



Nutan Maharashtra Vidya Prasarak Mandal's  
**NUTAN MAHARASHTRA INSTITUTE OF  
ENGINEERING & TECHNOLOGY**



Approved by AICTE

Accredited by NAAC & NBA

Affiliated to SPPU

"Samarth Vidya Sankul", Vishnupuri, Telegaon Dabhade, Pune - 410507

Tel. No. 02114 – 231666

E-mail: nmiettalegaon@gmail.com

Web : www.nmiet.edu.in

**Metric 1.4.1 Action Taken by the affiliating university  
on Feedback**

(Click on View Document or Scroll Down)

Sr. No.	Particular	Document
01	Action Taken by the affiliating university on Feedback	<a href="#">View Document</a>

# Action Taken Report



Nutan Maharashtra Vidya Prasarak Mandal's  
**Nutan Maharashtra Institute of Engineering and Technology**  
Samarth Vidya Sankul, Vishnupuri, Talegaon Dabhade, Pune – 410507



## ACTION TAKEN REPORT

### ACADEMIC YEAR 2022-23

- **Suggestion** given by faculties from Department of Computer Engineering for syllabus restructuring – Deep learning and Natural Language processing separate subject will included in Final year Computer Engg. Syllabus BE syllabus.
- **Action Taken By University Board of Study**  
The Deep learning and Natural Language processing separate subject is included in Final year Computer Engg. Syllabus BE syllabus.



*[Signature]*  
Principal  
Nutan Maharashtra Institute  
of Engg. & Technology  
"Samarth Vidya Sankul" Vishnupuri  
Talegaon Dabhade, 410507

Syllabus Copy

**Faculty of Engineering  
Savitribai Phule Pune University, Pune  
Maharashtra, India**



**Curriculum  
for  
Fourth Year of Computer Engineering  
(2019 Course)  
(With effect from 2022-23)**

[www.unipune.ac.in](http://www.unipune.ac.in)



*[Signature]*  
**Principal  
Nutan Maharashtra Institute  
of Engg. & Technology  
"Samarth Vidya Sanstha" Vishnupuri  
Talegaon Dabhade, 410507**

**Final Year of Computer Engineering  
(2019 Course)  
(With effect from 2022-23)**

## Prologue

It is with great pleasure and honor that I share the syllabi for Fourth Year of Computer Engineering (2019 Course) on behalf of Board of Studies, Computer Engineering. We, members of BoS are giving our best to streamline the processes and curricula design.

While revising syllabus, honest and sincere efforts are put to tune Computer Engineering program syllabus in tandem with the objectives of Higher Education of India, AICTE, UGC and affiliated University (SPPU) by keeping an eye on the technological advancements and industrial requirements globally.

Syllabus revision is materialized with sincere efforts, active participation, expert opinions and suggestions from domain professionals. Sincere efforts have been put by members of BoS, teachers, alumni, industry experts in framing the draft with guidelines and recommendations.

Case Studies are included in almost all courses. Course Instructor is recommended to discuss appropriate related recent technology/upgrade/Case Studies to encourage students to study from course to the scenario and think through the largest issues/ recent trends/ utility/ developing real world/ professional skills.

I am sincerely indebted to all the minds and hands who work adroitly to materialize these tasks. I really appreciate your contribution and suggestions in finalizing the contents.

Thanks,

**Dr. Varsha H. Patil**  
Chairman, Board of Studies (Computer Engineering), SPPU, Pune

**links for First Year, Second Year and Third Year Computer Engineering Curriculum 2019:**

1. [http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202019/Rules%20and%20Regulations%20F.E.%202019%20Patt\\_10.012020.pdf](http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202019/Rules%20and%20Regulations%20F.E.%202019%20Patt_10.012020.pdf)
2. [http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202019/First%20Year%20Engineering%202019%20Patt.Syllabus\\_05.072019.pdf](http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202019/First%20Year%20Engineering%202019%20Patt.Syllabus_05.072019.pdf)
3. [http://collegecirculars.unipune.ac.in/sites/documents/Syllabus2020/SE%20Computer%20Engg.%202019%20%20Patt\\_03.072020.pdf](http://collegecirculars.unipune.ac.in/sites/documents/Syllabus2020/SE%20Computer%20Engg.%202019%20%20Patt_03.072020.pdf)
4. [http://collegecirculars.unipune.ac.in/sites/documents/Syllabus2021/Third%20Year%20Engineering%202019%20Pattern\\_16022022.rar](http://collegecirculars.unipune.ac.in/sites/documents/Syllabus2021/Third%20Year%20Engineering%202019%20Pattern_16022022.rar)



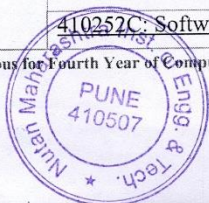
**Savitribai Phule Pune University**  
**Fourth Year of Computer Engineering (2019 Course)**  
 (With effect from Academic Year 2022-23)

**Table of Contents**

Sr. No.	Title	Page Number
1.	<u>Program Outcomes</u>	5
2.	<u>Program Specific Outcomes</u>	5
3.	<u>Course Structure</u> (Course titles, scheme for teaching, credit, examination and marking)	6
4.	<u>General Guidelines</u>	8
5.	<b>Course Contents (Semester VII)</b>	
	<u>410241: Design and Analysis of Algorithms</u>	10
	<u>410242: Machine Learning</u>	13
	<u>410243: Blockchain Technology</u>	17
	<u>410244A: Pervasive Computing</u>	20
	<u>410244B: Multimedia Techniques</u>	23
	<u>410244C: Cyber Security And Digital Forensics</u>	26
	<u>410244D: Object Oriented Modeling And Design</u>	29
	<u>410244E: Digital Signal Processing</u>	32
	<u>410245A: Information Retrieval</u>	35
	<u>410245B: GPU Programming And Architecture</u>	38
	<u>410245C: Mobile Computing</u>	41
	<u>410245D: Software Testing And Quality Assurance</u>	44
	<u>410245E: Compilers</u>	48
	<u>410246: Laboratory Practice III</u>	51
	<u>410247: Laboratory Practice IV</u>	56
	<u>410248: Project Stage I</u>	64
	<u>410249: Audit Course 7</u>	65
6.	<b>Course Contents (Semester VIII)</b>	
	<u>410250: High Performance Computing</u>	72
	<u>410251: Deep Learning</u>	75
	<u>410252A: Natural Language Processing</u>	78
	<u>410252B: Image Processing</u>	81
	<u>410252C: Software Defined Networks</u>	84

Syllabus for Fourth Year of Computer Engineering

#3/128

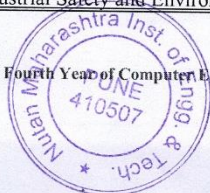


*[Signature]*  
 Principal  
 Nutan Maharashtra Institute  
 of Engg. & Technology  
 "Samarth Vidya Sankul" Vishnupuri  
 Jalegaon Dabhadra, 410507



### BE Computer Engineering 2019 Course tentative Curriculum structure:

Savitribai Phule Pune University Fourth Year of Computer Engineering (2019 Course) (With effect from Academic Year 2022-23)														
Semester VII														
Course Code	Course Name	Teaching Scheme (Hours/week)			Examination Scheme and Marks						Credit Scheme			
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral/Pre	Total	Lecture	Practical	Tutorial	Total
410241	Design and Analysis of Algorithms	03	-	-	30	70	-	-	-	100	3	-	-	3
410242	Machine Learning	03	-	-	30	70	-	-	-	100	3	-	-	3
410243	Blockchain Technology	03	-	-	30	70	-	-	-	100	3	-	-	3
410244	Elective III	03	-	-	30	70	-	-	-	100	3	-	-	3
410245	Elective IV	03	-	-	30	70	-	-	-	100	3	-	-	3
410246	Laboratory Practice III	-	04	-	-	-	50	50	-	100	-	2	-	2
410247	Laboratory Practice IV	-	02	-	-	-	50	-	-	50	-	1	-	1
410248	Project Stage I	-	02	-	-	-	50	-	-	50	-	2	-	2
<b>Total Credit</b>											<b>15</b>	<b>05</b>	-	<b>20</b>
<b>Total</b>		<b>15</b>	<b>08</b>	-	<b>150</b>	<b>350</b>	<b>150</b>	<b>50</b>	-	<b>700</b>	<b>15</b>	<b>05</b>	-	<b>20</b>
410249	Audit Course 7													Grade
<b>Elective III</b>						<b>Elective IV</b>								
410244(A) Pervasive Computing 410244(B) Multimedia Techniques 410244(C) Cyber Security and Digital Forensics 410244(D) Object Oriented Modeling and Design 410244(E) Digital Signal Processing						410245(A) Information Retrieval 410245(B) GPU Programming and Architecture 410245(C) Mobile Computing 410245(D) Software Testing and Quality Assurance 410245(E) Compilers								
<b>Laboratory Practice III:</b> Laboratory assignments Courses- 410241, 410242, 410243						<b>Laboratory Practice IV:</b> Laboratory assignments Courses- 410244, 410245								
<b>Audit Course 7(AC7) Options:</b> AC7- I MOOC- Learn New Skills AC7- II Entrepreneurship Development AC7- III Botnet of Things AC7- IV 3D Printing AC7- V Industrial Safety and Environment Consciousness														





Savitribai Phule Pune University														
Final Year of Computer Engineering (2019 Course)														
(With effect from Academic Year 2022-23)														
Semester VIII														
Course Code	Course Name	Teaching Scheme (Hours/week)			Examination Scheme and Marks						Credit Scheme			
		Lecture	Practical	Tutorial	Mid-Sem	End-Sem	Term work	Practical	Oral/Pre	Total	Lecture	Practical	Tutorial	Total
410250	High Performance Computing	03	-	-	30	70	-	-	-	100	03			03
410251	Deep Learning	03	-	-	30	70	-	-	-	100	03			03
410252	Elective V	03	-	-	30	70	-	-	-	100	03			03
410253	Elective VI	03	-	-	30	70	-	-	-	100	03			03
410254	Laboratory Practice V	-	02	-	-	-	50	50	-	100		01		01
410255	Laboratory Practice VI	-	02	-	-	-	50	-	-	50		01		01
410256	Project Stage II	-	06	-	-	-	100	-	50	150		06		06
<b>Total Credit</b>											<b>12</b>	<b>08</b>	<b>-</b>	<b>20</b>
<b>Total</b>		<b>12</b>	<b>10</b>	<b>-</b>	<b>120</b>	<b>280</b>	<b>200</b>	<b>50</b>	<b>50</b>	<b>700</b>	<b>12</b>	<b>08</b>	<b>-</b>	<b>20</b>
410257	Audit Course 8													Grade
<b>Elective V</b>							<b>Elective VI</b>							
410252(A) Natural Language Processing							410253(A) Pattern Recognition							
410252(B) Image Processing							410253(B) Soft Computing							
410252(C) Software Defined Networks							410253(C) Business Intelligence							
410252(D) Advanced Digital Signal Processing							410253(D) Quantum Computing							
410252(E) Open Elective I							410253(E) Open Elective II							
<b>Lab Practice V:</b>							<b>Lab Practice VI:</b>							
Laboratory assignments Courses- 410250, 410251							Laboratory assignments Courses- 410252, 410253							
<b>Audit Course 8(AC8) Options:</b>														
AC8- I Usability Engineering														
AC8- II Conversational Interfaces														
AC8- III Social Media and Analytics														
AC8- IV MOOC- Learn New Skills														
AC8- V Emotional Intelligence														



*Nutan*  
Principal  
Nutan Maharashtra Institute  
of Engg. & Technology  
"Samarth Vidya Sankul" Vishnupuri  
Telegaon Dabhade, 410507