Indian Institute of Technology Guwahati
Proposal for a New Course

Course Number & Title: **BM512H & Computer-aided Operations Research**	
L-T-P-C: 3-0-2-4	
Type of Letter Grading (Regular Letter Grades / PP or NP Letter Grades): Regular Letter Grades	
Kind of Proposal (New Course / Revision of Existing Course): New Course	
Offered as (Compulsory / Elective): Compulsory	
Offered to: Masters of Business Administration (MBA)	
Offered in (Odd/ Even / Any): Even	
Offered by (Name of Department/ Center): School of Business	
Pre-Requisite: NIL	
Preamble / Objectives (Optional):	
Course Content/ Syllabus *(as a single paragraph if it is not containing more than one subject. Sub-topics/ Sections may be separated by commas(,). Topics may be separated by Semi-Colons(;). Chapters may be separated by Full-Stop(.). While starting with broad heading, it may be indicated with Colon symbol before the topics. For example: Multi-variable Calculus: Limits of functions, Continuity, ...)* Introduction to operations research; Mathematical modelling; Linear programming: simplex method, sensitivity analysis; non-linear programming: KKT conditions; Integer Programming: branch & bound method; Evolutionary techniques: genetic algorithm, teaching learning based optimization; Multi-objective optimization; Transportation and assignment problems; Case studies involving combinatorial optimization and scheduling problems, solution of large scale operation research problems using Excel, MATLAB, IBM ILOG CPLEX Optimization Studio and GAMS.	
Books (In case UG compulsory courses, please give it as "Text books" and "Reference books". Otherwise give it as "References".	
Texts: (Format: Authors, *Book Title in Italics font,* Volume/Series, Edition Number, Publisher, Year.)	
1.	H.A. Taha, *Operations Research - An Introduction*, Prentice Hall of India, 1997.
2.	K. Deb, *Multi-objective Optimization using Evolutionary Algorithms*, 1st Edition, Wiley India, 2010.
3.	S.S. Rao, *Optimization: Theory and Applications*, 4th Edition, Wiley India, 2014.
References: (Format: Authors, *Book Title in Italics font,* Volume/Series, Edition Number, Publisher, Year.)	
1.	
2.	

Detailed Course Content (Optional) It will not be included in the Courses of Study Booklet		
Sl. No.	Broad Title / Topics	Number of Lectures
1		
2		
3		
4		
5		
	Total Number of Lectures =	