



IMS Engineering College, Ghaziabad

Department of Applied Sciences and Humanities

2020-21



IMS Engineering College, Ghaziabad

Course Outcomes (CO) mapping with Programme Outcomes (PO)



Institute Vision and Mission

Vision

Our vision is to impart Vibrant, Innovative and Global Education to make IMS the world leader in terms of Excellence of Education, Research and to serve the nation in the 21st century.

Mission

- To develop IMSEC as a Centre of Excellence in Technical and Management Education.
- To inculcate in its students the qualities of Leadership, Professionalism, Executive Competence and Corporate understanding.
- To imbibe and enhance Human Values, Ethics and Morals in our students.
- To transform students into Globally Competitive Professionals



Program Outcomes

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



IMS Engineering College, Ghaziabad

B.Tech First Year

S. No.	Course Code	Course Title	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS201T/ KAS202T	Engineering Physics/ Engineering Chemistry	3	1	0	30	20	50		100		150	4
2	KAS203T	Engineering Mathematics-II	3	1	0	30	20	50		100		150	4
3	KEE201T/ KEC201T	Basic Electrical Engineering/ Emerging Domain in Electronics Engineering	3	0	0	30	20	50		100		150	3
4	KCS201T/ KME201T	Programming for Problem Solving / Fundamentals of Mechanical Engineering & Mechatronics	3	0	0	30	20	50		100		150	3
5	KAS251P/ KAS252P	Engineering Physics Lab/ Engineering Chemistry Lab	0	0	2				25		25	50	1
6	KEE251P/ KEC251P	Basic Electrical Engineering Lab/ Electronics Engineering Lab	0	0	2				25		25	50	1
7	KCS251P/ KAS254P	Programming for Problem Solving / English Language Lab	0	1	2				25		25	50	1
8	KCE251P/ KWS251P	Engineering Graphics & Design Lab/ Mechanical Workshop Lab	0	1	2				50		50	100	1
9	KMC201/ KMC202	AI For Engineering/ Emerging Technology for Engineering	2	0	0	15	10	25		25		50	2
10	KNC201	Soft Skill II	2	0	0	15	10	25		25			
	MOOCs	(For B.Tech. Hons. Degree)*											
		Total										900	20



IMS Engineering College, Ghaziabad

Sub Code	KAS-201T
Sub. Name	Engineering Physics

COURSE OUTCOMES		Bloom's Level
CO1	Students should understand about the different frames of reference, transformation equations for them, relativistic mechanics and its applications.	
CO2	Students should understand the formation and conduction of wave in different medium with applications of Maxwell's equations	
CO3	Develop basic understanding of existence of matter waves, solving problems using Schrodinger's wave equation and gain knowledge about applications of Quantum mechanics	
CO4	Students should have an overview of results of superposition of waves i.e. interference of light, diffraction of light waves	
CO5	Students should be able to understand the concept of optical fiber and LASER for modern developments in physics	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2		1	1					2
CO2	3	2	3	3		1	2					2
CO3	3	3	3	2		1						2
CO4	2	2	2	1	2	1						2
CO5	2	3	3	2	3	2	1					2
Avg	2.6	2.4	2.6	2	2.5	1.2						2



IMS Engineering College, Ghaziabad

Sub Code	KAS 202T
Sub. Name	Engineering Chemistry

COURSE OUTCOMES		Bloom's Level
CO1	To understand the basic principles of chemical bonding, Importance of nanomaterials, liquid crystals, graphite & Fullerenes in modern industries	
CO2	Students should be able to understand the basic ideas of UV-Visible, IR and Raman Spectroscopy and their application	
CO3	Graduates shall have an ability to understand the phase rule and their concept. To provide an overview of corrosion and its prevention. Students should know Thermodynamic functions, Batteries	
CO4	The course intends to provide in-depth knowledge of water chemistry including various methods of softening. Graduates shall have an ability to know different fuels and their usage.	
CO5	The course intends to provide an overview of various polymers, their synthesis and applications as well as importance of organometallic compounds in polymer industry along with other industries.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	1		1					1
CO2	2	2	3	3	2							2
CO3	2	2	3	1	2	1	2					2
CO4	3	2	2	2	1	1	1					1
CO5	2	2	2	2	2	1	2					1
Avg	2.4	2	2.2	1.8	1.6	1	1.5					1.4

Sub Code	KAS-203T
Sub. Name	Engineering Mathematics-II



IMS Engineering College, Ghaziabad

COURSE OUTCOMES		Bloom's Level
CO1	Understand the concept of differentiation and apply for solving differential equations.	
CO2	Remember the concept of definite integral and apply for evaluating surface areas and volumes.	
CO3	Understand the concept of convergence of sequence and series. Also evaluate Fourier Series.	
CO4	Illustrate the working methods of complex functions and apply for finding analytic functions.	
CO5	Apply the complex functions for finding Taylor's series, Laurent's series and evaluation of definite integrals.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2		3							3
CO2	3	1	1		2							2
CO3	3	2	2		2							2
CO4	3	1	1									1
CO5	3	2	2		2							1
Avg	3.00	1.80	1.60		2.25							1.80

Sub Code	KEE-201T
Sub. Name	Basic Electrical Engineering



IMS Engineering College, Ghaziabad

COURSE OUTCOMES		Bloom's Knowledge Level
CO1	Student will be able to apply the concepts of KVL/KCL and network theorems in solving DC circuits.	K4
CO2	Student will be able to analyse the steady state behaviour of single phase and three phase AC electrical circuits.	K4
CO3	Student will be able to identify the application areas of a single phase two winding transformer as well as an auto transformer and calculate their efficiency. Also identify the connections of a three phase transformer.	K3
CO4	Student will be able to illustrate the working principles of induction motor, synchronous machine as well as DC machine and employ them in different area of applications.	K4
CO5	Student will be able to describe the components of low voltage electrical installations and perform elementary calculations for energy consumption	K3

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	1	1						3
CO2	3	3	2	1	1				1			2
CO3	2	3	3	2								2
CO4	2	2	3	2	2					1		2
CO5	2	2	3	2	2	1	1		1	1		2
Avg	2.4	2.4	2.6	1.6	1.5	1.00	1.00		1.00	1.00		2.22

Sub Code	KEC-201T
Sub. Name	Emerging Domain in Electronics Engineering



IMS Engineering College, Ghaziabad

COURSE OUTCOMES		Bloom's Level
CO1	Students should able to identify schematic symbols and understand the working principles of various types of Diodes	
CO2	Students should have an overview to apply the knowledge of diode to create small circuits like Clamper, clipper and voltage multiplier and rectifier.	
CO3	Understanding the working principle of BJT and FET and their applications as amplifier and switches.	
CO4	Graduate should have basic understanding of the block diagram of op-amp and its applications such as adder, sub tractor, integrator, differentiator, comparator and amplifier. Basic concept of IoT System like Microprocessor, Microcontroller, Bluetooth Technology, Wi-Fi Technology.	
CO5	Study the concept of Number system and various Gates, Concept of Boolean Algebra and use of K-map. Understanding about various IC Technology like SSI, MSI, VLSI Integrated Circuits.	
CO6	Understanding about communication systems, need of modulation and fundamental of Amplitude modulation and demodulation techniques. Study the concept of Data Communication, Wireless Communication (GPRS, CDMA, GSM) Radar and Satellite Communication	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1		1				1	1	2	3
CO2	2	2	1		1				1	1	2	3
CO3	2	1	1		1				1	1	2	3
CO4	3	3	2	1	2	1	1		2	2	2	3
CO5	2	2	1	1	2		1		2	1	2	3
CO6	3	3	2	2	2	2	2		2	2	2	3
Avg	2.33	2.00	1.33	0.66	1.50	0.50	0.66		1.50	1.33	2.00	3.00

Sub Code	KCS201T
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IMS Engineering College, Ghaziabad

Sub. Name	Programming for Problem Solving
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COURSE OUTCOMES		Bloom's Level
CO1	Develop simple algorithms for arithmetic and logical problems.	
CO2	Translate the algorithms to programs & execution (in C language).	
CO3	Implement conditional branching, iteration and recursion.	
CO4	Decompose a problem into functions and synthesize a complete program using divide and conquer approach.	
CO5	Use arrays, pointers and structures to develop algorithms and programs.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	1	1						3
CO2	3	3	2	1	1				1			2
CO3	2	3	3	2								2
CO4	2	2	3	2	2					1		2
CO5	2	2	3	2	2	1	1		1	1		2
Avg	2.40	2.40	2.60	1.60	1.50	1.00	1.00		1.00	1.00		2.20



IMS Engineering College, Ghaziabad

Sub Code	KME-201T
Sub. Name	Fundamentals of Mechanical Engineering and Mechatronics

COURSE OUTCOMES		Bloom's Level
CO1	Understand the concept of stress and strain, factor of safety, beams	K2
CO2	Understand the basic component and working of internal combustion engines, electric and hybrid vehicles, refrigerator and heat pump, airconditioning	K2
CO3	Understand fluid properties, conservation laws, hydraulic machinery used in real life.	K2
CO4	Understand the working principle of different measuring instrument with the knowledge of accuracy, error and calibration, limit, fit, tolerance and control system.	K2
CO5	Understand concept of mechatronics with their advantages, scope and Industrial application, the different types of mechanical actuation system, the different types of hydraulic and pneumatic systems.	K2
CO6	Apply concepts of strength of material for safe design, refrigeration for calculation of COP, concepts of fluid mechanics in real life, concepts of measurements in production systems.	K3

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	1	1						
CO2	3	2	1	1		1						
CO3	2	1				1				1		
CO4	2	1	1			1				1		
CO5	3	2	2			1				1		
CO6	3	1	1			1						
Avg	2.67	1.50	1.20	1.00	1.00	1.00				1.00		



IMS Engineering College, Ghaziabad

Sub Code	KAS-251P
Sub. Name	Engineering Physics Lab

COURSE OUTCOMES		Bloom's Level
CO1	Optical experiments, which will establish the fundamental interference, diffraction, polarization phenomena, which will be clearly visualized with the experiments mentioned in the syllabus	
CO2	To learn about the basic electrical and electronic components such as Inductor, Capacitor and Resistor	
CO3	To understand PN junction diode and it's working and applications and also enable students to calibrate the voltmeter and ammeter using different bridges	
CO4	Enable students to clearly understand the effect of magnetic field and how magnetic field is used to determine various physical parameters like radius of a current carrying coil	
CO5	To determine the wavelength of sodium light by Newton's ring experiment	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1			2			1		2
CO2	2	2	1				1					2
CO3	1	1	1									1
CO4	2	1	1									1
CO5	2	1	1	1			1					1
Avg	2	1.4	1.2	1			1.3			1		1.4



IMS Engineering College, Ghaziabad

Sub Code	KAS 252P
Sub. Name	Engineering Chemistry Lab

COURSE OUTCOMES		Bloom's Level
CO1	Use of different analytical instruments.	
CO2	Measure molecular/system properties such as surface tension, viscosity, conductance of solution, chloride and iron content in water.	
CO3	Measure hardness of water	
CO4	Estimate the rate constant of reaction.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	3	2	2	2	2				3
CO2	2	2	3	2	1	3	3	2				2
CO3	3	2	3	2	2	3	3	2				2
CO4	1	2	1	3	1	2	1	1				1
Avg	2	1.75	2.25	2.5	1.5	2.5	2.25	1.75				2



IMS Engineering College, Ghaziabad

Sub Code	KEE-251P
Sub. Name	Basic Electrical Engineering Lab

COURSE OUTCOMES		Bloom's Knowledge Level
CO1	Conduct experiments illustrating the application of KVL/KCL and network theorems to DC Electrical circuits.	K4
CO2	Demonstrate the behavior of AC circuits connected to single phase AC supply and measure power in single phase as well as three phase electrical circuits.	K4
CO3	Perform experiment illustrating BH curve of magnetic materials	K3
CO4	Calculate efficiency of a single phase transformer and DC machine.	K4
CO5	Perform experiments on speed measurement and reversal of direction of three phase induction motor and Identify the type of DC and AC machines based on their construction.	K3

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	1	1						
CO2	3	2	2	1		1						
CO3	2	1				2				1		
CO4	2	1	1			2				1		
CO5	3	2	2			2				1		
Avg	2.6	1.6	1.5	1.0	1.0	1.6				1.00		



IMS Engineering College, Ghaziabad

Sub Code	KEC-251P
Sub. Name	Electronics Engineering Lab

COURSE OUTCOMES		Bloom's Level
CO1	Implement Transformer winding and Printed circuit Boards.	
CO2	Study of various electronic equipments like CRO, Multimeter, Function Generator and power supply.	
CO3	Implement various applications of diode as HWR, FWR and learn VI curve of the same.	
CO4	Design various digital circuits using logic gates.	
CO5	Implement various op-amp applications like adder and subtractor.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	2				2	2	2	2
CO2	3	3	1	1	2				1	2	2	2
CO3	2	2	1	2	2				1	1	1	1
CO4	2	2	1	2	2				1	1	1	2
CO5	2	2	1	1	2				1	1	1	1
Avg	2.40	2.20	1.00	1.60	2.00				1.20	1.40	1.40	1.60



IMS Engineering College, Ghaziabad

Sub Code	KCS-251P
Sub. Name	Programming for Problem Solving

COURSE OUTCOMES		Bloom's Level
CO1	Translate the algorithms to programs & execution (in C language)	
CO2	Implement conditional branching, iteration and recursion.	
CO3	Decompose a problem into functions and synthesize a complete program using divide and conquer approach and arrays, pointers and structures to develop algorithms and programs.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	1				1			2
CO2	2	2	3	2								2
CO3	2	3	3	2	2	1	1		1	1		2
Avg	2.33	2.66	2.66	1.66	1.5	1	1		1	1		2

Sub Code	KAS-254P
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IMS Engineering College, Ghaziabad

Sub. Name	English Language Lab
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COURSE OUTCOMES		Bloom's Level
CO1	Students will be enabled to understand the basic objective of the course by being acquainted with specific dimensions of communication skills i.e. Reading, Writing, Listening, Thinking and Speaking.	
CO2	Students would be able to create substantial base by the formation of strong professional vocabulary for its application at different platforms and through numerous modes as Comprehension, reading, writing and speaking etc.	
CO3	Students will apply it at their work place for writing purposes such as Presentation/official drafting/administrative communication and use it for document/project/report/research paper writing.	
CO4	Students will be made to evaluate the correct and error-free writing by being well-versed in rules of English grammar and cultivate relevant technical style of communication & presentation at their work place and also for academic uses.	
CO5	Students will apply it for practical and oral presentation purposes by being honed up in presentation skills and voice-dynamics. They will apply techniques for developing interpersonal communication skills and positive attitude leading to their professional competence.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	1		1	1	2	1	3	1	2
CO2	1	1	1	2		1	1	1	1	3	1	1
CO3	1	1	1	2		1	1	2	1	3	2	1
CO4	1	1	1	1		2	2	2	2	3	1	1
CO5	1	1	1	1		2	2	2	2	3	2	3
Avg	1	1	1	1.4		1.4	1.4	1.8	1.4	3	1.4	1.6



IMS Engineering College, Ghaziabad

Sub Code	KCE-251P
Sub. Name	Engineering Graphics & Design Lab

COURSE OUTCOMES		Bloom's Level
CO1	Student will be able to understand the visual aspects of engineering design.	
CO2	Student will be able to understand engineering graphics standards and solid modelling.	
CO3	Student will be able to learn effective communication through graphics.	
CO4	Student will be able to apply modern engineering tools necessary for engineering practice.	
CO5	Student will be able to learn computer-aided geometric design.	
CO6	Student will be able to learn Isometric views.	
CO7	Student will be able to understand working drawings.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1								2
CO2	2	2	3	1	1				1			2
CO3	2	2	2	2	1						1	2
CO4	2	2	2	2	1						1	2
CO5	2	2	2	2	1						1	2
CO6	2	2	2	2	1						1	2
CO7	2	2	1	1								1
Avg	2	2	2	2	1				1		1	2



IMS Engineering College, Ghaziabad

Sub Code	KWS251P
Sub. Name	Mechanical Workshop Lab

COURSE OUTCOMES		Bloom's Level
CO1	Student will be able to use various engineering materials, tools, machines and measuring equipments	
CO2	Student will be able to perform machine operations in lathe and CNC machine.	
CO3	Student will be able to perform manufacturing operations on components in fitting and carpentry shop.	
CO4	Student will be able to perform operations in welding , moulding , casting and gas cutting.	
CO5	Student will be able to fabricate a job by 3D printing manufacturing technique.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	2	2	2	3	3	2	1	2
CO2	2	2	2	1	1	3	3	3	3	2	1	3
CO3	3	2	2	1	2	2	2	2	2	2	1	2
CO4	2	1	3	1	1	2	3	2	2	1	1	2
CO5	1	1	1	1	1	1	2	1	2	1	1	2
Avg	2	1.6	2	1	1.4	2	2.4	2.2	2.4	1.6	1	2.2



IMS Engineering College, Ghaziabad

Sub Code	KMC-201	
Sub. Name	AI for Engineering	
COURSE OUTCOMES		Bloom's Level
CO1	Students will be able to understand the evolution and various approaches of AI	
CO2	Students will be able to understand data storage, processing, visualization, and its use in regression, Clustering etc.	
CO3	Students will be able to understand natural language processing and chatbots	
CO4	Students will be able to understand the concepts of neural networks	
CO5	Students will be able to Understand the concepts of face, object, speech recognition and robots	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	-	-	-	-	-	-	-	-	-	3
CO2	3	-	3	2	-	-	-	-	-	-	-	3
CO3	3	3	3	-	-	-	-	-	-	-	-	3
CO4	3	-	-	-	-	-	-	-	-	-	-	3
CO5	3	2	2	-	-	-	-	-	-	-	-	3
Avg	3.00	2.33	2.66	2.00	-	-	-	-	-	-	-	3.00



IMS Engineering College, Ghaziabad

Sub Code	KMC-202
Sub. Name	Emerging Technology for Engineering

COURSE OUTCOMES		Bloom's Level
CO1	Understand the concepts of internet of things, smart cities and industrial internet of things	K2
CO2	Understand the concepts of cloud computing	K2
CO3	Understand the concepts of block chain, cryptocurrencies, smart contracts	K2
CO4	Understand design principles, tools, trends in 3 D printing and drones	K2
CO5	Understand augmented reality (AR), virtual reality (VR), 5G technology, brain computer interface and human brain	K2

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1		1	2	2					2
CO2	2	1	2		2	2	2					2
CO3	2	1	1		1	2	1					2
CO4	2	1	1		1	2	2					2
CO5	2	1	1		1	2	2					2
Avg	2	1	1.2		1.2	2	1.8					2



IMS Engineering College, Ghaziabad

Sub Code	KNC-201
Sub. Name	Soft Skills II

COURSE OUTCOMES		Bloom's Level
CO1	Students will be able to converse well with effective LSRW skills in English.	
CO2	Students will evaluate the importance of conversation in their personal and professional domain and apply it for extending their professional frontiers.	
CO3	Students will learn to apply motivation skills for their individual and professional excellence.	
CO4	Students will utilize their teamwork and their interpersonal communication skills to survive and excel at their work-place.	
CO5	Students will learn to evaluate creativity for their professional innovation and critical thinking for their competence.	

CO-PO Matrix												
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	1	1	2	2	3	2	3	1	2
CO2	1	2	1	1	1	2	2	3	2	3	1	2
CO3	1	1	1	1	1	2	2	2	2	3	1	2
CO4	1	1	1	1	1	2	3	3	3	3	1	2
CO5	1	2	2	1	1	2	2	2	1	3	2	2
Avg	1	1.40	1.20	1	1	2	2.20	2.60	2	3	1.20	2