Healthcare Engineering and Decision Sciences

major:
#in A >= 2
#in A + #in B >= 3
#in A + #in B + #in C = 4

minor:
#in A >= 1
#in A + #in B = 2

Group A:
IEMS 443 (Armbruster) Health Policy Modeling
IEMS 444 (Mehrotra) Healthcare Management Science
IEMS 445 (Hazen) Decision and Risk Analysis

Group B:
STAT 453 Survival Analysis
STAT 465 Statistical Methods for Bioinformatics and Computational Biology

Group C:
IEMS 448 (Hazen) Bayes nets / artificial intelligence
IEMS 441 (Contractor) Social Network Analysis
IEMS 463 (Tamhane) Statistical Analysis of Designed Experiments.
and other courses subject to Graduate Committee approval.
These other courses are to enhance the student's breadth of experience in healthcare.

Appendix A

IEMS 490 (Armbruster, Fall 2009) will count as IEMS 443, and
IEMS 490 (Mehrotra, Winter 2009) will count as IEMS 444.
ESAM 495 (Brockmann, Spring 2010) may be approved for Group B by petition.

Appendix B [info about courses]

IEMS 443 (Armbruster) Health Policy Modeling
last offered Fall 2009
http://users.iems.northwestern.edu/~armbruster/2009iems490/

IEMS 444 (Mehrotra) Healthcare Management Science
last offered Winter 2009
http://users.iems.northwestern.edu/~armbruster/2009wIEMS490outline.doc

IEMS 445 (Hazen) Decision and Risk Analysis
Theory and practice of decision making under uncertainty. Decision trees, influence diagrams, the value of information; Bayesian approaches, including conjugate and
predictive distributions; utility theory foundations, risk preference, multi-attribute utility; applications such as earthquake risk analysis, pumped storage siting, setting pollution standards, and medical decision making. Prerequisites: IEMS 302 or equivalent.

ESAM 495 (Brockmann, Spring 2010) Dynamical Processes on Networks
http://web.me.com/zwergen/S10-495/Home.html

STAT 453 Survival Analysis
Life-table construction, Kaplan-Meier estimation, exponential survival distributions, Weibull distributions, and Cox regression models.

STAT 465 Statistical Methods for Bioinformatics and Computational Biology
An introduction of statistical methodologies in cutting-edge fields of computational biology and bioinformatics topics including microarray gene expression data analysis; biological sequence analysis; EST and SAGE data analysis.