

# Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

AY 2023-24

## Course Information

Programme	M. Tech. (Electronics Engineering)
Class, Semester	Second Year M. Tech., Sem III
Course Code	6EN645, 6EN646, 6EN647,
Course Name	Dissertation Phase I ,II,III
Desired Requisites:	Concept knowledge of research methodology, project management, Electronics Engineering

Teaching Scheme (Hrs)		Examination Scheme (Marks)			
Lecture	-	LA1	LA2	ESE	Total
Tutorial	-	100	100	100	300
Practical	20				
Interaction	-				
Credits: 10					

## Course Objectives

- 1 To develop the student to apply the knowledge gained to identify problems for research and provide the solutions by self-study and interaction with stakeholders.
- 2 Acquire knowledge to tackle real world problems of societal concerns
- 3 Impart flexibility to the student to have increased control over his/ her learning
- 4 Teachers would serve as mentor/facilitator of inquiry and reflection rather than as an instructor
- 5 Enhance a students' learning through increased interaction with peers and colleagues.

## Course Outcomes (CO) with Bloom's Taxonomy Level

At the end of the course, students will be able to,

CO1	Search the existing literature and identification of research problem	Analyze
CO2	Design and develop the solution for complex engineering problem	Evaluate
CO3	Create the new knowledge in the specialized field	Create

## Course Content

In dissertation Phase I,II,III, the student has to complete the partial work of the Dissertation in Electronics

Engineering which will consist of problem statement, literature review from IEEE Transactions and Journals, design, and scheme of implementation (viz. Block diagram, Mathematical Model, Algorithm, Simulation tool, hardware setup requirements etc.)

The student is expected to complete the dissertation at least up to the design phase. As a part of the progress report of Dissertation Phase I, the candidate shall deliver a presentation on the advancement in Technology pertaining to the selected dissertation topic.

The student shall submit the duly approved and certified progress report of Dissertation Phase I in standard format for satisfactory completion of the work by the concerned guide and head of the Department.

The student will be assessed by a panel of examiners in the department for LA. In ESE there will be one external examiner, internal examiner/guide and a chairman for assessment. The assessment will be broadly based on literature study, work undergone, content delivery, presentation skills, documentation and report

## Text Books

- 1 As per the research topic

~~Handwritten signature~~  
(S.K.P.)

Handwritten signature  
H. J. D. L. N.

References	
1	National and International Journals
Useful Links	
1	<a href="https://nptel.ac.in/courses/121/106/121106007/">https://nptel.ac.in/courses/121/106/121106007/</a>
2	<a href="https://www.youtube.com/watch?v=mAVswCzbz_jM&amp;feature=emb_imp_woyt">https://www.youtube.com/watch?v=mAVswCzbz_jM&amp;feature=emb_imp_woyt</a>
3	<a href="https://nptel.ac.in/courses/110/104/110104073/">https://nptel.ac.in/courses/110/104/110104073/</a>
4	<a href="https://nptel.ac.in/courses/110/107/110107081/">https://nptel.ac.in/courses/110/107/110107081/</a>

CO-PO Mapping						
	Programme Outcomes (PO)					
	1	2	3	4	5	6
CO1	1			1		2
CO2	1		1		2	1
CO3		2				1
The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High Each CO of the course must map to at least one PO.						

Assessment				
There are three components of lab assessment, LA1, LA2 and Lab ESE. IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.				
Assessment	Based on	Conducted by	Typical Schedule (for 26-week Sem)	Marks
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 6 Marks Submission at the end of Week 6	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 7 to Week 12 Marks Submission at the end of Week 12	30
Lab ESE	Lab activities, attendance, journal	Lab Course Faculty	During Week 15 to Week 18 Marks Submission at the end of Week 18	40
Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments.				

<b>Walchand College of Engineering, Sangli</b> (Government Aided Autonomous Institute)					
<b>AY 2023-24</b>					
<b>Course Information</b>					
<b>Programme</b>	M.Tech. (Electronics Engineering)				
<b>Class, Semester</b>	Second Year M. Tech., Sem III				
<b>Course Code</b>	6EN611				
<b>Course Name</b>	Professional Elective 5 - Artificial Intelligence				
<b>Desired Requisites:</b>	Nil				
<b>Teaching Scheme</b>		<b>Examination Scheme (Marks)</b>			
<b>Lecture</b>	3 Hrs/week	<b>MSE</b>	<b>ISE</b>	<b>ESE</b>	<b>Total</b>
<b>Tutorial</b>	-	30	20	50	100
<b>Practical</b>	-				
<b>Interaction</b>	-	<b>Credits: 3</b>			
<b>Course Objectives</b>					
<b>1</b>	To become familiar with basic principles of AI toward problem solving, inference, perception, and learning.				
<b>2</b>	To study about various heuristic and game search algorithms				
<b>3</b>	To know about basic concepts of knowledge and reasoning, NLP and Machine Learning				
<b>Course Outcomes (CO) with Bloom's Taxonomy Level</b>					
At the end of the course, the students will be able to,					
<b>CO1</b>	Apply basic principles of AI in solutions that require problem solving, perception, knowledge representation and learning				Apply
<b>CO2</b>	Evaluate Artificial Intelligence (AI) methods and describe their foundations.				Evaluate
<b>CO3</b>	Demonstrate knowledge of reasoning and knowledge representation for solving real world problems				Apply
<b>Module</b>	<b>Module Contents</b>				<b>Hours</b>
I	<b>Introduction:</b> Foundation and History of AI, Evolution of AI - Applications of AI, Classification of AI systems with respect to environment. Artificial Intelligence vs Machine learning, Statistical Analysis: Relationship between attributes: Covariance, Correlation Coefficient, Chi Square. Intelligent Agent: Concept of Rationality, nature of environment, structure of agents.				4
II	<b>Problem Solving:</b> State space search; Production systems, search space control, depth-first, breadth-first search. Heuristic search - Hill climbing, best-first search, branch and bound. Problem Reduction, Constraint Satisfaction problems, Means-End Analysis. LA* Algorithm, L-AO*Algorithm.				8

III	<b>Knowledge Representation and Learning :</b> Knowledge and Reasoning: Building a Knowledge Base: Propositional logic, first order Logic, situation calculus. Theorem Proving in First Order Logic, Planning, partial order planning. Uncertain Knowledge and Reasoning, Probabilities, Bayesian Networks. Probabilistic reasoning over time: time and uncertainty, hidden Markova models, Kalman filter, dynamic bayesian network,	8
IV	<b>Learning:</b> Overview of different forms of learning, Supervised learning, Unsupervised learning, Learning Decision Trees, regression and classification with linear model, SVM, Ensemble learning, Reinforcement learning. Artificial neural network	4
V	<b>Game:</b> Search under adversarial circumstances. Optimal decision in game, minimax algorithm, alpha-beta pruning, games with an element of chance, imperfect real time decision, stochastic games, partially observable games, stat of art game program, alternative approaches	8
VI	<b>Introduction to Expert Systems-</b> Inference - Forward chaining - Backward chaining - Languages and tools - Explanation facilities - Knowledge acquisition. Applications: Natural Language Processing: General framework for text processing. Case Study: Sentiment Analysis. Computer Vision: General framework for CV application. Case Study: Object Recognition	8

#### Text Books

1	Russell, S. and Norvig, P. 2015. Artificial Intelligence - A Modern Approach, 3rd edition, Prentice Hall
2	Gabriel, Artificial Intelligence: Artificial Intelligence for Humans (Artificial Intelligence, Machine Learning), Create Space Independent Publishing Platform, First edition , 2016
3	

#### References

1	Introduction to Artificial Intelligence & Expert Systems, Dan W Patterson, PHI.,2010 2. S Kaushik, Artificial Intelligence, Cengage Learning, 1st ed.2011
2	Ric, E., Knight, K and Shankar, B. 2009. Artificial Intelligence, 3rd edition, Tata McGraw Hill.
3	Luger, G.F. 2008. Artificial Intelligence -Structures and Strategies for Complex Problem Solving, 6th edition, Pearson

#### Useful Links

1	<a href="https://www.coursera.org/">https://www.coursera.org/</a>
2	<a href="https://nptel.ac.in/">https://nptel.ac.in/</a>



<b>CO3</b>						2								
<b>CO4</b>														
<p>The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High  Each CO of the course must map to at least one PO.</p>														

Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)					
AY 2023-24					
Course Information					
<b>Programme</b>	M.Tech. (Electronics Engineering)				
<b>Class, Semester</b>	Second Year M. Tech., Sem III				
<b>Course Code</b>	6EN612				
<b>Course Name</b>	Professional Elective 5 –Introduction to Machine Learning				
<b>Desired Requisites:</b>	Linear Algebra, Basic programming				
Teaching Scheme		Examination Scheme (Marks)			
<b>Lecture</b>	3 Hrs/week	<b>MSE</b>	<b>ISE</b>	<b>ESE</b>	<b>Total</b>
<b>Tutorial</b>	-	30	20	50	100
<b>Practical</b>	-				
<b>Interaction</b>	-	<b>Credits: 3</b>			
Course Objectives					
<b>1</b>	To formulate machine learning problems corresponding to different applications. 2				
<b>2</b>	To illustrate a range of machine learning algorithms along with their strengths and weaknesses.				
<b>3</b>	To apply machine learning algorithms to solve problems of moderate complexity.				
<b>4</b>					
Course Outcomes (CO) with Bloom's Taxonomy Level					
At the end of the course, the students will be able to,					
<b>CO1</b>	Apply machine learning algorithms to solve problems in Machine Learning				Apply
<b>CO2</b>	Compare machine learning algorithms along with their strengths and weaknesses				Analyze
<b>CO3</b>	Estimate performance of machine learning algorithms				Evaluate
Module	Module Contents				Hours
I	<b>Introduction to Machine Learning:</b> Linear Algebra, Probability, Computational Basics – Numerical computation and optimization, Types of AI-ML problems - Mapping of Techniques - Regression vs. classification vs. segmentation vs. Forecasting				4
II	<b>Linear and Logistic Regression</b> – Bias/Variance Tradeoff, Regularization, Variants of Gradient Descent, MLE, Applications				8
III	<b>Classical Techniques 1</b> – Bayesian Regression, Binary Trees, Random Forests, SVM, Naïve Bayes, Applications				8
IV	<b>Classical Techniques 2</b> – k-Means, kNN, PCA, Application				8
V	<b>Linear Discrimination and Multilayer Perceptrons :</b> Generalizing the Linear Model, Geometry of the Linear Discriminant, Parametric Discrimination, Gradient Descent, Logistic Discrimination, Discrimination by Regression, The Perceptron, Training a Perceptron, Learning Boolean Functions, Backpropagation Algorithm ,Multilayer Perceptrons,				8
VI	<b>Performance Evaluation:</b> Bootstrapping & Cross Validation, Class Evaluation Measures, Confusion Matrix, F1 score, ROC curve				4
Text Books					

1	Jason Bell, "Machine Learning Hands-On for Developers and Technical Professionals" Wiley 2015
2	Christopher Bishop, "Pattern Recognition and Machine Learning", Springer 2006
3	
4	
<b>References</b>	
1	Understanding Machine Learning. Shai Shalev-Shwartz and Shai Ben-David. Cambridge University Press. 2017.
2	William Whsieh, "Machine Learning Methods in the Environmental Sciences, Neural Networks", Cambridge Univ Press.
3	Goodfellow," Deep Learning"MIT Press,
4	
<b>Useful Links</b>	
1	<a href="https://www.coursera.org/">https://www.coursera.org/</a>
2	<a href="https://nptel.ac.in/">https://nptel.ac.in/</a>
3	
4	

<b>CO-PO Mapping</b>													
	<b>Programme Outcomes (PO)</b>											<b>PSO</b>	
	1	2	3	4	5	6							
<b>CO1</b>	3					2							
<b>CO2</b>				2									
<b>CO3</b>				2									
<b>CO4</b>													
<p>The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High  Each CO of the course must map to at least one PO.</p>													



# Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

AY 2023-24

## Course Information

<b>Programme</b>	M. Tech. (Electronics Engineering)
<b>Class, Semester</b>	Second Year M. Tech., Sem III
<b>Course Code</b>	6IC601
<b>Course Name</b>	Value Education
<b>Desired Requisites:</b>	

Teaching Scheme		Examination Scheme (Marks)			
<b>Lecture</b>	2 Hrs/week	<b>MSE</b>	<b>ISE</b>	<b>ESE</b>	<b>Total</b>
<b>Tutorial</b>	-	30	20	50	100
<b>Practical</b>	-				
<b>Interaction</b>	-				<b>Credits: 2</b>

## Course Objectives

<b>1</b>	To impart knowledge on value of education and self- development.
<b>2</b>	To imbibe good values in students.
<b>3</b>	To highlight importance of character.

## Course Outcomes (CO) with Bloom's Taxonomy Level

At the end of the course, students will be able to,

<b>CO1</b>	Explain value of education and self- development.	Understand
<b>CO2</b>	Summarize importance of good character, and Behaviour development.	Evaluate

Module	Module Contents	Hours
I	Values and self-development –Social values and individual attitudes. Work ethics, Indian vision of humanism, Moral and non- moral valuation. Standards and principles, Value judgments.	6
II	Importance of cultivation of values, Sense of duty. Devotion, Self-reliance, confidence, Concentration. Truthfulness, Cleanliness, Honesty, Humanity, Power of faith, National Unity, Patriotism, Love for nature, Discipline.	6
III	Personality and Behaviour Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline, Punctuality, Love and Kindness, Avoid fault Thinking, Free from anger, Dignity of labour universal brotherhood and religious tolerance, True friendship, Happiness vs. suffering, love for truth, Aware of self-destructive habits, Association and Cooperation, Doing best for saving nature	7
IV	Character and Competence –Holy books vs. Blind faith, Self-management and Good health, science of reincarnation, Equality, Nonviolence, Humility, Role of Women, All religions and same message, Mind your Mind, Self-control. Honesty, Studying effectively	7

## Text Books

1	Chakroborty, S.K. "Values and Ethics for organizations Theory and practice", Oxford University Press, New Delhi
---	---

## References

1	
---	--

## Useful Links

1	<a href="https://nimsuniversity.org/wp-content/uploads/2018/02/Value-Education-Human-Rights-and-Legislative-Procedures.pdf">https://nimsuniversity.org/wp-content/uploads/2018/02/Value-Education-Human-Rights-and-Legislative-Procedures.pdf</a>
---	---

2	<a href="http://cbseacademic.nic.in/web_material/ValueEdu/Value%20Education%20Kits.pdf">http://cbseacademic.nic.in/web_material/ValueEdu/Value%20Education%20Kits.pdf</a>
3	<a href="https://www.verywellmind.com/personality-development-2795425">https://www.verywellmind.com/personality-development-2795425</a>
4	<a href="https://trudreadz.com/2019/09/10/blind-faith-in-religion-destroys-our-ability-to-critically-think-for-ourselves/">https://trudreadz.com/2019/09/10/blind-faith-in-religion-destroys-our-ability-to-critically-think-for-ourselves/</a>

<b>CO-PO Mapping</b>						
<b>Programme Outcomes (PO)</b>						
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>CO1</b>	2				1	2
<b>CO2</b>	1		1			2
<p>The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High  Each CO of the course must map to at least one PO.</p>						

# Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

AY 2023-24

## Course Information

<b>Programme</b>	M. Tech. (Electronics Engineering)
<b>Class, Semester</b>	Second Year M. Tech., Sem IV
<b>Course Code</b>	6EN691,6EN692,6EN693
<b>Course Name</b>	Dissertation Phase IV,V,VI
<b>Desired Requisites:</b>	

Teaching Scheme (Hrs)		Examination Scheme (Marks)			
<b>Lecture</b>	-	<b>LA1</b>	<b>LA2</b>	<b>ESE</b>	<b>Total</b>
<b>Tutorial</b>	-	100	100	100	300
<b>Practical</b>	32				
<b>Interaction</b>	-	<b>Credits: 12</b>			

## Course Objectives

<b>1</b>	To develop the student to apply the knowledge gained to identify problem for research provide the solutions by self-study and interaction with stake holders
<b>2</b>	Acquire knowledge to tackle real world problems of societal concerns
<b>3</b>	Impart flexibility to the student to have increased control over his/ her learning.
<b>4</b>	Teachers would serve as mentor/facilitator of inquiry and reflection rather than as an instructor
<b>5</b>	Enhance student's learning through increased interaction with peers and colleagues.

## Course Outcomes (CO) with Bloom's Taxonomy Level

At the end of the course, students will be able to,

<b>CO1</b>	Search the existing literature and identification of research problem	Analyze
<b>CO2</b>	Design and develop the solution for complex engineering problem	Evaluate
<b>CO3</b>	Create the new knowledge in the specialized field	Create

## Course Contents

In Dissertation Phase IV,V,VI, the student shall consolidate and complete the remaining part of the dissertation work in the field of Electronics Engineering which will consist of implementation of devised algorithm/ system using simulation tool and/or selected hardware, testing, results, measuring performance, comparative analysis, validation of results and conclusions.

The student shall prepare the duly certified final report of Dissertation in standard format for satisfactory completion of the work by the concerned guide and head of the Department.

The students are expected to validate their study undertaken by publishing it at standard platforms.

The investigations and findings need to be validated appropriately at standard platforms – conference and/or peer reviewed journal.

The student will be assessed by a panel of examiners in the department for LA1 and 2. In ESE there will be one external examiner, internal examiner/guide and a chairman for assessment. The assessment will be broadly based on literature study, work undergone, content delivery, presentation skills, documentation and report.

## Text Books

1	As per the research topic
---	---------------------------

## References

1	National and International Journals
---	-------------------------------------

## Useful Links

1	<a href="https://nptel.ac.in/courses/110/104/110104073/">https://nptel.ac.in/courses/110/104/110104073/</a>
---	---

<b>CO-PO Mapping</b>						
	<b>Programme Outcomes (PO)</b>					
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>CO1</b>	1			1		2
<b>CO2</b>	1		1		2	2
<b>CO3</b>		2				2

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High  
Each CO of the course must map to at least one PO.

<b>Assessment</b>				
There are three components of lab assessment, LA1, LA2 and Lab ESE. IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.				
<b>Assessment</b>	<b>Based on</b>	<b>Conducted by</b>	<b>Typical Schedule (for 26-week Sem)</b>	<b>Marks</b>
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 6 Marks Submission at the end of Week 6	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 7 to Week 12 Marks Submission at the end of Week 12	30
Lab ESE	Lab activities, attendance, journal	Lab Course Faculty	During Week 15 to Week 18 Marks Submission at the end of Week 18	40

Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments.

<b>Walchand College of Engineering, Sangli</b> (Government Aided Autonomous Institute)					
<b>AY 2023-24</b>					
<b>Course Information</b>					
<b>Programme</b>	M. Tech. (Electronics Engineering)				
<b>Class, Semester</b>	Second Year M. Tech., Sem IV				
<b>Course Code</b>	6IC602				
<b>Course Name</b>	Constitution of India				
<b>Desired Requisites:</b>					
<b>Teaching Scheme</b>		<b>Examination Scheme (Marks)</b>			
<b>Lecture</b>	2 Hrs/week	<b>MSE</b>	<b>ISE</b>	<b>ESE</b>	<b>Total</b>
<b>Tutorial</b>	-	30	20	50	100
<b>Practical</b>	-				
<b>Interaction</b>	-	<b>Credits: Nil</b>			
<b>Course Objectives</b>					
<b>1</b>	To review and create awareness on various provisions in the constitution of India.				
<b>Course Outcomes (CO) with Bloom's Taxonomy Level</b>					
At the end of the course, students will be able to,					
<b>CO1</b>	Explain the premises informing the twin themes of liberty and freedom from a civil rights perspective.				understand
<b>CO2</b>	Address the growth of Indian opinion regarding modern Indian intellectuals constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism				understand
<b>CO3</b>	Address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution				understand
<b>Module</b>	<b>Module Contents</b>				<b>Hours</b>
I	History of Making of the Indian Constitution Drafting Committee, (Composition & Working				4
II	<b>Philosophy of the Indian Constitution :</b> Preamble, Salient Feature				4
III	<b>Contours of Constitutional Rights:</b> Fundamental Rights; Right to Equality; Right to Freedom; Right against Exploitation; Right to Freedom of Religion; Cultural and Educational Rights; Right to Constitutional Remedies; Directive Principles of State Policy; Fundamental Duties.				5
IV	<b>Organs of Governance:</b> Parliament, Composition, Qualifications and Disqualifications, Powers and Functions, Executive, President, Governor, Council of Ministers Judiciary, Appointment and Transfer of Judges, Qualifications, Powers and Functions				5
V	<b>Local Administration:</b> District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation. Pachayati raj: Introduction, PRI: Zila Pachayat. Elected officials and their roles, CEO ZilaPachayat: Position and role. Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy				5
VI	<b>Election Commission:</b> Election Commission: Role and Functioning. Chief Election Commissioner and Election Commissioners. State Election Commission: Role and Functioning. Institute and Bodies for the welfare of SC/ST/OBC and women.				5
<b>Text Books</b>					

1	Dr. S. N. Busi, Dr. B. R. Ambedkar framing of Indian Constitution, 1st Edition, 2015.
2	M. P. Jain, Indian Constitution Law, 7th Edn., Lexis Nexis, 2014
3	D.D. Basu, Introduction to the Constitution of India, Lexis Nexis, 2015
<b>References</b>	
1	The Constitution of India, 1950 (Bare Act), Government Publication
<b>Useful Links</b>	
1	<a href="https://en.wikipedia.org/wiki/Constituent_Assembly_of_India">https://en.wikipedia.org/wiki/Constituent_Assembly_of_India</a>
2	<a href="https://nptel.ac.in/courses/129/106/129106003/">https://nptel.ac.in/courses/129/106/129106003/</a>
3	<a href="https://nptel.ac.in/noc/courses/noc20/SEM2/noc20-1w02/">https://nptel.ac.in/noc/courses/noc20/SEM2/noc20-1w02/</a>
4	<a href="https://eci.gov.in/about/about-eci/the-functions-electoral-system-of-india-r2/">https://eci.gov.in/about/about-eci/the-functions-electoral-system-of-india-r2/</a>

<b>CO-PO Mapping</b>						
<b>Programme Outcomes (PO)</b>						
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>CO1</b>			1			
<b>CO2</b>	2					
<b>CO3</b>				1		2
<p>The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High Each CO of the course must map to at least one PO.</p>						