previously participated in the world religions field trips to speak to the class and help prepare them for the experience. Read the 2005 Northbrook Star article covering the world religions field trips.
- Prior to the trips, students will develop questions for each place we will visit. Following each day's field trip, students will write reflection papers detailing their reactions to the visits.
- Guest Speakers- invite representatives of groups to come to speak to the class.
- Comparative Religions Roundtable- host a special event for the school (open to other interested classes) featuring representatives of various traditions assembled in the GBN Little Theater. Focus of the roundtable is to answer student questions about each of the religions addressed in an inclusive format, allowing actual representatives of the religions to speak for themselves about what they truly believe, practice and promote. Please note that in all our years of experience hosting religious representatives, they always respect the commitment to "teach not preach"; we carefully consider whom we invite into the school and have never had a problem.
- Student Panel- Members of GBN's four student "religion-related clubs": Jewish Learning Club, Muslim Learning Club, Christian Fellowship and the Freethinkers Club will come together as a panel to field questions from the class and share their

own thoughts and experiences.

- Presentations of the "theme teams" about what they have discovered as a result of the exploration phase.

Unit III- Comparative Themes: Weeks 8-13

On the heels of the Exploration Unit, students will be eager to process and better understand what learning they have absorbed. As a class we will conduct an in-depth examination of the theme areas in an engaging manner, always keeping in mind the goal of uncovering factors that compare and contrast and speculating as to how that can then make a difference. How do these vast points of comparison sometimes generate harmony and tension? Students will keep a journal on this larger question throughout the semester.

Each of the nine theme areas will be fully explored, allowing students to piece together insights as we proceed. Over the years we have amassed an impressive collection of religious artifacts to show students. Another wonderful flexible feature will be our ability to collaborate with colleagues in other departments to demonstrate comparative religious foods. For instance, we intend to have a religions "food lab" day with our GBN Foods teachers having the students prepare items from various religious traditions. This collaborative opportunity would fit nicely into art, music, architecture, clothing, and dance instruction and could result in some amazing inter-departmental lessons. These lessons would encourage students to view connections across classes, perhaps inspiring more critical thinking about the applicability of what they are learning in school.

The following outline provides a sketch of the rich lessons that will emerge from each comparative theme:

1. History & Demographics
   - Origins
   - Founders
   - Growth patterns
   - Events in development
   - Geographic diversity
   - Membership data
   - Divisions and denominations

2. Symbols
   - Logos
   - Flags
   - Colors
   - Emblems
   - Garments

3. Books & Holy Texts
   - Scriptures

- Prayers
- Readings
- Services
- Languages
- Education

4. Core Beliefs & Ethics
    - Creeds
    - Doctrine
    - Sacraments
    - Rules
    - Expectations

5. Architecture & Holy Sites
    - Shrines, temples, cathedrals, etc.
    - Special places
    - Sacred space design elements
    - Building styles

6. Organization & Leadership
    - Structure
    - Decision-making
    - Clergy
    - Seminary training
    - Role of women

7. Holidays & Celebrations
    - Calendars
    - Holy days
    - Festivals
    - Events
    - Foods
    - Dance

8. Art & Music
    - Decorations
    - Use of human and animal images
    - Songs and choirs
    - Instruments
    - Bells, gongs, chimes, etc.

9. Life, Death & Beyond
    - Rituals
    - Baby ceremonies

- Marriage
- Funerals
- Views on the Afterlife

Unit IV- Analysis of Comparative Case Studies, Current Issues & Problems: Weeks 14-18
The last section of the course will require students to utilize all the knowledge they have gained in units one, two and three and apply that learning into an analysis of current issues involving religions. World religions students will engage in authentic dialogue and research to tackle comparative case studies that we will develop as the course unfolds.

Some potential topics include:

- ◊ Rights of a family not to pursue medical treatment for a child
- ◊ Eligibility of religious institutions for tax-exempt status
- ◊ Rise of religious fanaticism
- ◊ Involvement of gays and lesbians in church leadership
- ◊ Positions on abortion, stem-cell research and medical ethics
- ◊ Use of religious images in cartoons
- ◊ Ownership of church property if congregation splits
- ◊ Role of women
- ◊ Controversy over wearing of religious garments
- ◊ Treatment of burial grounds
- ◊ Separation of church and state issues
- ◊ Liability for financial responsibility in scandals
- ◊ Acceptance or rejection of conversion to a faith
- ◊ Dwindling or aging congregations
- ◊ positions on the acceptability of war
- ◊ Oath-taking restrictions and the *Pledge of Allegiance*
- ◊ Illinois' Moment of Silence law- implementation and suspension of practice
- ◊ Representations of religions in entertainment and negative media portrayals
- ◊ Permissibility of religious clubs meeting in public schools
- ◊ Constitutionality of the White House's Faith-based Initiative
- ◊ Involvement of religious groups in political activity

This is only an opening list of possible topics; we anticipate that students will add to or amend the topic options as they progress throughout the semester.

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

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

The addition of World Religions will create no additional staffing, facilities, or budget needs.

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

We anticipate that interested students from both regular and honors HWC will enroll in the course. We see the course enrollment as a regrouping of students who would have enrolled in other Social Studies electives; therefore, we do not anticipate this course having any impact on 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?

Mr. Hoynes will continue developing curriculum ideas, lesson plans and collecting items for the class throughout the 2009-2010 school year as he excitedly prepares to teach the course. In the spring of 2010 he will observe the World Religions classes (both East & West) at Glenbrook South as well as the World Religion course at Stevenson High School. Mr. Hoynes will attend relevant conferences to prepare for the course. Finally, he will conduct summer curriculum work to complete preparation of course materials for the inaugural semester.

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 course proposal and success, we will use enrollment numbers for the World Religions course and other Social Studies electives, and instructor and student feedback. We will also analyze the course's impact on student knowledge and preparedness in other Social Studies courses.

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

Continued enrollment in the course (we anticipate one section each semester in the first year, and perhaps two in subsequent years) will indicate student interest in the course. Additionally, the course's success can be measured by enhanced performance in future Social Studies courses in which students enroll. We believe students' knowledge and understanding of the content of the World Religions class will enhance their abilities in both core and elective Social Studies courses. Some students may also bring what they have learned in World Religions to other areas of the building, including the Foreign Language and English curricula.

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook North **Department:** World Languages **Date:** 11/02/09

Name of Proposed Curricular Change: French Conversation and Culture

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

"French Conversation and Culture" would be a one- or two-semester course that would be open to all students who have had four years of French at a regular or honors level. It will be a general elective focusing on French conversation, but will include listening, reading and some writing. Students will discuss current events, read stories, study movies, create travel itineraries, learn about French cooking, art, and music. They will also take cultural field trips. Students will also be required to work on an on-line course to improve their speaking, listening and reading skills in French. Assessments will be project based.

2. **Curricular planning committee membership:**

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

      Ann Koller, Nicole Abbott, MJ Springer

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

      The Instructional Supervisor and two French teachers are knowledgeable about the French program and the need for change in the upper level.

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

Currently we offer French 563, 573, and AP. Our first priority has always been to offer and run at least one section of one of these courses, preferably AP. Often however, these courses do not run because we only have a small number of students who elect to take French AP or French 563/573. Each year during registration, a limited number of students sign up for French 563/573 and AP. There are a few reasons why this is so. First, many students are taking challenging courses in their senior year and do not wish to add more to their load by taking another AP. The next option for these students would be French 563 or 573. French 573 is an honors level class that is as challenging as AP – but does not include the AP test. It is still a demanding course, however, and students who are not majoring or minoring in French often do not wish to pursue this class. Students who are eligible for French 563 are often the students who do not perform as well as honors students, and after four years, they are not anxious to take a course that has requisite grammar and writing components which so many of them find challenging. Also, due to schedule conflicts, students may not be able to fit two semesters of French in their schedules.

For two years now, we have been unable to run any of these classes. The result is a lot of frustration on the part of those students who truly are serious about French and must suddenly end their studies after their junior year.

4. Rationale for addressing the need through this curricular change:

Students and their parents ask what can be done to keep their child's skills current until they are in college. We can only suggest that the students take French 563, 573, or AP at GBS. Unfortunately, this is usually not possible due to schedule conflicts or the inconvenience of driving back and forth between GBN and GBS. If we were to offer an elective that could be taken for one or two semesters, and that involved conversation, culture, and a lab component to help hone skills, more regular students might be interested in continuing French, and we would have enough students to run a section. Additionally, students who initially signed up for AP would have another more flexible alternative.

5. Present and analyze data on student learning that point to a need for change:

The French program at GBN has declined over the last several years, as it has across the United States, According a recent survey, "World Language Teaching in U.S. Schools," administered by the Center for Applied Linguistics, the percentage of elementary schools that offer French decreased from 27% in 1997 to 11% in 2008. French programs in high schools continue to exist, but enrollment is also declining overall. At GBN, we have a fairly strong program for French 263-463, but we have not run a French 563, 573, or AP class for the last two years. Clearly, what we do currently offer at the upper levels does not meet the needs of our students.

The trend toward a decline in enrollment in upper level world language classes is not unique to French. As you can see in the table below, which reflects the number of students who registered to take Spanish and French 563/573 and AP in 2009, the number of French students who elected to continue is proportionate to the number of Spanish students who continue their studies:

Spanish Enrollment Total: 68%	#Students in AP: 20 (course is running)
	#Students in 563/573: 29 (course is running)
French Enrollment Total: 13%	#Students in AP: 10 (course not running)
	#Students in 563/573: 8 (course not running)

The first suggestion might be to combine French 563/573 with AP. Unfortunately, students who are at the 563 or 573 level do not wish to take a course that would be required to follow the AP Board approved French AP curriculum, which is very challenging. The second suggestion might be to move the French AP students down into the French 563/573 level. Two years ago we were able to run a section of French 563/573 by moving AP students down to regular. This past year, however, we did not have

enough regular students, and for various reasons, students who had signed up for French AP opted not to continue.

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

Parents are asking where to turn when there are no advanced classes for their students. Our current suggestions (GBS or online courses) are not feasible for most of our students.

7. **Description of the proposed change:**

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

      French Conversation and Culture would be offered on a semester basis, with the option of taking one or two semesters. Each semester would offer a different curriculum. The class would be open to any student who has successfully completed four years of high school French. The anticipated class size would be about 20 students.

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

      This course will be developed during the summer of 2009. It will be considered a general elective, and will focus on conversation, but will include listening, reading and some writing. Students will discuss current events, read stories, study movies, create travel itineraries, learn about French cooking, art, and music. They will also take cultural field trips. Students will also be required to work on an on-line course to keep up with all their skills in French. Assessments will be project based.

8. **If the committee considered other approaches to meeting the needs describe above, describe those alternatives and indicate why each alternative was rejected:**

The committee recognizes that attempts to combine students at upper levels as an approach to serve all students who want to continue their studies has not worked, for the reasons given above.

9. Implications of the proposed change:

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

There should be no changes to staffing. The addition of this course would essentially be a reorganization of existing courses to attract enough students from regular levels and some from honors to run an advanced level French conversation course.

This course is not intended to replace French AP or French 563/573. If there are sufficient numbers to run any of these courses, then they will be our top priority. In cases where we do not have the numbers, however, French Conversation and Culture would offer one additional and flexible opportunity for students to continue their studies in French at an advanced level.

There should be no impact on the budget, since we would actually be combining students from two to three classes to create one class.

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

The addition of this course should have no impact on other departments. We might get a few more students who would ordinarily not have continued in French. And some students might opt to take it only for one semester.

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

No additional resources in personnel will be needed. A 40-hour summer curriculum project will be needed before the course is taught.

10. 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 look at enrollment numbers as compared to previous years. We will study grade distributions and student performance data. We will also look at the performance tests from the on-line course students will take. Additionally, student and parent feedback will be evaluated.

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

Improved enrollment in French
Improved conversational skills
Continued proficiency in French
Progress in on-line assessments

APPLICATION FOR CURRICULAR CHANGE AND COURSE PROPOSAL

School: Glenbrook North Department: English Date: 11-12-09

Name of proposed curricular change: Foundations of Writing (ENR 14100)
GRADE: 9 LENGTH 1 Sem CREDIT: .5 GPA: All Subject

1. **Brief description** of the curricular change (name change for the course)

Title Change Rationale

English Tutorial is a support course offered to students in need of writing enrichment. In the past, the course was also responsible for helping students with their study strategies and organization skills as they transition into high school. As other programs emerged that supported students struggling to develop good study habits, the tutorial course was able to focus entirely on building a solid foundation of writing. This title change will more accurately describe the current course focus.

In addition, because of the year-long status and limited offering to students (the incoming freshmen are currently the only students offered the class), English Tutorial was not an option for some underclassman in need of writing support. Changing the elective offering to a one semester course, and offering to sophomores as well as freshmen, will give this course offering the flexibility it needs for students in need of writing support. Also, in response to the needs of the RtI initiative, this course provides an additional Tier 2 intervention.

2. **Curriculum Planning Committee Membership**

a) List the members of the committee.
- Virna Odiotti and Christina Tallungan

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

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

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

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.

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?

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook North and Glenbrook South **Department:** World Languages **Date:** 12/03/09

Name of proposed curricular change: Modern Hebrew 163, Modern Hebrew 263

1. Brief description of the curricular change:

Modern Hebrew 163 and Modern Hebrew 263 are yearlong courses that would be open to all students who normally take a foreign language. As with all other spoken modern languages, students will work on all four skills: listening, speaking, reading and writing. Emphasis will be placed on building a core vocabulary, acquainting students with essential grammatical structures, and developing near-native pronunciation. Additionally, students will study aspects of Israeli culture, geography, and history.

2. Curriculum Planning Committee Membership

a) List the members of the committee.
-Rosanne Williamson
-Cameron Muir
-John Finan
-Ann Koller
-Danita Fitch

Community and other resources: Linda Knier, - New Trier; Kathy Pino - Evanston; Lou Ann Erikson – Deerfield; Yaffa Berman of the Community Foundation for Jewish Education (Department of Hebrew Language Education)

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

The District 225 individuals named above are directly responsible for curriculum and instruction at both Glenbrook North and South High Schools. The department chairs from New Trier, Evanston, and Deerfield, who have over ten years of experience offering Modern Hebrew in their schools, were asked to share their experiences. Solomon Schechter and Chicagoland Jewish High School were also contacted to provide information regarding proficiency levels and placement. The group also consulted with the Community Foundation for Jewish Education that currently works with other public school districts that offer Modern Hebrew in providing professional development and other resources for teachers.

3. Need for the curricular change:

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

In October 2008, a group of community members approached the District 225 Board of Education to ask that Modern Hebrew be added to the world language offerings at both high schools in the district. The community members cited that surrounding districts have offered Modern Hebrew, that a large stakeholder population served by the district could more than support a minimum of 20 students annually, and that many of our students go to Israel and would like to be able to speak Hebrew with their counterparts.

The Board directed the administration to research the feasibility of this request.

As part of our research, in March, 2009, a World Languages survey was administered to all incoming freshmen, sophomores, and juniors. The survey was designed to determine student interest in languages that are not currently being offered at the Glenbrooks.

The results revealed that 98 students at Glenbrook North and 64 students at Glenbrook South expressed an interest in taking Modern Hebrew. The final report was presented to the Board, and it was recommended by the superintendent that a course proposal for Hebrew be submitted for consideration by the Board.

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

The primary reasons expressed by some community members and the head of the Department of Hebrew Language Education at the Community Foundation for Jewish Education were enhanced opportunities for our students as they travel to Israel and possibly enroll in university courses in Israel. The ability to converse in Modern Hebrew would improve the capacity of our students to work in these contexts. Besides this, students would be better prepared to participate in local cultural, religious or family events in the greater Chicago area.

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.

All students will have access to Modern Hebrew 163 and 263. Students will enrich their general studies not only with listening, speaking, reading and writing skills, but also an appreciation of the geography, history and culture of Israel. Our school will be able to provide the same opportunities to students as their peers in neighboring school districts such as Evanston, New Trier, Stevenson, Niles, Deerfield, and Highland Park.

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

The only other options available to students are courses taken at nearby community colleges such as Oakton, or classes available through religious organizations that have programs offered through an accredited institution. In both cases, the courses taken would appear on their District 225 transcripts. Parents and community members cited that it was difficult to enroll their children in outside Modern Hebrew programs, given the time constraints of the regular school day and extracurricular programs, as this presents logistical problems.

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

Modern Hebrew will be the first Middle Eastern language offered in the district. It may complement courses in social studies such as Comparative Global Issues, History of

World Civilizations, Political Science, World Geography, and World History.

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.

Modern Hebrew 163 and 263 will be open to all students of GBN and GBS. The class size will be approximately 26 students per section. A minimum of 20 students in either level would need to be eligible to take courses in Hebrew over two school years in order to feasibly run the class. This is the same standard applied to all world language courses that may experience lower student enrollments.

As in all other neighboring high schools, students with little or no exposure to Hebrew will enroll in level one (Modern Hebrew 163); students with a few years of study will take a placement test in April to determine if Modern Hebrew 263 would be more appropriate. New Trier, Evanston, and Deerfield High Schools all have their own unique placement tests. Chicagoland Jewish High School and Solomon Schechter use the NETA placement test, which is designed for Jewish day schools. Students scoring higher than the range for Modern Hebrew 263 would need to wait until the following year to take Modern Hebrew 363, if approved by the Board. At that time, the possibility of offering honors levels courses could also be explored.

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

The course outline will be developed over the summer following sufficient enrollment and the hiring of an instructor. A textbook will be selected in March. At New Trier, Evanston, and Highland Park, *Hebrew from Scratch Book One and Book Two* are used for the first two years of Hebrew. It is also the book of choice of the local organization of Hebrew teachers who meet during the school year for professional development. The World Language Departments at GBN and GBS will study detailed outlines of existing programs at area schools. The proposed course will be aligned with the National Standards for Foreign Languages.

6. Implications of the proposed change:

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

New Trier, Evanston, and Deerfield High Schools have reported that finding a qualified teacher will be difficult. These schools have been supportive in offering advice and information about potential candidates for the position. National Louis is currently the only university in Illinois offering a teacher preparation program for Modern Hebrew teachers. We would need to advertise for a teacher as soon as possible, as the interviewing process is extensive. Over the next five years, funds would need to be provided to ensure that the Hebrew teacher receives necessary professional development. Area world language supervisors have reported the need for ongoing training to ensure that our program is aligned to other world languages in the district as well as in other districts and also at the national level. We could also potentially need an extra classroom or two for departmental use, if we end up with an increased number of sections. An increased number of students may also result in

increased overall FTE. This FTE will likely be absorbed within the building allotment, but may result in higher class sizes in larger enrollment world languages such as Spanish or impact class size in other elective areas. The need for increased FTE will be monitored as the schools finalize staffing at the conclusion of student registration for 2010-2011 classes.

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

Based on our experience with the recent addition of Chinese, it is possible that a reduction in student enrollment will occur from all other languages, with little impact to any one language program. The lower enrollment languages, however, may gradually diminish because their loss would be proportionately greater. The heightened interest expressed by community members might result in an increased overall enrollment of students who are not currently taking a language, who may have been waiting to take Modern Hebrew, or who decide to take two languages.

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

An FTE increase above the current level may be needed to address this new course. The need for increased FTE will be monitored as the schools finalize staffing at the conclusion of student registration for 2010-2011 classes. A Hebrew teacher would need to be hired soon. If the teacher is not hired before April 19, then funds would need to be available to hire a qualified consulting teacher to procure, administer, and assess the placement tests in the spring of 2010. If a teacher is hired prior to April, then that teacher could administer the test and be compensated for his/her time.

After administering placement tests, student enrollment numbers will need to be studied at both GBN and GBS to ensure there are enough students to sustain the course over a period of at least two years, since, as with other world languages, we guarantee students will have at least two years of the same language. As stated in 5 a) above, a minimum of 20 students in either level would need to commit to take courses in Modern Hebrew over two school years. The teacher hired for this course would also need a summer curriculum project to prepare the Modern Hebrew 163 and 263 curricula. The standard summer curriculum project for new courses is forty hours per course. Additional funds would also need to be available to purchase the instructional materials needed to teach Modern Hebrew 163 and 263. Resources for curricular materials and summer curriculum projects will be absorbed by the building budgets.

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 look at enrollment figures, grade distributions, and student performance data. General student and parent feedback will also be evaluated. We will also compare results with standards for other world languages.

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

- Adequate proficiency in Modern Hebrew through performance assessments
- Stable enrollment in Modern Hebrew 163 and 263, resulting in the creation of a subsequent level
- Requests for a third year of Modern Hebrew language and culture

APPLICATION FOR CURRICULAR CHANGE AND COURSE PROPOSAL

School: Glenbrook North Department: Family and Consumer Sciences Date: 11-12-09

Name of proposed curricular change: Course Name change from Clothing/Fashion/Interior Design Studio 461 to Fashion Design Studio 461

1. **Brief description of the course name change**:

The current course entitled (Clothing/Fashion/Interior Design Studio 461) is to be re-named Fashion Design Studio 461. The "Fashion" aspect is to be separated from the Clothing/Interior Design component to foster a channeling of students specifically interested in the fashion industry.

The course is available for the student who has displayed special talent and commitment to the exploration of fashion. The student will pursue a direction of study that expands their creative skills in illustration, textiles, apparel and textile design techniques, and encourages historical and trend research in fashion development and marketing. This level is appropriate for the self-motivated and mature student.

2. **Curriculum Planning Committee Membership**

a) List the members of the committee.
- Kathy Mitchem

b) Kathy is the primary teacher of this course and has expertise with the advance clothing/fashion design student.

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

b) The name change will more accurately reflect the curricular content of the course and better sequence the courses necessary for students interested in the fashion industry field of study.

To: Michael Riggle; Rosanne Williamson
From: Cameron Muir
Cc: Brian Wegley
Re: New Course Proposals
Date: December 18, 2009

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	Need	Impact	Estimated Course Costs
World Language	Modern Hebrew 163	New Course	This course would provide the opportunity for students to work on listening, speaking, and reading and writing this language. The course will also allow students to study aspect of Israeli culture, geography, and history.	New staff members would need to be hired who have the appropriate skills to teach Hebrew. Potential of 0.2 to 0.4 FTE may be required. It may impact other language enrollments.	Cost of Textbook and summer project
World Language	Modern Hebrew 263	New Course	This course would continue the learning offered in the first year of this sequence, but also provide placement in a course commensurate with the skill level of the student attained from previous experiences.	New staff members would need to be hired who have the appropriate skills to teach Hebrew. Potential of 0.2 to 0.4 FTE may be required. It may impact other language enrollments.	Cost of textbook and summer project
World Language	Mandarin Chinese 363/373	New Course	We would like to offer students a third year of Mandarin Chinese language and culture upon completion of Mandarin Chinese 263and 273.	The third year Mandarin Chinese curriculum will allow students to continue their learning from previous two years.	Cost of textbook and summer project
English	Composition, Language and Literature	New Course	This course will fill the need to provide a mainstream English course for English language learners (ELLs) as they continue to acquire the proficiency necessary to successfully enroll in mainstream grade level English classes.	The current Transitional English classes will be somewhat reduced in size due to this state mandate. This will not be determined until the summer, forcing revision to student course schedules that were determined in March.	Cost of text materials and summer project to develop curriculum
English	Honors Advanced Radio Production	New Course	The proposed course would provide a structure for those students who are willing and skilled to take on both responsibilities of production and station management. This course would serve as a bridge to college and professional level broadcasting opportunities.	This will provide credit to students commensurate with the level currently being demonstrated by some students. No changes to course schedules or staffing will occur.	None
Business	Internship Program	New Course	The Internship Program is a 75 hour job-shadowing program that will help students focus on their passions and define or refine their college major and career goals.	Any change in staffing will be absorbed within the building's allocation.	Allocation of time during summer to build and maintain community internship contacts.

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook North and Glenbrook South **Department:** World Languages **Date:** 12/03/09

Name of proposed curricular change: Modern Hebrew 163, Modern Hebrew 263

1. Brief description of the curricular change:

Modern Hebrew 163 and Modern Hebrew 263 are yearlong courses that would be open to all students who normally take a foreign language. As with all other spoken modern languages, students will work on all four skills: listening, speaking, reading and writing. Emphasis will be placed on building a core vocabulary, acquainting students with essential grammatical structures, and developing near-native pronunciation. Additionally, students will study aspects of Israeli culture, geography, and history.

2. Curriculum Planning Committee Membership

a) List the members of the committee.
-Rosanne Williamson
-Cameron Muir
-John Finan
-Ann Koller
-Danita Fitch

Community and other resources: Linda Knier, - New Trier; Kathy Pino - Evanston; Lou Ann Erikson – Deerfield; Yaffa Berman of the Community Foundation for Jewish Education (Department of Hebrew Language Education)

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

The District 225 individuals named above are directly responsible for curriculum and instruction at both Glenbrook North and South High Schools. The department chairs from New Trier, Evanston, and Deerfield, who have over ten years of experience offering Modern Hebrew in their schools, were asked to share their experiences. Solomon Schechter and Chicagoland Jewish High School were also contacted to provide information regarding proficiency levels and placement. The group also consulted with the Community Foundation for Jewish Education that currently works with other public school districts that offer Modern Hebrew in providing professional development and other resources for teachers.

3. Need for the curricular change:

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

In October 2008, a group of community members approached the District 225 Board of Education to ask that Modern Hebrew be added to the world language offerings at both high schools in the district. The community members cited that surrounding districts have offered Modern Hebrew, that a large stakeholder population served by the district could

more than support a minimum of 20 students annually, and that many of our students go to Israel and would like to be able to speak Hebrew with their counterparts.

The Board directed the administration to research the feasibility of this request.

As part of our research, in March, 2009, a World Languages survey was administered to all incoming freshmen, sophomores, and juniors. The survey was designed to determine student interest in languages that are not currently being offered at the Glenbrooks.

The results revealed that 98 students at Glenbrook North and 64 students at Glenbrook South expressed an interest in taking Modern Hebrew. The final report was presented to the Board, and it was recommended by the superintendent that a course proposal for Hebrew be submitted for consideration by the Board.

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

The primary reasons expressed by some community members and the head of the Department of Hebrew Language Education at the Community Foundation for Jewish Education were enhanced opportunities for our students as they travel to Israel and possibly enroll in university courses in Israel. The ability to converse in Modern Hebrew would improve the capacity of our students to work in these contexts. Besides this, students would be better prepared to participate in local cultural, religious or family events in the greater Chicago area.

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.

All students will have access to Modern Hebrew 163 and 263. Students will enrich their general studies not only with listening, speaking, reading and writing skills, but also an appreciation of the geography, history and culture of Israel. Our school will be able to provide the same opportunities to students as their peers in neighboring school districts such as Evanston, New Trier, Stevenson, Niles, Deerfield, and Highland Park.

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

The only other options available to students are courses taken at nearby community colleges such as Oakton, or classes available through religious organizations that have programs offered through an accredited institution. In both cases, the courses taken would appear on their District 225 transcripts. Parents and community members cited that it was difficult to enroll their children in outside Modern Hebrew programs, given the time constraints of the regular school day and extracurricular programs, as this presents logistical problems.

c) Delineate the ways in which this curriculum proposal, if implemented, shall complement

other courses in the department and the school.

Modern Hebrew will be the first Middle Eastern language offered in the district. It may complement courses in social studies such as Comparative Global Issues, History of World Civilizations, Political Science, World Geography, and World History.

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.

Modern Hebrew 163 and 263 will be open to all students of GBN and GBS. The class size will be approximately 26 students per section. A minimum of 20 students in either level would need to be eligible to take courses in Hebrew over two school years in order to feasibly run the class. This is the same standard applied to all world language courses that may experience lower student enrollments.

As in all other neighboring high schools, students with little or no exposure to Hebrew will enroll in level one (Modern Hebrew 163); students with a few years of study will take a placement test in April to determine if Modern Hebrew 263 would be more appropriate. New Trier, Evanston, and Deerfield High Schools all have their own unique placement tests. Chicagoland Jewish High School and Solomon Schechter use the NETA placement test, which is designed for Jewish day schools. Students scoring higher than the range for Modern Hebrew 263 would need to wait until the following year to take Modern Hebrew 363, if approved by the Board. At that time, the possibility of offering honors levels courses could also be explored.

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

The course outline will be developed over the summer following sufficient enrollment and the hiring of an instructor. A textbook will be selected in March. At New Trier, Evanston, and Highland Park, *Hebrew from Scratch Book One and Book Two* are used for the first two years of Hebrew. It is also the book of choice of the local organization of Hebrew teachers who meet during the school year for professional development. The World Language Departments at GBN and GBS will study detailed outlines of existing programs at area schools. The proposed course will be aligned with the National Standards for Foreign Languages.

6. Implications of the proposed change:

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

New Trier, Evanston, and Deerfield High Schools have reported that finding a qualified teacher will be difficult. These schools have been supportive in offering advice and information about potential candidates for the position. National Louis is currently the only university in Illinois offering a teacher preparation program for Modern Hebrew teachers. We would need to advertise for a teacher as soon as possible, as the interviewing process is extensive. Over the next five years, funds

would need to be provided to ensure that the Hebrew teacher receives necessary professional development. Area world language supervisors have reported the need for ongoing training to ensure that our program is aligned to other world languages in the district as well as in other districts and also at the national level. We could also potentially need an extra classroom or two for departmental use, if we end up with an increased number of sections. An increased number of students may also result in increased overall FTE. This FTE will likely be absorbed within the building allotment, but may result in higher class sizes in larger enrollment world languages such as Spanish or impact class size in other elective areas. The need for increased FTE will be monitored as the schools finalize staffing at the conclusion of student registration for 2010-2011 classes.

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

Based on our experience with the recent addition of Chinese, it is possible that a reduction in student enrollment will occur from all other languages, with little impact to any one language program. The lower enrollment languages, however, may gradually diminish because their loss would be proportionately greater. The heightened interest expressed by community members might result in an increased overall enrollment of students who are not currently taking a language, who may have been waiting to take Modern Hebrew, or who decide to take two languages.

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

An FTE increase above the current level may be needed to address this new course. The need for increased FTE will be monitored as the schools finalize staffing at the conclusion of student registration for 2010-2011 classes. A Hebrew teacher would need to be hired soon. If the teacher is not hired before April 19, then funds would need to be available to hire a qualified consulting teacher to procure, administer, and assess the placement tests in the spring of 2010. If a teacher is hired prior to April, then that teacher could administer the test and be compensated for his/her time.

After administering placement tests, student enrollment numbers will need to be studied at both GBN and GBS to ensure there are enough students to sustain the course over a period of at least two years, since, as with other world languages, we guarantee students will have at least two years of the same language. As stated in 5 a) above, a minimum of 20 students in either level would need to commit to take courses in Modern Hebrew over two school years. The teacher hired for this course would also need a summer curriculum project to prepare the Modern Hebrew 163 and 263 curricula. The standard summer curriculum project for new courses is forty hours per course. Additional funds would also need to be available to purchase the instructional materials needed to teach Modern Hebrew 163 and 263. Resources for curricular materials and summer curriculum projects will be absorbed by the building budgets.

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 look at enrollment figures, grade distributions, and student performance data. General student and parent feedback will also be evaluated. We will also compare results with standards for other world languages.

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

- Adequate proficiency in Modern Hebrew through performance assessments
- Stable enrollment in Modern Hebrew 163 and 263, resulting in the creation of a subsequent level
- Requests for a third year of Modern Hebrew language and culture

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook South **Department:** World Languages **Date:** 11/06/09

Name of proposed curricular change: Mandarin Chinese 363/373

1. **Brief description of the curricular change:** We would like to offer students a third year of Mandarin Chinese language and culture upon completion of Mandarin Chinese 263/273. 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.

   Wanyin Chou- 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.

   Wanyin Chou is the current Mandarin Chinese teacher, and would be developing the third 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 263/273 are progressing at a satisfactory rate. They will be prepared for a third 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 bringing our students one step closer to meeting 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.[1] 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.[2]

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 third year Mandarin Chinese curriculum will allow students to continue their learning from the second 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.

There are 34 students currently enrolled in Mandarin Chinese 263/273, however 12 of them are seniors and therefore would not be continuing. There are 22 potential candidates for the proposed class.

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

The outline of the third 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 need for an additional 0.2 FTE for one section of Mandarin Chinese 363/373. 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.

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 third year course. Sumer 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 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 2011-2012 school year will be a measure of success.

---

[1] Ethnologue: Languages of the World, 15th ed. Copyright ©2005–2009 SIL International

[2] 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:** *English, ELL, Broadcasting* **Date:** *11/03/09*

Name of proposed curricular change: Composition, Language and Literature

1. **Brief description of the curricular change:** *In anticipation of the change in state mandates regarding ACCESS Test cut scores for ELL students, a group of students currently served through the ELL Program, will be forced to exit the program. While these students will have attained the new minimum ACCESS cut scores on the test, their overall language proficiency will not be adequately developed for them to successfully move into full mainstream grade level English classes due to the rigor of Glenbrook mainstream curricula. This course would fill the need to provide a mainstream English course for English language learners (ELLs) as they continue to acquire the proficiency necessary to successfully enroll in mainstream grade level English classes.*

2. **Curriculum Planning Committee Membership**

   a) List the members of the committee.

   Sue Levine-Kelley, Instructional Supervisor of English, ELL, Broadcasting Department
   Karen LeBlanc, ELL Coordinator
   ELL teachers: Hillary Bullock, Cheryl Hope, Judy Libman, Mina Moon, Veronica Reyes, Lauren Sutherlin

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

   The teachers listed are the individuals who teach ELL students at all levels every day and who willingly participated in this effort and offered invaluable insights into the needs of the students and the issues to be considered. The ELL coordinator is charged with facilitating the ongoing curricular work related to second language learners, while ensuring that the TBE/TPI Program conforms to all state mandates related to the education of LEP students. The Instructional Supervisor of English, ELL , Broadcasting is not only charged with overseeing all programs within her department, but also has extensive background regarding second language acquisition which enriches her insights and understanding to better address the issues at hand. The combined wisdom of all of these individuals allowed for in depth consideration of the implications of the state mandate, while keeping the focus on the needs of our students.

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

   Not applicable.

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

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

Prior to the October vote by ISBE, LEP students were deemed eligible to exit from ELL programs once they attained a minimum composite score of 4.0 on the annual ACCESS Test for ELLs and met locally determined exit criteria. Due to the rigor of mainstream programs in our area, the Glenbrooks, as well as the sender schools in our township, had determined that a 5.0 or high composite score along with a solid literacy subscore and ELL teacher input/recommendations formed the basis of our local exit criteria. At GBS, we have offered a complete program for second language learners. A key indicator of mainstream readiness has been the successful completion of our transitional classes, Transitional English or Transitional English Studies. Achieving these criteria has served us well in determining a student's ability to meet the demands of transitioning out of ELL support. Exiting those who had merely achieved the 4.0 former state minimum score would certainly not have served the needs of our ELL students. Even with the proficiency levels indicated by achievement of all of our local criteria, second language students have faced many challenges in their mainstream English placements due to the scope and comprehensive nature of the GBS English program, and the relatively short time these students have had to study English.

The new state mandate will now require that a student achieve a 4.8 composite score and a 4.2 literacy subscore on ACCESS in order to exit. These higher scores, however, are now designated as MANDATORY cut scores which will force a student to exit ELL services upon attaining them. Additional local discretionary criteria are now prohibited. Without a new course available to students who will be forced to exit from the ELL Program the school year following receipt of these scores, their chances of successful transition to mainstream will be greatly jeopardized. Rather than using test results as one of a variety of indicators of student progress and preparedness for exiting program support, students who do well on the ACCESS Test will be forced into a full mainstream program regardless of their English proficiency levels as demonstrated in their daily ELL classes and their overall academic performance.

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.

The students recommended for this new English course will not be served through any ELL or "LA" ("Language assisted") content classes that are part of the TBE/TPI Program (Transitional Bilingual Education/Transitional Program of Instruction) offered at GBS. At the same time, the course will offer students the opportunity to continue to develop English language proficiency in a mainstream setting which recognizes and addresses their unique language learning needs as non-native English speakers. In doing so, this new course will focus on the continued development of students' writing skills, the expansion of advanced vocabulary, the enhancement of their reading strategies for close analytical reading of literature as well as non-fiction, and the ongoing improvement of language use in challenging contextual situations. All of the learning goals will be aligned to those which form the basis of grade level mainstream English programs, and curricular materials will be drawn from other mainstream classes, particularly at the freshman and sophomore level.

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

Implementing the new state mandates regarding ACCESS exit scores without providing for the curricular needs of these non-native speakers would not only put them at a great disadvantage, but it would also put added demands on teachers who would be faced with having second language learners with very unique learning needs added to their mainstream classes prior to the students being prepared to meet the challenges of that placement.

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

Following completion of this course, second language students will be much better prepared to face the demands of moving into appropriate mainstream English classes since they will have had the opportunity to gain more background on English language arts concepts and to further develop the skills necessary to successfully participate in classes with their native English speaking peers

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 new class is designed for bilingual freshman through junior students who will benefit from this unique English language arts offering. It is expected that this group will involve approximately 14-18 students per year.

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

Since the vote to implement this new change occurred on October 30, 2009, there has not yet been time to develop the complete course outline. An initial outline is attached,

and it will be finalized following additional work by English/ELL teachers and the ELL Coordinator.

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

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

This course will require 0.2 additional English FTE.

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

The Transitional English classes will be somewhat reduced in size due to this state mandate. A huge consideration for English as well as other departments, however, is that ACCESS Test scores are not released by the state until approximately June 1 each year. Therefore, ELL students will be recommended for classes in February and March as in past years, but the schedules of the more proficient students will be tentative pending notification of ACCESS Test results. Schedules will need to be revised for those students who are forced to exit the ELL Program based on their literacy subscores and overall composite scores.

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

A summer project will be required to develop the specific curriculum of this course.

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?

The new course will be evaluated based on the performance of the students enrolled and their success in subsequent mainstream English offerings.

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

The academic performance of students who move from this new class into a variety of mainstream English classes at various levels will indicate the success of this course.

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook South **Department:** Radio Broadcasting/English **Date:** 11/4/2009

Name of proposed curricular change: Honors Advanced Radio Production

1. **Brief description of the curricular change:**
Currently, Advanced Radio Production requires learners to plan, develop, and produce professional-quality radio productions (broadcast journalism). More experienced students also are given the responsibilities associated with station operation of the district station, WGBK 88.5 FM. The proposed Honors Advanced Radio would provide a structure (clear responsibilities for station management and consequential credit attainment) for those students who are willing and skilled to take on both responsibilities of production and station management.

   Students will make content decisions, manage staff production deadlines, mentor staff members, and will learn a variety of organizational and management techniques to assist them in working in professional radio stations. Honors Advanced Radio Broadcasting is the culminating course in the Radio Broadcasting program at Glenbrook South and serves as a bridge to college- and professional-level broadcasting opportunities.

2. **Curriculum Planning Committee Membership**

   a) List the members of the committee.

      (2a.1) Daniel Oswald, Teacher

      (2b.1) Sue Levine-Kelley, Departmental Instructional Supervisor

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

      (2b.1) Daniel Oswald is the teacher for the GBS Radio Broadcasting program. He will be the teacher who invites students to apply for the honors level course and he will be their direct supervisor.

      (2b.2) Ms. Levine-Kelley is the supervisor for the Radio and Television programs and Glenbrook South.

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

      (2c.1) No outside expertise requested. Expert expertise is regularly sought as part of the Radio Program's ongoing formative assessment process.

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

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

change.

(3b.1) A review of current broadcasting industry standards and review of college broadcasting program requirements demonstrates the need for greater production responsibilities in Advanced Radio Broadcasting. As a result, a majority of student time is spent interviewing, developing, and producing. Operating and managing the station requires even more skill, dedication and time.

(3b. 2) According to Keller's (1999) ARCS model of motivating learners, a learning endeavor must gain a learners **a**ttention, be **r**elevant to the learner's personal goals, help the learner develop **c**onfidence, and conclude with the learner experiencing a sense of **s**atisfaction. Providing honors credit to those learners who invest more time in the radio program (i.e., take a role in station operation/management) would (1) provide them with relevant positions of leadership, (2) help them build confidence while assisting peers, and (3) provide the learners with a satisfying experience that rewards them for their extra efforts.

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.

(4a.1) New, more efficient production techniques have allowed the radio students to be more productive. Consequently, the Advanced Radio Production class has been able to accommodate a greater number of students, and, in order to make our students more competitive, move to focus more on production and less on station operation. Still, station operation is comprised of a series of necessary steps as WGBK is a licensed radio station and is therefore subject to FCC rules and regulations. Providing an honors sections would create a separate section whose students would be responsible for not only the production load, but also the operation of the station. Honors students would benefit from the production responsibilities and the responsibilities associates with station management.

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

(4 b.1) No other approaches considered.

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

(4c. 1) Honors Advanced Radio Production will provide a clear hierarchy for student management and guidance of Advanced Radio students and station personnel.

(4c. 2) Honors Advanced Radio will provide a regular, well-trained staff to help facilitate the operation of WGBK 88.5 FM.

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.

(5a.1) Approximately seven students would be invited to apply for Honors Advanced Radio Broadcasting.

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

(5b.1) The course will operate on a weekly management cycle and a weekly or bi-weekly production cycle.

Monday: Honors Advanced Radio students meet with the entire Advanced Radio Broadcasting class. The class sets the production schedule for the next week. The Honors Radio students also review the station operations for the week, prepare operating and program logs, prepare the week's first press releases, contact music distributors, begin reviewing the weekend's music submissions, begin reviewing current production traffic.

Tuesday: Honors Advanced Radio students meet with the entire Advanced Radio Broadcasting class. The class presents and discusses story ideas for production and begins contacting interviews. The Honors Radio students also review and file Monday's broadcast logs, review music submissions, contact music distributors, review future events for promotion, and review and upload new productions to the production traffic.

Wednesday: Honors Advanced Radio students meet with the entire Advanced Radio Broadcasting class. The class begins production. The Honors Radio students also create Wednesday's broadcast logs, review music submissions, contact music distributors, review future events for promotion, and review and upload new productions to the production traffic. Evening: Honors Advanced Radio Meeting.

Thursday: Honors Advanced Radio students meet with the entire Advanced Radio Broadcasting class. The class continues the production process. The Honors Radio students also review and file Thursday's broadcast logs, review music submissions, contact music distributors, review future events for promotion, and review and upload new productions to the production traffic.

Friday: Honors Advanced Radio students meet with the entire Advanced Radio Broadcasting class. The class listens to and reviews productions. The Honors Radio students also write Saturday's broadcast logs, review music submissions, file music charts, develop next week's promotional events, and review and upload new productions to the production traffic.

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

a) What are the implications of this proposed change for staffing, facilities, and budget?
(6a.1) No changes to staffing, facilities, or budget anticipated.

b) What are the implications of this proposed change for other courses in the department and for other departments in the school?
(6b.1) Again, the Glenbrook South Radio Program would benefit from a regular, dedicated, and trained managerial staff that would provide guidance for less-skilled students.

(6b.2) Again, the Glenbrook South radio station would benefit from a regular, dedicated, and skilled managerial staff to help facilitate its daily operation.

c) What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?
(6c.1) No summer curriculum project will 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?

(7a.1) The course will undergo the same regular formative evaluation as the Regular level Advanced Radio course. This formative evaluation seeks to maintain instructional objectives congruent with the needs and demands of the broadcasting industry. The evaluation currently includes regular review of program objectives by broadcasting industry professionals.

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

(7b.1) An efficient operating radio station that meets FCC requirements, and honors students who are highly knowledgeable of FCC requirements for broadcast stations.

APPLICATION FOR CURRICULAR CHANGE

School: Glenbrook South **Department:** Business Education **Date:** November 6, 2009

Name of proposed curricular change: Internship Course (Program)

1. **Brief description of the curricular change:** The Internship course will help students focus in on their passions and define or refine their college major and career goals, given their abilities and interests. Our goal is to help them discover their "element," the place where the things they love to do and the things that they are good at come together (Ken Robinson, Ph.D.—The Element). Students will complete 75 on-site hours in a semester, unpaid for ½ credit using a Pass/Fail grading system. It is the culmination of the connection between each student's unique talents and passions, and the careers and college majors that would suit them best. Every student, by senior year, should be able to answer the question, "Why are you going to major in X," based on their abilities and interests, and involvement in this focused program. This literacy is a new way of defining one's potential and is essential to their ultimate success and fulfillment.

2. **Curriculum Planning Committee Membership**
   a) **List the members of the committee**. Brian Wegley, Cameron Muir, Gary Freund, Mark O'Brien, Steve Kornick, Rosie McManamon, Dawn Hall, Ann LePage.
   b) **Give the rationale for the membership of this committee**. Collaboration of administration, guidance, and business education utilize experience, current resources, and data in the development of the program.
   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.

   We are falling short on preparing students to choose their college major and potential career, as many of our juniors and seniors do not know what they will study, why that's a good choice, and are not fully utilizing resources to determine the best choice, and find their passion.

   Survey of current GBS juniors and seniors - November 2009. Here is a summary of our findings:

   1. 56.5% of juniors and 28.6% of seniors have not decided on a college major.
   2. Of the students that did identify a major and/or career, the majority based that decision on their coursework, and parent or guardian influence. The next closest factor was potential earnings.
   3. 96% of juniors and seniors are interested in an internship program to explore potential career choices.

   *The survey was done without any instruction and when asked, many students cannot confidently identify a major and/or how it reflects their abilities and interests.

Comparison of District 225's offerings versus other local high schools. We have done our research and found the following:

1) **Glenbrook District 225**
    a. A total of two 50-minute career counseling group (25-30 students) sessions with their guidance counselor over their 4 years of high school.
    b. Passing of information on to students about local career fairs taking place.
    c. Senior project/DCE/ACP coursework: Less than 1% of GBS population participates in these course offerings.
    d. Summer school program exploring careers offered through NSERVE consortium.

2) **New Trier High School District 203** has a Career Development Program run by a Career Development Counseling Faculty Coordinator and a Career Center Assistant. They provide the following courses/services related to career development:
    a. Three individual counseling sessions with Career Development Counselor (GBS students have a total of two 50-minute sessions of counseling in their 4 years of high school, completed in a group setting of 25-30)
    b. Excursions to career fairs in various fields including health care, media and communications, engineering, architecture and marketing. (GBS provides limited opportunities for participation in career fairs)
    c. Job shadowing with professionals in the community**
    d. Career Services Orientation with sophomore advisories**
    e. Resume writing and interviewing workshops**
    f. Summer school program exploring careers in engineering, business management and information technology, or health care. (GBS offers this through the NSERVE consortium)
    g. Guidance for internships and Senior Project. (GBS has less than 1% of the Senior class partaking in the Senior Project)
    h. Interpretation of career assessment results (including the PLAN test)**

    **NOTE: GBS does not offer this.

3) **Adlai E. Stevenson High School District 125** offers E-Mentorships, Career Shadowing, and a Connected Internship course.
    a. E-Mentorship: This program lasts approximately 4 weeks and allows students to correspond with a professional via the internet regarding a career and/or courses of study.**
    b. Career Shadowing: Open for sophomores, juniors, and seniors, students spend a half or full day at the professional's place of business.**
    c. Connected Internship: Semester long course that allows students to explore potential career options while connecting these experiences with their academic strengths and interests. Prerequisites include: application, interview, recommendation from faculty, approval of Internship Director.**

    **NOTE: GBS does not offer this.

4) **Maine Township District 207** offers various internship or career exploration

possibilities to their students:

a. Career Exploration Nights: There are 3 nights of a 3-part program for students to attend and learn more about careers. Each session is two hours for a total of a six-hour program.
b. Business Careers course: Provides on-the-job work experience to students who are interested in careers in marketing, management, and business related occupations.
c. Health Care Careers course: Field trips, guest speakers, weekly visits to Advocate Lutheran General Hospital to job shadow are just some of the experiences available through this course. Students will research a career, interview a professional in that field, and explore a variety of opportunities as they develop their future career goals.
d. Nursing Care Technician course: Gives students an opportunity to participate in the Nursing Care Technician training program or to job shadow at Lutheran General Hospital. Students will become familiar with the skills and theories related to the nursing field and are prepared for employment at the hospital after successful completion of the program. Prerequisite: Pre-employment assessment and interview by Lutheran General Hospital.
e. Internship: Students are given opportunities to work for an employer for not less than four hours per week for a semester to learn about a particular industry or career. Student workplace activities may include special projects, a sample of tasks from different jobs, or tasks from a single occupation. Special field internships are described below:
    i. Pharmacy Technician Internship: Students intern at a Walgreen's pharmacy with a certified pharmacist over the course of a semester. In addition, students will receive seven classes offered by Walgreen's personnel to help them prepare for the National Pharmacy Technician Certification Examination. Prerequisites: Counselor's recommendation; interview by coordinating teacher.
    ii. Lutheran General & Education Internship: This course gives students an opportunity to complete an Internship at Lutheran General Hospital, a day care center, or an education facility. Students will get credit for hands-on career exploration in the health care/human services area.
    iii. Internship—Health & Human Services: Students will receive first hand experiences about a career in Health and Human Services. This class is designed for students who are interested but not limited to the field of education, medicine, or counseling. Students are required to log 70 hours at their internship site, attend weekly class, and complete a final project.

**GBS does not offer this.

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.
After surveying our juniors and seniors as well as researching local high school' s offerings, there is a need for Glenbrook District 225 to provide opportunities for the students to help guide them in selecting a college major and career, taking their strengths, interests, and passion into consideration. Many students are uncertain as to what career path to choose, turning to parents for guidance and using potential earnings as a high priority reason for their major/career choice. Their " performance in subject areas" is another reason they gave for choosing their major/career, but are they passionate about the subject area in which they excel? Just because you are good at math doesn' t mean you should be an engineer.
Experiential offerings would allow students to see the relevance and connection between courses and their major/career choice, therefore increasing motivation.

b) **If the committee considered other approaches to meeting the needs described above, describe those alternatives and indicate why each alternative was rejected.**
Our current Business Education staff was not a part of any of the past attempts at providing opportunities for students to explore careers. This course would be effective in helping students find what they love, and be able to **know** what to choose as a major and/or career. Experiential opportunities are critical in students' decision making.

c) **Delineate the ways in which this curriculum proposal, if implemented, shall complement other courses in the department and the school.**
This program will bring focus to a student's path and help drive academic choices, while bringing relevance to courses as the student sees the need for it in attaining their goal.

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.**
Culminating program will be an Internship for Juniors and Seniors, who will spend 75 hours in a semester at the site, working with a mentor in their career area of choice.
Approximate size of group is: Juniors and Seniors.

b) **Provide a tentative outline of the proposed course or program.**
From the time students enter GBS we would like to assist them in finding what they love, and are meant to do for a career. Internship would be the culmination of those efforts, involving practical hands-on experience in a chosen career area. (See Page 6 for Course overview)

Process

1. Students identify potential career area through aptitude tests, teacher and adult recommendations, course performance, and interest/passion.
2. Students apply to the program, submitting a resume, providing references.
3. Coordinator reviews application materials and conducts interview.
4. Upon acceptance, coordinator assists in securing an internship site.
5. Student completes 75 on-site hours in a semester, unpaid for ½ credit using a Pass/Fail grading system.
    a. Student will submit weekly timesheet and journal evaluations.
    b. Student will notify coordinator and Business Internship Supervisor of any absences prior to their scheduled time of arrival.
    c. Student will develop a portfolio describing the internship, the correlation with the skills and competencies, and a performance appraisal, suitable for attachment to college applications and/or job applications. Their culminating

project/final exam will consist of a professional presentation of their experiences, what they learned, and how their internship helped them with finding their “element.”

6. Business Internship Supervisor will provide an evaluation of the student intern.

Glenbrook South High School
Internship Program

Explore the possibilities..find your

Purpose:
The Internship course will help students focus in on their passions and define or refine their college major and career goals, given their abilities and interests. It is the culmination of a focused awareness of careers and majors in preparation for college.

Description:
The Internship Program offers career exploration to junior and senior students, in partnership with the industrial, business, professional, and service communities of the area to provide hands-on, practical experiences and mentoring in a potential career choice. Internships are conducted exclusively outside the school day with no compensation for a total of 75 hours per semester learning the day-to-day responsibilities of a particular profession. (This is equivalent to the number of hours spent in regularly scheduled semester long classes).

Objectives:
- To provide outstanding career exploration and career training before making financial commitments to colleges or trade schools.
- To enable students to demonstrate the ability to function effectively within the professional environment by development of interpersonal skills and basic work habits.
- To provide additional learning opportunities and resources regarding performance in the workplace, including invaluable feedback on their performance and habits.

Intern responsibilities:
- Apply for an internship position by developing a resume, securing references, and submitting an essay on why they chose the position.
- Develop a portfolio describing the internship, the correlation with the skills and competencies, and the final performance appraisal, suitable for attachment to college applications and/or job applications.
- Complete and submit weekly timesheet and journal evaluation, and end-of-semester projects.
- Demonstrate responsibility, sociability, self-management, integrity, honesty, and problem-solving skills.
- Notify supervisor of any absences before scheduled time of arrival.
- Agree to serve as an intern on a volunteer basis at the agreed upon site.
- Agree to learning objectives, responsibilities, and tasks.

High School Internship Coordinator
- Meets with candidates to determine areas of interest.
- Assists intern candidate with resume and letter of introduction.
- Assists intern in securing an appropriate internship site and develops specific learning objectives.
- Provides evaluation form for business supervisor to evaluate progress of intern.
- Provides weekly timesheet/journal evaluation sheets for intern.
- Provides additional learning opportunities and resources for success in the workplace.
- Meets with community groups such as Rotary Club, Chamber of Commerce to promote program.

Business Internship Supervisor: (on-site)
- Serves in the general capacity of a mentor/supervisor and develops list of duties and responsibilities with intern.
- Assists intern in attaining a measure of success in the program.
- Evaluates the performance of the intern during the assignment.

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

a) **What are the implications of this proposed change for staffing, facilities, and budget?**
Faculty member is to serve as Internship Coordinator as part of their teaching assignment. An example FTE from schools currently running the program is 30 students per section maximum. Coordinator/teacher will use the release time for developing a database of potential internship sites, by attending community group meetings, and communicating (via e-mail, phone calls, and personal visits) with potential business supervisors. Budget needs to include travel/mileage costs to sites.

b) **What are the implications of this proposed change for other courses in the department and for other departments in the school?**
This program will develop a heightened awareness of career planning/programs of study throughout the curriculum. By inspiring students to connect their talents and passions, they have the opportunity for much higher achievement and fulfillment. (Robinson, Ph.D.) Teachers of all classes, whether academic or technology based, will start to refer their more talented students to a more focused experience in which to prepare them for the future.

c) **What additional resources in personnel and money shall be required before this change is implemented? Shall summer curriculum work be required?**
At this point, a summer curriculum project is not projected; however, to develop a database of potential internship sites, a summer stipend is needed. Time will be needed to make phone calls and visit businesses to secure internship work sites. This includes attending community meetings.

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?**
Testimonials from both students and site evaluators will provide anecdotal evidence while timely evaluations will provide data to track student progress.

b) **What specific outcomes shall indicate success of the implemented proposal?**
Time will show the success of this Internship class. Initially, increased enrollment would be a positive indication that it is successful. Feedback from students will be important in determining the success of this program. The ultimate measure of this program's success will be the student's clarity on whether or not they should pursue this major/career area.