PERSONAL GOALS AND OBJECTIVES

William Bricken

========== GOAL SUMMARY ==========

OBJECTIVES	PROGRESS		
	2006	2007	2008
Teaching and Working with Students			
I. Teach each of our math courses	new	good	done
I.' Construct and teach new math courses			new
Working with Faculty/Staff			
II. Assist with global outcomes effort		new	good
III. Strengthen ties with computer-based programs		new	good
IV. Contribute to departmental management		new	good
Service (College, Community,Industry)			
V. Obtain funding for math curriculum development	new	good	fair
VI. Contribute to college in the high-school program	new	good	done
Program Management/Advancement			
VII. Build MathLab and web-based curriculum materials	new	good	good
VIII. Establish introductory logic course	new	good	good
IX. Address the Math 99 enrollment bottleneck			new
Professional Development			
X. Continue to develop boundary math	new	good	good

Assessment scale: good/fair/poor done=good

In the sequel, goals and progress are described in more detail. Each goal category has separate entries for calendar years 2007 and 2008.

========== TEACHING AND WORKING WITH STUDENTS ==========

GOAL I: Gain familiarity with Math Department course offerings and with enrolled students.

OBJECTIVES: Teach each type of Math course that the department offers.
TERM: Long-term, three years.

NEW GOAL I (2008): Construct new Math courses and teach them.

OBJECTIVES: Develop and teach new math courses designed for specific technical departments.
TERM: Two years.

----------2008----------

PROGRESS 12/07-12/08: GOAL I completed

Taught Math 107, and several classes of Math 102, which is a customized Quantitative Reasoning course at LWTC. An obstacle that I was unaware of when establishing this goal is that some courses are rarely taught. In particular Phil 106 has never run, and Math 151 is running in one small computer-based class in Autumn 2008. So GOAL MODIFICATION: teach those courses that are offered regularly. This leads to: goal completed, and NEW GOAL: construct new Math courses.

NEW GOAL PROGRESS: excellent

Designed two courses, including specifying objectives, writing course descriptions, and developing a 5-unit curriculum. "Math for Pre-School Teachers" was prepared for the Early Childhood Education Program, and I hope to teach this course in Winter 2009. "Digital Math" was developed for the MultiMedia Design and Production BAT program, for Engineering Design, and for other departments offering computer-related courses.

----------2007----------

PROGRESS 12/06-11/07: on target

Taught three new courses first quarter (obviously), and one different new course for each following quarter (excluding Autumn 2007).
Remaining courses to teach: 107, 151, PHIL 106.

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========== WORKING WITH FACULTY/STAFF ==========

GOAL II (new, 11/07): assist with the Global Outcomes effort.

OBJECTIVES: Contribute data analysis, strategy and techniques, and useful work to help the College with the accreditation process.
TERM: Intermediate-term, two years.

GOAL III (new, 11/07): continue to strengthen Math Department contact and projects with MMDP and other computer-based programs.

OBJECTIVES: Provide math courses and program integration for MMDP, IT, CSNT, Engineering Graphics, Electronics Design, and other programs that rely heavily on computer technology.
TERM: Long-term, three years.

GOAL IV (incipient, 5/07): Assume responsibility for one-half of Math Department management.

OBJECTIVES: Share the load of departmental management work.
TERM: Continuous.

----------2008----------

PROGRESS 12/07-12/08: excellent

GOAL II: Wrote several LWTC specific papers and memos that provided (usually mathematical) perspectives on Global Outcomes and Assessment:
- -- How Measurement Works
- -- The Assessment Plan
- -- Assessment Without and With Three Syllable Words
- -- Some Assessment Tools and Methods
- -- Exercises for Program Goals
- -- Multiple Levels of Analysis: Detail and Recommendations
- -- Advising is Global Teaching
- -- Global Objectives by Course

GOAL III: Developed "Digital Math" course. Began to address the problems in the math course sequence identified by MMDP.

GOAL IV: Contributed to the department by taking responsibility for
- -- textbook evaluation, coordination and ordering
- -- construction and maintenance of department wide exams
- -- the departmental global objectives matrix and assessment plan
- -- represented the Department in Global Outcome, Placement,

the Academy, and various other liaison activities.

----------2007----------

PROGRESS 12/06-11/07: excellent

Joined the Global Outcomes committee. Extended dialog on “critical thinking” materials.

Wrote grant proposals that included MMDP personnel as primary contributors.

Administration of the Math Department is proceeding smoothly, with Sue Kuestner and I succeeding in sharing responsibilities. Responsible for
- -- textbook ordering,
- -- construction and analysis of exams,
- -- progress in the MathLab,
- -- keeping up-to-date with State and Federal Math curricula.
- -- assisting Sue with whatever is needed.

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========= SERVICE (COLLEGE, COMMUNITY, INDUSTRY) =========

GOAL V: Obtain funding for Math curriculum development and innovation

OBJECTIVES: Curriculum innovation funding is intended to cover Summer employment, to provide development machines, and bring in funding to the College (minimal target ~$100,000 in indirect funds)

Submit proposals to a selected list of corporate foundations, as well as to Federal DoE and to NSF. Tasks include
- -- develop compelling content
- -- develop funding and budget justifications
- -- develop task lists and rationales
- -- contact potential sources for guidance

TERM: Intermediate-term, two years.

GOAL VI: Contribute to the success of the College in the High School and related programs.

OBJECTIVES: Work with Math department at Cedarcrest and other potential locations; provide guidance, curriculum structuring, and mentoring.
TERM: Short-term, one year.

----------2008----------

PROGRESS 12/07-12/08: good

GOAL V: The Department of Education grant proposal was not funded; the reviewers comments did help to identify weaknesses in the proposal's research citations and connectivity to existing academic research. The next submission to NSF has been delayed, I expect to be able to submit it during the first half of 2009. I've been able to invest about 800 hours developing software applications that contribute to the supporting technical work for the proposals. I've also been able to strengthen the academic members of the proposal team, however there are still some significant weaknesses. A subgoal is to address these weaknesses in 2009.

GOAL VI: Continued to support CHS as the Math mentor during the 2007-2008 academic year.

----------2007----------

PROGRESS 12/06-11/07: on target

GOAL V: Submitted Honda grant proposal in November 2006.
Submitted an NSF grant proposal in May 2007.
Submitted DoEd grant proposal in November 2007.

GOAL VI: actively participating in CHS program as LWTC Math representative, Academic years 2006-07, 2007-08.

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========== PROGRAM MANAGEMENT/ADVANCEMENT ==========

GOAL VII: Provide Math students with modern web-based instructional and support materials, including a MathLab teaching facility.

OBJECTIVES: Develop a departmental MathLab.
Develop a Math online guide to existing web-based Math materials that are related to the courses I'm teaching and specialized in diagrammatic and manipulative math tools. Tasks include

- -- survey web-based interactive math learning materials
- -- associate available materials with LWTC course content
- -- develop lesson plans, student guides, and other support materials

-- present and evaluate in classroom
TERM: Intermediate-term, two years.

GOAL VIII: Establish Introductory Logic course

OBJECTIVES: Launch the PHIL 106 (Logic) course and develop its popularity sufficiently so that it continues as a regular offering.
TERM: Intermediate-term, two-years.

GOAL IX (new 9/08): Address and fix "the Intermediate Algebra bottleneck" at LWTC.

OBJECTIVES: Math 99 has been a long-term problem within the Math Department sequence of courses. Required by the State for an transferable AA degree, it is generally too difficult (and somewhat irrelevant) for certificate students. Math 102 has been created as a non-transferrable terminal course in math so that students can get a technical AA. Math 102 is an anomaly in the course sequence, while Math 99 is an intractable obstacle. To fix this, Math 99 needs to made more relevant. This is a forward looking goal to prepare the math course sequence for BAT programs.
TERM: Until successful.

----------2008----------

PROGRESS 12/07-12/08: good

GOAL VII: I provided a bit of assistance to Sue's first class in the Math Lab, and incorporated one or two visits to the MathLab into each of my classes. Only a few web-based support tools have been assembled. The software that I'm writing for manipulative arithmetic has been developing very slowly, despite about 800 hours of development during the academic year.

GOAL VIII: This course has not attracted sufficient students to be offered. I’e managed to generate sufficient student interest to offer this course in Winter 2009 for the first time.

GOAL IX: Wrote a proposal to address the Math 99 problem. Began talks with administration to explore possible solutions. Devised a solution: convert the Math 99 content into the Math 102 content.

Wrote several LWTC specific papers and memos that provided perspectives and potential solutions to the Math 99 problem:
-- College-level Mathematics at LWTC
-- The Intermediate Algebra Bottleneck

----------2007----------

PROGRESS 12/06-11/07: on target

GOAL VII: actively developing Math Lab, reviewing relevant online materials (both commercial and free). Beginning to develop curriculum for Math Lab coursework.

GOAL VIII: next window of opportunity to offer this course is Winter 2008. Need to advertise, and assure it is offered at a good time. Considering possibility of a Discrete Math course.

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========== PROFESSIONAL DEVELOPMENT ==========

GOAL X: Continue professional activities in Boundary Math.

OBJECTIVES: There are professional development activities that I do as part of my personal interests and hobbies. Technically these are not objectives, but I intend to continue with:

- -- read one or two Math books each month
- -- develop Boundary Math theory and applications
- -- write about six papers (at various technical levels) per year
- -- participate in the Boundary Math community

TERM: Continuous.

----------2008----------

PROGRESS 12/07-12/08: excellent

The "six-month" Mathematica 6.0 animation project has turned into an 18 month project. Currently at about 80 pages of Mma code, after 800 development hours. Added new functionality, including base-ten and digital-base-ten displays, simulated hand-held calculator interface, and unification of addition and subtraction.

Book on Spatial Arithmetic has been expanded to include documentation for the Mma Project, but has otherwise languished. I hope to complete it during Summer 2009, after finishing the Mma Project.

Continued work with the Boundary Institute. Correspondence, planning, clarification of technical areas.

Wrote a short "Lessons Learned" piece about Boolean minimization that was published in AI Magazine (Summer 2008).

----------2007----------

PROGRESS 12/06-11/07: excellent

Preparing papers on the axiomatic structure of spatial arithmetic.

Mathematica 6.0 animation project. Animate spatial computation by building a generic boundary math animation engine. Two months of a six month project completed, 1000 lines of Mathematica code. To be distributed through the Wolfram Research Demonstrations Project.

Intensive study of nano-architectures for computing (read 50-60 articles, wrote technical analysis and critique, suggested possible solutions to significant design problems (mainly techniques for fault-tolerant computing). Presented work to HP Research Labs.

Continued work with the Boundary Institute. Correspondence, planning, clarification of technical areas.

Wrote 70% of a book on Spatial Arithmetic, developed several math innovations including

- -- axiomatization of unit-arithmetic
- -- axioms of differentiation in calculus
- -- comparative study of textual and spatial axiom systems

Finalized an 11-minute animated and narrated video of Spatial Arithmetic operations.

Continued targeted reading (4 books between 12/06-5/07)

Gave WSCC 2007 Math conference presentation on Spatial Math.

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