



*Shri Someshwar Shikshan Prasarak Mandal's*  
**Sharadchandra Pawar College of Engineering & Technology**, Someshwarnagar Tal – Baramati, Dist – Pune 412 306  
(Approved by AICTE New Delhi, Recognized by Govt. of Maharashtra & Affiliated to Savitribai Phule Pune University, Id.no.PU/PN.Engg./445/2012)  
\* Ph. (02112) 283185 \* Fax : (02112) 283185  
\* Web :www.secsomeshwar.ac.in \*Email:sspm1972@gmail.com

To,  
The Coordinator,  
NAAC, Bangalore.

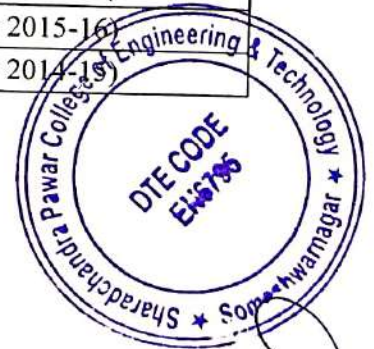
Subject- Implementation of CBCS/Elective to UG.


Reference – 1.2.1 Percentage of programs in which choice Based Credit System (CBCS)/ Elective course system has been implemented.

Dear Sir/ Madam,

As per the directives from Savitribai Phule Pune University (SPPU), Pune, the elective has been implemented at institute as mentioned in the table below. The circulars from SPPU are enclosed herewith.

Program Name	Year of implementation of CBCS/Elective course system
BE Civil Engineering	BE 2012 Pattern Course (Academic Year 2015-16)
	BE 2008 Pattern Course (Academic Year 2014-15)
BE Mechanical Engineering	BE 2012 Pattern Course (Academic Year 2015-16)
	BE 2008 Pattern Course (Academic Year 2014-15)
BE Computer Engineering	BE 2012 Pattern Course (Academic Year 2015-16)
	BE 2008 Pattern Course (Academic Year 2014-15)
BE Electrical Engineering	BE 2012 Pattern Course (Academic Year 2015-16)
	BE 2008 Pattern Course (Academic Year 2014-15)
BE E&TC Engineering	BE 2012 Pattern Course (Academic Year 2015-16)
	BE 2008 Pattern Course (Academic Year 2014-15)



  
**PRINCIPAL**  
Sharadchandra Pawar College of Engineering & Technology  
Someshwarnagar, Tal. Baramati, Dist. Pune (Pin : 412 306)



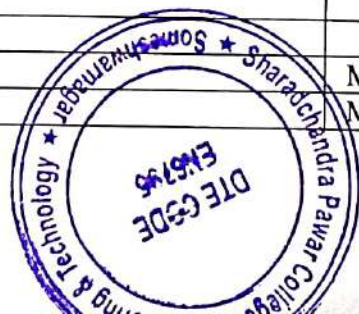
Shri Someshwar Shikshan Prasarak Mandal's  
**Sharadchandra Pawar College of Engineering & Technology,**

Someshwarnagar Tal – Baramati, Dist – Pune 412 306

(Approved by AICTE New Delhi, Recognized by Govt. of Maharashtra & Affiliated to Savitribai Phule Pune University,  
Id.no.PU/PN.Engg./445/2012) \* Ph. (02112) 283185 \* Fax : (02112) 283185 \* Web :www.secsomeshwar.ac.in  
\*Email:sspm1972@gmail.com

**LIST OF ELECTIVE SUBJECTS FOR ACADEMIC YEAR 2020-21**

NAME OF THE ELECTIVE COURSES	PROGRAM NAME	PROGRAM CODE	COURSE CODE	YEAR OF IMPLIMENTAION
<b>BE 2015 PATTERN</b>				
EL-I Power Quality	Electrical Engineering	679529310	403143 B	2021-22
EL-II Electric and Hybrid Vehicles	Electrical Engineering	679529310	403144 D	2021-22
EL-III HVDC and FACTS	Electrical Engineering	679529310	403149 B	2021-22
EL-IV Smart Grid	Electrical Engineering	679529310	403150 A	2021-22
EL-I Data Mining and Warehousing	Computer Engineering	679524510	410244 D	2021-22
EL-II Software Testing and Quality Assurance	Computer Engineering	679524510	410245 B	2021-22
EL-III Embedded and Real Time Operating Systems	Computer Engineering	679524510	410252 C	2021-22
EL-IV Human Computer Interface	Computer Engineering	679524510	410253 B	2021-22
EL-I Architecture and Town Planning	Civil Engineering	679519110	401 004	2021-22
EL-II TQM & MIS in Civil Engineering	Civil Engineering	679519110	401 005	2021-22
EL-III Air Pollution and control	Civil Engineering	679519110	401 009	2021-22
EL-IV Construction Management	Civil Engineering	679519110	401 010	2021-22
EL-I Finite Element Analysis	Mechanical Engineering	679561210	402044 A	2021-22
EL-II Automobile Engineering	Mechanical Engineering	679561210	402045 A	2021-22
EL-III Industrial Engineering	Mechanical Engineering	679561210	402049 B	2021-22
EL-IV Advanced Manufacturing Processes	Mechanical Engineering	679561210	402050 A	2021-22
<b>TE 2019 PATTERN</b>				
EL-I Advanced Microcontroller and Embedded System	Electrical Engineering	679529310	303145 A	2021-22
EL-II Energy Management	Electrical Engineering	679529310	303151 D	2021-22
EL-I Internet of Things and Embedded Systems	Computer Engineering	679524510	310245 A	2021-22
EL-II Software Modelling and Architectures	Computer Engineering	679524510	310254 D	2021-22
EL-I Construction Management	Civil Engineering	679519110	301005 C	2021-22
EL-II Architecture and Town Planning	Civil Engineering	679519110	301015 E	2021-22
EL-I Machining Science & Technology	Mechanical Engineering	679561210	302045-B	2021-22
EL-II Composite Materials	Mechanical Engineering	679561210	302052-A	2021-22



**PRINCIPAL**  
Sharadchandra Pawar College of Engineering & Technology  
Someshwarnagar, Tal. Baramati, Dist. Pune (Pin : 412 305)

## सावित्रीबाई फुले पुणे विद्यापीठ

दूरध्वनी क्रमांक :  
०२०-२५६९१२३३  
२५६०१२५८  
२५६०१२५९



शैक्षणिक विभाग  
गणेशखिंड, पुणे-४११ ००७  
टेलिग्राफ : 'युनिपुणे'  
फॅक्स : ०२०-२५६९१२३३  
वेबसाइट : [www.unipune.ac.in](http://www.unipune.ac.in)  
इ-मेल : [boards@pun.unipune.ac.in](mailto:boards@pun.unipune.ac.in)

संदर्भ क्र. : सी.बी./इंजि / १९९

दिनांक : ०८/०२/२०१५

परिपत्रक क्र. ११/२०१५

**विषय:-** अभियांत्रिकी विद्याशाखेअंतर्गत पदवी अभ्यासक्रमांसाठी Credit System (श्रेयांक पध्दती) लागू करण्यास व प्रथम ते चतुर्थ वर्ष अभियांत्रिकी अभ्यासक्रमाच्या आराखड्यास शैक्षणिक वर्ष २०१५-१६ पासून मान्यता देण्याबाबत.....

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, अभियांत्रिकी विद्याशाखेअंतर्गत पदवी अभ्यासक्रमांसाठी Credit System (श्रेयांक पध्दती) लागू करण्यास व प्रथम ते चतुर्थ वर्ष अभियांत्रिकी अभ्यासक्रमाच्या आराखड्यास शैक्षणिक वर्ष २०१५-१६ पासून मान्यता देण्यात येत आहे.

सदर आराखडा पुणे विद्यापीठाच्या [www.unipune.ac.in](http://www.unipune.ac.in) या वेबसाईटवर Syllabi-Engineering या शीर्षकाखाली उपलब्ध आहे.

पुणे विद्यापीठाच्या सर्व संलग्न अभियांत्रिकी महाविद्यालयांचे मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

संचालकांकरिता  
(म.वि.वि.म.)

कृ.म.

श्रेत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:—

१. मा. अधिष्ठाता, अभियांत्रिकी विद्याशाखा
२. मा. संचालक, बी.सी.यु.डी.
३. मा. प्राचार्य, सर्व अभियांत्रिकी महाविद्यालये
४. मा. संचालक, सर्व मान्यताप्राप्त संस्था
५. मा. परीक्षा नियंत्रक, पुणे विद्यापीठ
६. मा. संचालक, स्पर्धा परीक्षा केंद्र
७. मा. उपकुलसचिव, परीक्षा (१,२)
८. मा. सिस्टीम अॅनालिस्ट डेटा प्रोग्रेसिंग युनिट
९. मा. उपकुलसचिव, प्रवेश
१०. मा. उपकुलसचिव, विकास
११. मा. उपकुलसचिव, पात्रता
१२. सहाय्यक कुलसचिव (परीक्षा समन्वय)
१३. सहाय्यक कुलसचिव (परीक्षा—एस.अॅण्ड टी. विभाग)
१४. सहाय्यक कुलसचिव (गोपनीय कक्ष)
१५. सहाय्यक कुलसचिव (परदेशी विद्यार्थी केंद्र)
१६. सहाय्यक कुलसचिव (सभा दफ्तर)
१७. कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहिःस्थ)
२०. कक्षाधिकारी (पात्रता विभाग)
२१. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब ३६ पीए/३६ /१४, दि. ३० डिसेंबर, २०१४

सावित्रीबाई फुले पुणे विद्यापीठ  
(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :  
०२०-२५६९१२३३  
२५६०१२५८  
२५६०१२५९



शैक्षणिक विभाग  
गणेशखिंड, पुणे-४११ ००७  
टेलिग्राफ : 'युनिपुणे'  
फोनस : ०२०-२५६९१२३३  
वेबसाइट : [www.unipune.ac.in](http://www.unipune.ac.in)  
ई मेल : [boards@pun.unipune.ac.in](mailto:boards@pun.unipune.ac.in)  
दिनांक : २४/१०/२०१५

संघर्ष क्र. सी.बी./डिज/१९९०

परिपत्रक क्र. १११/२०१५

विषय:-

प्रथम वर्ष अभियांत्रिकी (२०१५ पॅटर्न) श्रेयांक पध्दतीप्रमाणे  
अभ्यासक्रमाबाबत...

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, शैक्षणिक वर्ष २०१५-१६ पासून प्रथम वर्ष अभियांत्रिकी (२०१५ पॅटर्न) श्रेयांक पध्दतीप्रमाणे अभ्यासक्रमास मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सा. फु. पुणे विद्यापीठाच्या [www.unipune.ac.in](http://www.unipune.ac.in) या वेबसाईटवर Syllabi-Engineering या शीर्षकाखाली उपलब्ध आहे.

सा. फु. पुणे विद्यापीठाच्या सर्व संलग्न अभियांत्रिकी महाविद्यालयांने मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

संचालकाकरिता  
(म.वि.वि.म.)

श्री माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:-

- १ मा. अधिष्ठाता, अभियांत्रिकी विद्याशाखा
- २ मा. संचालक, बी.सी.यू.डी.
- ३ मा. प्राचार्य, सर्व अभियांत्रिकी महाविद्यालये
- ४ मा. संचालक, सर्व मान्यताप्राप्त संस्था
- ५ मा. परीक्षा नियंत्रक, सा. फु. पुणे विद्यापीठ
- ६ मा. संचालक, स्पर्धा परीक्षा केंद्र
- ७ मा. उपकुलसचिव, परीक्षा (१,२)
- ८ मा. सिस्टीम अॅनालिस्ट डेटा प्रोग्रेसिंग युनिट
- ९ मा. उपकुलसचिव, प्रवेश
- १० मा. उपकुलसचिव, विकास
- ११ मा. उपकुलसचिव, पात्रता
१२. सहाय्यक कुलसचिव (परीक्षा समन्वय)
१३. सहाय्यक कुलसचिव (परीक्षा-एस.अॅण्ड टी. विभाग)
१४. सहाय्यक कुलसचिव (गोपनीय कक्ष)
१५. सहाय्यक कुलसचिव (परदेशी विद्यार्थी केंद्र)
१६. सहाय्यक कुलसचिव (सभा दफ्तर)
१७. कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहिःस्थ)
२०. कक्षाधिकारी (पात्रता विभाग)
२१. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब ५९पीए/५९/१५, दि. ०९ जून, २०१५

# सावित्रीबाई फुले पुणे विद्यापीठ

(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :  
०२०-२५६९१२३३  
२५६०१२५८  
२५६०१२५९



शैक्षणिक विभाग  
गणेशखिंड, पुणे-४११ ००७  
टेलिग्राफ : 'युनिपुणे'  
फॅक्स : ०२०-२५६९१२३३  
वेबसाइट : [www.unipune.ac.in](http://www.unipune.ac.in)  
इ-मेल : [boards@pun.unipune.ac.in](mailto:boards@pun.unipune.ac.in)  
दिनांक : २४.०६.२०१६

संदर्भ क्र. :सी.बी./इंजि. /५४०

परिपत्रक क्रमांक. ६५ /२०१६

विषय:-

द्वितीय वर्ष अभियांत्रिकी श्रेयांक पध्दती (२०१५ पॅटर्न) अभ्यासक्रमांस (सर्व शाखांसाठी) शैक्षणिक वर्ष २०१६-१७ पासून मान्यता देण्याबाबत....

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, द्वितीय वर्ष अभियांत्रिकी श्रेयांक पध्दती (२०१५ पॅटर्न) अभ्यासक्रमांस (सर्व शाखांसाठी) शैक्षणिक वर्ष २०१६-१७ पासून मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सावित्रीबाई फुले पुणे विद्यापीठाच्या [www.unipune.ac.in](http://www.unipune.ac.in) या वेबसाईटवर Syllabi- Engineering या शीर्षकाखाली उपलब्ध आहे.

सावित्रीबाई फुले पुणे विद्यापीठाच्या सर्व संलग्न अभियांत्रिकी महाविद्यालयांचे मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

  
संचालकांकरिता  
(म.वि.वि.म.)

कृ. म. प.

प्रत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:-

१. मा. समन्वयक, अभियांत्रिकी विद्याशाखा
२. मा. संचालक, म.वि.वि.मं
३. मा. प्राचार्य, सर्व अभियांत्रिकी महाविद्यालये
४. मा. संचालक, सर्व मान्यताप्राप्त संस्था
५. मा. परीक्षा नियंत्रक, सा. फु. पुणे विद्यापीठ
६. मा. संचालक, स्पर्धा परीक्षा केंद्र
७. मा. उपकुलसचिव, परीक्षा (१,२)
८. मा. सिस्टीम अॅनालिस्ट डेटा प्रोग्रेसिंग युनिट
९. मा. उपकुलसचिव, नियोजन व विकास
१०. मा. उपकुलसचिव, (पात्रता विभाग)
११. मा. उपकुलसचिव (सभा दफ्तर)
१२. मा. संचालक (परदेशी विद्यार्थी केंद्र)
१३. सहायक कुलसचिव, शैक्षणिक प्रवेश विभाग
१४. सहायक कुलसचिव (गोपनीय कक्ष)
१५. सहायक कुलसचिव (परीक्षा-एस.अॅण्ड टी. विभाग)
१६. सहायक कुलसचिव (परीक्षा समन्वय)
१७. वरिष्ठ कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहिःस्थ)
२०. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब १८ पीए/१८ /१६, दि. २७ मे, २०१६



सावित्रीबाई फुले पुणे विद्यापीठ  
(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :  
०२०-२५६९१२३३  
२५६०१२५८  
२५६०१२५९



शैक्षणिक विभाग  
गणेशखिंड, पुणे-४११ ००७  
टेलिग्राफ : 'युनिपुणे'  
फॅक्स : ०२०-२५६९१२३३  
वेबसाइट : [www.unipune.ac.in](http://www.unipune.ac.in)  
ई-मेल : [boards@pun.unipune.ac.in](mailto:boards@pun.unipune.ac.in)

संदर्भ क्र. सी.बी./इंजि. 1227

दिनांक : 03/09/2017

परिपत्रक क्रमांक. ६३ /२०१७

विषय :- अभियांत्रिकी विद्याशाखेतर्गत तृतीय वर्ष इंजिनिअरींग २०१५  
पॅटर्न पदवी अभ्यासक्रमाचा सुधारित आराखडा व अभ्यासक्रम  
शैक्षणिक वर्ष २०१७-१८ पासून लागू करण्याबाबत.....

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, अभियांत्रिकी विद्याशाखेतर्गत तृतीय वर्ष इंजिनिअरींग २०१५ पॅटर्न पदवी अभ्यासक्रमाचा सुधारित आराखडा व अभ्यासक्रमास शैक्षणिक वर्ष २०१७-१८ पासून मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सावित्रीबाई फुले पुणे विद्यापीठाच्या [www.unipune.ac.in](http://www.unipune.ac.in) या वेबसाईटवर Syllabi-Engineering या शीर्षकाखाली उपलब्ध आहे.

सावित्रीबाई फुले पुणे विद्यापीठाच्या सर्व संलग्न अभियांत्रिकी महाविद्यालयांचे मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

संचालकाकरिता  
(म.वि.वि.मं)

कृ. मा. प.

प्रत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:—

१. मा. समन्वयक, अभियांत्रिकी विद्याशाखा
२. मा. संचालक, म.वि.वि.मं
३. मा. प्राचार्य, सर्व अभियांत्रिकी महाविद्यालये
४. मा. संचालक, सर्व मान्यताप्राप्त संस्था
५. मा. परीक्षा नियंत्रक, सा. फु. पुणे विद्यापीठ
६. मा. संचालक, स्पर्धा परीक्षा केंद्र
७. मा. उपकुलसचिव, परीक्षा (१,२)
८. मा. सिस्टीम ऑनॅलिस्ट डेटा प्रोग्रेसिंग युनिट
९. मा. उपकुलसचिव, नियोजन व विकास
१०. मा. उपकुलसचिव, (पात्रता विभाग)
११. मा. उपकुलसचिव (सभा दफ्तर)
१२. मा. संचालक (प्रदेशी-विद्यार्थी केंद्र) *सातवरीली थ के*
१३. सहायक कुलसचिव, शैक्षणिक प्रवेश विभाग
१४. सहायक कुलसचिव (गोपनीय कक्ष)
१५. सहायक कुलसचिव (परीक्षा—एस.अॅण्ड टी. विभाग)
१६. सहायक कुलसचिव (परीक्षा समन्वय)
१७. वरिष्ठ कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहिःस्थ)
२०. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब ०५ पीए/०५/२०१६, दि. २९ नोव्हेंबर, २०१६

सावित्रीबाई फुले पुणे विद्यापीठ  
(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :  
०२०-२५६९१२३३  
२५६०१२५४  
२५६०१०५९



शैक्षणिक विभाग  
गणेशखिंड, पुणे-४११ ००७  
टेलिग्राफ : 'युनिपुणे'  
फोनस : ०२०-२५६९१२३३  
वेबसाइट : [www.unipune.ac.in](http://www.unipune.ac.in)  
ई-मेल : [boards@pun.unipune.ac.in](mailto:boards@pun.unipune.ac.in)

संभ. क्र. सी.बी./डीज/१९६०

दिनांक : २४/०९/२०१५

परिपत्रक क्र. १११/२०१५

विषय:-

प्रथम वर्ष अभियांत्रिकी (२०१५ पॅटर्न) श्रेयांक पध्दतीप्रमाणे  
अभ्यासक्रमाबाबत...

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, शैक्षणिक वर्ष २०१५-१६ पासून प्रथम वर्ष अभियांत्रिकी (२०१५ पॅटर्न) श्रेयांक पध्दतीप्रमाणे अभ्यासक्रमास मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सा. फु. पुणे विद्यापीठाच्या [www.unipune.ac.in](http://www.unipune.ac.in) या वेबसाईटवर Syllabi-Engineering या शीर्षकाखाली उपलब्ध आहे.

सा. फु. पुणे विद्यापीठाच्या सर्व संलग्न अभियांत्रिकी महाविद्यालयांने मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

संचालककारिता  
(म.वि.वि.स)

श्री माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:-

- १ मा. अधिष्ठाता, अभियांत्रिकी विद्याशाखा
- २ मा. संचालक, बी.सी.यू.डी.
- ३ मा. प्राचार्य, सर्व अभियांत्रिकी महाविद्यालये
- ४ मा. संचालक, सर्व मान्यताप्राप्त संस्था
- ५ मा. परीक्षा नियंत्रक, सा. फु. पुणे विद्यापीठ
- ६ मा. संचालक, स्पर्धा परीक्षा केंद्र
- ७ मा. उपकुलसचिव, परीक्षा (१,२)
- ८ मा. सिस्टीम ऑनॅलिस्ट डेटा प्रोग्रेसिंग युनिट
- ९ मा. उपकुलसचिव, प्रवेश
- १० मा. उपकुलसचिव, विकास
- ११ मा. उपकुलसचिव, पात्रता
१२. सहाय्यक कुलसचिव (परीक्षा समन्वय)
१३. सहाय्यक कुलसचिव (परीक्षा-एस.एँड टी. विभाग)
१४. सहाय्यक कुलसचिव (गोपनीय कक्ष)
१५. सहाय्यक कुलसचिव (परदेशी विद्यार्थी केंद्र)
१६. सहाय्यक कुलसचिव (सभा दफ्तर)
१७. कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहिःस्थ)
२०. कक्षाधिकारी (पात्रता विभाग)
२१. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब ५९पीए/५९/१५, दि. ०९ जून, २०१५

सावित्रीबाई फुले पुणे विद्यापीठ  
(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :  
०२०-२५६९१२३३  
२५६०१२५८  
२५६०१२५९



शैक्षणिक विभाग  
गणेशखिंड, पुणे-४११ ००७  
टेलिग्राफ : 'युनिपुणे'  
फॅक्स : ०२०-२५६९१२३३  
वेबसाइट : [www.unipune.ac.in](http://www.unipune.ac.in)  
ई-मेल : [boards@pun.unipune.ac.in](mailto:boards@pun.unipune.ac.in)  
दिनांक : २४.०६.२०१६

संदर्भ क्र. :सी.बी./इंजि. /५४०

परिपत्रक क्रमांक. ६५ /२०१६

विषय:-

द्वितीय वर्ष अभियांत्रिकी श्रेयांक पध्दती (२०१५ पॅटर्न) अभ्यासक्रमांस (सर्व शाखांसाठी) शैक्षणिक वर्ष २०१६-१७ पासून मान्यता देण्याबाबत....

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, द्वितीय वर्ष अभियांत्रिकी श्रेयांक पध्दती (२०१५ पॅटर्न) अभ्यासक्रमांस (सर्व शाखांसाठी) शैक्षणिक वर्ष २०१६-१७ पासून मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सावित्रीबाई फुले पुणे विद्यापीठाच्या [www.unipune.ac.in](http://www.unipune.ac.in) या वेबसाईटवर Syllabi- Engineering या शीर्षकाखाली उपलब्ध आहे.

सावित्रीबाई फुले पुणे विद्यापीठाच्या सर्व संलग्न अभियांत्रिकी महाविद्यालयांचे मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

संचालकांकरिता  
(म.वि.वि.म.)

कृ. पा. प.

प्रत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:-

१. मा. समन्वयक, अभियांत्रिकी विद्याशाखा
२. मा. संचालक, म.वि.वि.मं
३. मा. प्राचार्य, सर्व अभियांत्रिकी महाविद्यालये
४. मा. संचालक, सर्व मान्यताप्राप्त संस्था
५. मा. परीक्षा नियंत्रक, सा. फु. पुणे विद्यापीठ
६. मा. संचालक, स्पर्धा परीक्षा केंद्र
७. मा. उपकुलसचिव, परीक्षा (१,२)
८. मा. सिस्टीम अॅनालिस्ट डेटा प्रोग्रेसिंग युनिट
९. मा. उपकुलसचिव, नियोजन व विकास
१०. मा. उपकुलसचिव, (पात्रता विभाग)
११. मा. उपकुलसचिव (सभा दफ्तर)
१२. मा. संचालक (परदेशी विद्यार्थी केंद्र)
१३. सहायक कुलसचिव, शैक्षणिक प्रवेश विभाग
१४. सहायक कुलसचिव (गोपनीय कक्ष)
१५. सहायक कुलसचिव (परीक्षा-एस.अॅण्ड टी. विभाग)
१६. सहायक कुलसचिव (परीक्षा समन्वय)
१७. वरिष्ठ कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहिःस्थ)
२०. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब १८ पीए/१८ /१६, दि. २७ मे, २०१६

सावित्रीबाई फुले पुणे विद्यापीठ  
(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :  
०२०-२५६९१२३३  
२५६०१२५८  
२५६०१२५९



शैक्षणिक विभाग  
गणेशखिंड, पुणे-४११ ००७  
टेलिग्राफ : 'युनिपुणे'  
फॅक्स : ०२०-२५६९१२३३  
वेबसाइट : [www.unipune.ac.in](http://www.unipune.ac.in)  
ई-मेल : [boards@pun.unipune.ac.in](mailto:boards@pun.unipune.ac.in)

संदर्भ क्र. सी.बी./इंजि. 1227

दिनांक : 03/09/2017

परिपत्रक क्रमांक. ६३ /२०१७

विषय :- अभियांत्रिकी विद्याशाखेतर्गत तृतीय वर्ष इंजिनिअरींग २०१५  
पॅटर्न पदवी अभ्यासक्रमाचा सुधारित आराखडा व अभ्यासक्रम  
शैक्षणिक वर्ष २०१७-१८ पासून लागू करण्याबाबत.....

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, अभियांत्रिकी विद्याशाखेतर्गत तृतीय वर्ष इंजिनिअरींग २०१५ पॅटर्न पदवी अभ्यासक्रमाचा सुधारित आराखडा व अभ्यासक्रमास शैक्षणिक वर्ष २०१७-१८ पासून मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सावित्रीबाई फुले पुणे विद्यापीठाच्या [www.unipune.ac.in](http://www.unipune.ac.in) या वेबसाईटवर Syllabi-Engineering या शीर्षकाखाली उपलब्ध आहे.

सावित्रीबाई फुले पुणे विद्यापीठाच्या सर्व संलग्न अभियांत्रिकी महाविद्यालयांचे मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

  
संचालकाकरिता  
(म.वि.वि.मं)

क. मा. प.

प्रत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:-

१. मा. समन्वयक, अभियांत्रिकी विद्याशाखा
२. मा. संचालक, म.वि.वि.मं
३. मा. प्राचार्य, सर्व अभियांत्रिकी महाविद्यालये
४. मा. संचालक, सर्व मान्यताप्राप्त संस्था
५. मा. परीक्षा नियंत्रक, सा. फु. पुणे विद्यापीठ
६. मा. संचालक, स्पर्धा परीक्षा केंद्र
७. मा. उपकुलसचिव, परीक्षा (१,२)
८. मा. सिस्टीम ऑनॅलिस्ट डेटा प्रोग्रेसिंग युनिट
९. मा. उपकुलसचिव, नियोजन व विकास
१०. मा. उपकुलसचिव, (पात्रता विभाग)
११. मा. उपकुलसचिव (सभा दफ्तर)
१२. मा. संचालक (भारदेशी विद्यार्थी केंद्र) *सातपुडा केंद्र*
१३. सहायक कुलसचिव, शैक्षणिक प्रवेश विभाग
१४. सहायक कुलसचिव (गोपनीय कक्ष)
१५. सहायक कुलसचिव (परीक्षा-एस.अॅण्ड टी. विभाग)
१६. सहायक कुलसचिव (परीक्षा समन्वय)
१७. वरिष्ठ कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहिःस्थ)
२०. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब ०५ पीए/०५/२०१६, दि. २९ नोव्हेंबर, २०१६



# SAVITRIBAI PHULE PUNE UNIVERSITY



## Board of Studies in Civil Engineering

Structure and Syllabus for B.E. Civil 2015 Course (w. e. f. June, 2018)



**SAVITRIBAI PHULE PUNE UNIVERSITY**  
**Board of Studies in Civil Engineering**  
**Structure for B.E. Civil 2015 Course (w. e. f. June 2018)**

Semester-I											
Subject code	Subject	Teaching Scheme Hrs/Week			In-Semester Assessment	TW	Pract /Or	End-Semester Exam	Total	Credit	
		Lect	Tu	Pr						Th	Lab
401 001	Environmental Engineering II	3	--	2	30	--	50	70	150	3	1
401002	Transportation Engineering	3	--	2	30	50	--	70	150	3	1
401 003	Structural Design and Drawing III	4	--	2	30	--	50	70	150	4	1
401 004	Elective I	3	--	2	30	50	--	70	150	3	1
401 005	Elective II	3	--	--	30	--	--	70	100	3	--
401 006	Project (Phase-I)	--	2	--	--	--	50	--	50	--	2
<b>Total :</b>		16	2	8	150	100	150	350	750	16	6
										<b>22 Credits</b>	

Semester-II											
Subject code	Subject	Teaching Scheme Hrs/Week			In-Semester Assessment	TW	Or	End-Semester Exam	Total	Credit	
		Lect	Tu	Pr						Th	Pr
401 007	Dams and Hydraulic Structures	3	--	2	30	--	50	70	150	3	1
401008	Quantity Surveying, Contracts and tenders	3	--	2	30	--	50	70	150	3	1
401 009	Elective III	3	--	2	30	50	--	70	150	3	1
401 010	Elective IV	3	--	2	30	50	--	70	150	3	1
401 006	Project	--	6	--	--	50	100	--	150	--	6
<b>Total :</b>		12	6	8	120	150	200	280	750	12	10
										<b>22 Credits</b>	

Following will be the list of electives.

### Semester I

<b>Elective-I 401 004</b>	<b>Elective-II 401 005</b>
1. Structural Design of Bridges	1. Matrix Methods of Structural Analysis
2. Systems Approach in Civil Engineering	2. Integrated Water Resources Planning and Management
3. Advanced Concrete Technology	3. TQM & MIS in Civil Engineering
4. Architecture and Town Planning	4. Earthquake Engineering
5. Advanced Engineering Geology with Rock Mechanics	5. Advanced Geotechnical Engineering

### Semester-II

<b>Elective-III 401 009</b>	<b>Elective-IV 401 010</b>
1. Advanced Structural Design	1. Construction Management
2. Statistical Analysis and Computational Methods in Civil Engineering	2. Advanced Transportation Engineering
3. Hydropower Engineering	3. Advanced foundation Engineering.
4. Air Pollution and control	4. Coastal Engineering
5. Finite Element Method in Civil Engineering	<b>5. Open Elective</b>
6. Airport and Bridge Engineering	a) Plumbing Engineering
	b) Green Building Technology
	c) Ferrocement Technology
	d) Sub sea Engineering
	e) Geoinformatics

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



**Syllabus**

**for**

**Fourth Year of Computer Engineering  
(2015 Course)**

**(with effect from 2018-19 )**

## Prologue

It is with great pleasure and honor that I share the syllabi for Fourth Year of Computer Engineering (2015 Course) on behalf of Board of Studies (BoS), Computer Engineering. We, members of BoS are giving our best to streamline the processes and curricula design at both UG and PG programs.

It is always the strenuous task to balance the syllabus with the blend of core subjects, current developments and exotic subjects. By considering all the aspects with adequate prudence the contents are designed to make the graduate competent enough as far as employability is concerned. It is absolutely necessary and justified to add sufficient flexibility in the given constraints leading the curriculum design near to perfection.

It may be highly subjective to include or exclude the courses, but benefit of the learner is always the nucleus the process. Many thoughts, suggestions, recommendations and directions help us to come up with the final contents. For the final year finishing touch is absolutely necessary which is provided with project based learning at the most.

I sincerely thank all the minds and hands who work adroitly to materialize these tasks. I really appreciate everyone's contribution and suggestions in finalizing the contents.

**Dr. Varsha H. Patil**

**Coordinator, Board of Studies (Computer Engineering), SPPU, Pune**

[This document contents **Program Educational Objectives - Program Outcomes - Program Specific Outcomes**(page 3),**Courses (teaching scheme, examination, marks and credit)**(page 4-5), **Courses syllabi**(page 7-85) and **FE to BE courses at a glance**(Page 86-87) ].

Other related Syllabus Links:

[Syllabus for First Year Engineering \(2015 Course\)](#)

[Syllabus for Second Year Computer Engineering \(2015 Course\)](#)

[Syllabus for Third Year Computer Engineering \(2015 Course\)](#)

## Savitribai Phule Pune University, Pune Bachelor of Computer Engineering

### Program Educational Objectives

1. To prepare globally competent graduates having strong fundamentals, domain knowledge, updated with modern technology to provide the effective solutions for engineering problems.
2. To prepare the graduates to work as a committed professional with strong professional ethics and values, sense of responsibilities, understanding of legal, safety, health, societal, cultural and environmental issues.
3. To prepare committed and motivated graduates with research attitude, lifelong learning, investigative approach, and multidisciplinary thinking.
4. To prepare the graduates with strong managerial and communication skills to work effectively as individual as well as in teams.

### Program Outcomes

#### Students are expected to know and be able –

1. To apply knowledge of mathematics, science, engineering fundamentals, problem solving skills, algorithmic analysis and mathematical modeling to the solution of complex engineering problems.
2. To analyze the problem by finding its domain and applying domain specific skills
3. To understand the design issues of the product/software and develop effective solutions with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
4. To find solutions of complex problems by conducting investigations applying suitable techniques.
5. To adapt the usage of modern tools and recent software.
6. To contribute towards the society by understanding the impact of Engineering on global aspect.
7. To understand environment issues and design a sustainable system.
8. To understand and follow professional ethics.
9. To function effectively as an individual and as member or leader in diverse teams and interdisciplinary settings.
10. To demonstrate effective communication at various levels.
11. To apply the knowledge of Computer Engineering for development of projects, and its finance and management.
12. To keep in touch with current technologies and inculcate the practice of lifelong learning.

### Program Specific Outcomes (PSO)

#### A graduate of the Computer Engineering Program will demonstrate-

**PSO1:** Professional Skills-The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying.

**PSO2:** Problem-Solving Skills- The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.

**PSO3:** Successful Career and Entrepreneurship- The ability to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.

**Savitribai Phule Pune University**  
**Fourth Year of Computer Engineering (2015 Course)**  
**(with effect from 2018-19)**

**Semester I**

Course Code	Course	Teaching Scheme Hours / Week		Examination Scheme and Marks						Credit		
		Theory	Practical	In-Sem	End-Sem	TW	PR	OR/ *PRE	Total	TH/ TUT	PR	
410241	<a href="#">High Performance Computing</a>	04	--	30	70	--	--	--	100	04	--	
410242	<a href="#">Artificial Intelligence and Robotics</a>	03	--	30	70	--	--	--	100	03	--	
410243	<a href="#">Data Analytics</a>	03	--	30	70	--	--	--	100	03	--	
410244	<a href="#">Elective I</a>	03	--	30	70	--	--	--	100	03	--	
410245	<a href="#">Elective II</a>	03	--	30	70	--	--	--	100	03	--	
410246	<a href="#">Laboratory Practice I</a>	--	04	--	--	50	50	--	100	--	02	
410247	<a href="#">Laboratory Practice II</a>	--	04	--	--	50	--	*50	100	--	02	
410248	<a href="#">Project Work Stage I</a>	--	02	--	--	--	--	*50	50	--	02	
<b>Total Credit</b>										<b>16</b>	<b>06</b>	
<b>Total</b>		<b>16</b>	<b>10</b>	<b>150</b>	<b>350</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>750</b>	<b>22</b>		
410249	<a href="#">Audit Course 5</a>										<b>Grade</b>	
<b>Elective I</b>				<b>Elective II</b>								
410244 (A) <a href="#">Digital Signal Processing</a>				410245 (A) <a href="#">Distributed Systems</a>								
410244 (B) <a href="#">Software Architecture and Design</a>				410245 (B) <a href="#">Software Testing and Quality Assurance</a>								
410244 (C) <a href="#">Pervasive and Ubiquitous Computing</a>				410245 (C) <a href="#">Operations Research</a>								
410244 (D) <a href="#">Data Mining and Warehousing</a>				410245 (D) <a href="#">Mobile Communication</a>								

**410249-Audit Course 5 (AC5) Options:**

AC5-I [Entrepreneurship Development](#)

AC5-IV: [Industrial Safety and Environment Consciousness](#)

AC5-II: [Botnet of Things](#)

AC5-V: [Emotional Intelligence](#)

AC5-III: [3D Printing](#)

AC5-VI: [MOOC- Learn New Skills](#)

**Abbreviations:**

**TW:** Term Work

**TH:** Theory

**OR:** Oral

**PR:** Practical

**Sem:** Semester

**\*PRE:** Project/ Mini-Project Presentation

**Savitribai Phule Pune University**  
**Fourth Year of Computer Engineering (2015 Course)**  
**(with effect from 2018-19)**

**Semester II**

Course Code	Course	Teaching Scheme Hours / Week		Examination Scheme and Marks						Credit	
		Theory	Practical	In-Sem	End-Sem	TW	PR	OR/ *PRE	Total	TH/ TUT	PR
410250	<a href="#">Machine Learning</a>	03	--	30	70	--	--	--	100	03	--
410251	<a href="#">Information and Cyber Security</a>	03	--	30	70	--	--	--	100	03	--
410252	<a href="#">Elective III</a>	03	--	30	70	--	--	--	100	03	--
410253	<a href="#">Elective IV</a>	03	--	30	70	--	--	--	100	03	--
410254	<a href="#">Laboratory Practice III</a>	--	04	--	--	50	50	--	100	--	02
410255	<a href="#">Laboratory Practice IV</a>	--	04	--	--	50	--	*50	100	--	02
410256	<a href="#">Project Work Stage II</a>	--	06	--	--	100	--	*50	150	02	04
<b>Total Credit</b>									<b>12</b>	<b>10</b>	
<b>Total</b>		<b>12</b>	<b>14</b>	<b>120</b>	<b>280</b>	<b>200</b>	<b>50</b>	<b>100</b>	<b>750</b>	<b>22</b>	
410257	<a href="#">Audit Course 6</a>										<b>Grade</b>
<b>Elective III</b>						<b>Elective IV</b>					
410252 (A) <a href="#">Advanced Digital Signal Processing</a>						410253 (A) <a href="#">Software Defined Networks</a>					
410252 (B) <a href="#">Compilers</a>						410253 (B) <a href="#">Human Computer Interface</a>					
410252 (C) <a href="#">Embedded and Real Time Operating Systems</a>						410253 (C) <a href="#">Cloud Computing</a>					
410252 (D) <a href="#">Soft Computing and Optimization Algorithms</a>						410253 (D) <a href="#">Open Elective</a>					

**410259-Audit Course 6 (AC6) Options:**

AC6-I: [Business Intelligence](#)

AC6-IV: [Usability Engineering](#)

AC6-II: [Gamification](#)

AC6-V: [Conversational Interfaces](#)

AC6-III: [Quantum Computing](#)

AC6-VI: [MOOC- Learn New Skills](#)

**Abbreviations:**

**TW:** Term Work

**TH:** Theory

**OR:** Oral

**PR:** Practical

**Sem:** Semester

**\*PRE:** Project/ Mini-Project Presentation



**SAVITRIBAI PHULE PUNE UNIVERSITY**



**FACULTY OF ENGINEERING**

**SYLLABUS FOR**

**B.E. ELECTRICAL ENGINEERING**

**(2015 course)**

**WITH EFFECT FROM YEAR 2018-2019**

Savitribai Phule Pune University  
FACULTY OF ENGINEERING

B.E. Electrical Engineering (2015 Course)  
(w.e.f. 2018-2019)

SEMESTER-I													
Sr No	Subject Code	Subject Title	Teaching Scheme (Hrs/Week)			Examination Scheme (Marks)					Total Marks	Credit	
			TH	PR	TU	PP		TW	PR	OR		TH / TU	PR + OR
						In Sem	End Sem						
1	403141	<a href="#">Power System Operation and Control</a>	03	02	--	30	70	25	--	25	150	03	01
2	403142	<a href="#">PLC and SCADA Applications</a>	04	02	--	30	70	25	50	--	175	04	01
3	403143	<a href="#">Elective I</a>	03	02	--	30	70	25	--	--	125	03	01
4	403144	<a href="#">Elective II</a>	03	--	--	30	70	--	--	--	100	03	--
5	403145	<a href="#">Control System II</a>	03	02	--	30	70	25	--	25	150	03	01
6	403146	<a href="#">Project I</a>	--	--	02	--	--	--	--	50	50	02	--
	403152	<a href="#">Audit Course V</a>											
<b>TOTAL</b>			16	08	02	150	350	100	50	100	750	18	04
SEMESTER-II													
Sr No	Subject Code	Subject Title	Teaching Scheme (Hrs/Week)			Examination Scheme (Marks)					Total Marks	Credit	
			TH	PR	TU	PP		TW	PR	OR		TH / TU	PR + OR
						In Sem	End Sem						
1	403147	<a href="#">Switchgear and Protection</a>	03	02	--	30	70	50	--	25	175	03	01
2	403148	<a href="#">Power Electronic Controlled Drives</a>	04	02	--	30	70	25	50	--	175	04	01
3	403149	<a href="#">Elective III</a>	03	02	--	30	70	25	--	25	150	03	01
4	403150	<a href="#">Elective IV</a>	03	--	--	30	70	--	--	--	100	03	--
5	403151	<a href="#">Project II</a>	--	--	06	--	--	50	--	100	150	06	--
	403153	<a href="#">Audit Course VI</a>											
<b>TOTAL</b>			13	06	06	120	280	150	50	150	750	19	03

TH Theory lectures hours/week  
PR Practical hours/week  
TU Tutorial hours/week

TW Term work  
OR Oral  
PP Paper- In semester and End Semester

<b>Elective I (403143)</b> A) <u>Fundamentals of Microcontroller MSP430 and its Applications [Open Elective]</u> B) <u>Power Quality</u> C) <u>Renewable Energy Systems</u> D) <u>Digital Signal Processing</u>	<b>Elective II (403144)</b> A) <u>Restructuring and Deregulation</u> B) <u>Electromagnetic Fields</u> C) <u>EHVAC Transmission</u> D) <u>Electric and Hybrid Vehicles</u> E) <u>Special Purpose Machines</u>
<b>Elective III (403149)</b> A) <u>High Voltage Engineering</u> B) <u>HVDC and FACTS</u> C) <u>Digital Control System</u> D) <u>Intelligent Systems and Applications in Electrical Engineering</u> E) <u>Analog Electronics and Sensing Technology [Open Elective]</u>	<b>Elective IV (403150)</b> A) <u>Smart Grid</u> B) <u>Robotics and Automation</u> C) <u>Illumination Engineering</u> D) <u>VLSI Design[Open Elective]</u>

### Audit Course

- Audit Course: Optional for 1<sup>st</sup> and 2<sup>nd</sup> term of BE Electrical Engineering
- ‘Audit Courses’ means a Course in which the student shall be awarded Pass or Fail only. It is left to the discretion of the respective affiliated institute to offer such courses to the students. Evaluation of audit course will be done at institute level itself.
- Teaching-learning process for these subjects is decided by concern faculty/industry experts appointed by the affiliated Engineering College based on the syllabus and guidelines given.
- Marks obtained by student for audit course will not be taken into consideration of SGPA or CGPA.

**Audit Course V**      (A) Hydro Energy Systems  
403152                    (B) Foreign Language – German

**Audit Course VI**     Energy Storage Systems  
403153

# Savitribai Phule Pune University



## Faculty of Science and Technology

### Syllabus for Final Year of Mechanical Engineering

(Course 2015)

**Savitribai Phule Pune University, Pune**  
**BE (Mechanical Engineering) (2015 Course) Semester – VII**

Code	Subject	Teaching Scheme Hrs / week			Examination Scheme					Total Marks	Credits		
		Lect	Tut	Pract	In-Sem	End-Sem	TW	PR	OR		TH	TW	OR/ PR
402041	Hydraulics and Pneumatics	3	-	2	30	70	25	-	25	150	3	-	1
402042	CAD CAM Automation	3	-	2	30	70	25	50	-	175	3	-	1
402043	Dynamics of Machinery	4	-	2	30	70	25	-	25	150	4	-	1
402044	Elective-I	3	-	2	30	70	25	-	-	125	3	1	-
402045	Elective-II	3	-	-	30	70	-	-	-	100	3	-	-
402046	Project Stage-I	-	-	4	-	-	25	-	25	50	-	1	1
Total		16	-	12	150	350	125	50	75	750	16	2	4
											22		

**B. E. (Mechanical Engineering) (2015 Course) Semester – VIII**

Code	Subject	Teaching Scheme Hrs / week			Examination Scheme					Total Marks	Credits		
		Lect	Tut	Pract	In-Sem	End-Sem	TW	PR	OR		TH	TW	OR/ PR
402047	Energy Engineering	3	-	2	30	70	25	-	25	150	3	-	1
402048	Mechanical System Design	4	-	2	30 (1.5 hrs)	70 (3 hrs)	25	-	50	175	4	-	1
402049	Elective-III	3	-	2	30	70	25	-	--	125	3	1	-
402050	Elective-IV	3	-	-	30	70	-	-	-	100	3	-	-
402051	Project Stage-II	-	-	12	-	-	100	-	100	200	-	3	3
Total		13	-	18	120	280	175	-	175	750	13	4	5
											22		

Elective – I				Elective – II			
Code	Subject			Code	Subject		
402044 A	Finite Element Analysis			402045 A	Automobile Engineering		
402044 B	Computational Fluid Dynamics			402045 B	Operation Research		
402044 C	Heating Ventilation and Air Conditioning			402045 C	Energy Audit and Management		
				402045 D	Open Elective**		
Elective – III				Elective – IV			
402049 A	Tribology			402050 A	Advanced Manufacturing Processes		
402049 B	Industrial Engineering			402050 B	Solar & Wind Energy		
402049 C	Robotics			402050 C	Product Design and Development		
				402050 D	Open Elective**		

# Savitribai Phule Pune University, Pune



## Syllabus for TE Civil Engineering (2019 Pattern)

Implemented from Academic year 2021-22

Board of Studies in Civil Engineering

Faculty of Science and Technology

**Savitribai Phule Pune University, Pune**  
**TE (Civil Engineering) 2019 Pattern**  
**(With effect from Academic Year 2021-22)**

**SEMESTER: V**

Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit					
		Theory	Practical	Tutorial	IN-Sem	End-Sem	TW	PR	OR	Total	TH	TW	PR	OR	TUT	Total
301001	Hydrology and Water Resources Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301002	Water Supply Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301003	Design of Steel Structures	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301004	Engineering Economics and Financial Management	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301005	<b>Elective I</b>	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301006	Seminar	--	--	01	--	--	50	--	--	50	--	--	--	--	01	01
301007	Hydrology and Water Resources Engineering <b>Lab</b>	--	02	--	--	--	25	--	--	25	--	01	--	--	--	01
301008	Water Supply Engineering <b>Lab</b>	--	02	--	--	--	--	50	--	50	--	--	01	--	--	01
301009	Design of Steel Structures <b>Lab</b>	--	04	--	--	--	--	--	50	50	--	--	--	02	--	02
301010	Elective I <b>Lab</b>	--	02	--	--	--	25	--	--	25	--	01	--	--	--	01
301011	Audit Course I: Professional Ethics and Etiquettes/ Sustainable Energy Systems	--	--	01	--	GR	--	--	--	GR	--	--	--	--	--	--
<b>Total</b>		<b>15</b>	<b>10</b>	<b>02</b>	<b>150</b>	<b>350</b>	<b>100</b>	<b>50</b>	<b>50</b>	<b>700</b>	<b>15</b>	<b>02</b>	<b>01</b>	<b>02</b>	<b>01</b>	<b>21</b>

**Abbreviations: TH : Theory, TW: Term Work, PR : Practical, OR: Oral, TUT : Tutorial, GR: Grade**

**Elective I: 301005**

S N	Course Code	Course Name
01	301005 a	Advanced Fluid Mechanics and Hydraulic Machines
02	301005 b	Research Methodology and IPR
<b>03</b>	<b>301005 c</b>	<b>Construction Management</b>
04	301005 d	Advanced Concrete Technology
05	301005 e	Matrix Methods of Structural Analysis
06	301005 f	Advanced Mechanics of Structures

SEMESTER-VI																
Course Code	Course Name	Teaching Scheme (Hours/Week)			Examination Scheme and Marks						Credit					
		Theory	Practical	Tutorial	IN-Sem	End-Sem	TW	PR	OR	Total	TH	TW	PR	OR	TUT	Total
301012	Waste Water Engineering	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301013	Design of RC Structures	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301014	Remote Sensing and GIS	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301015	Elective II	03	--	--	30	70	--	--	--	100	03	--	--	--	--	03
301016	Internship	--	--	--	--	--	100	--	--	100	--	04	--	--	--	04
301017	Waste Water Engineering Lab	--	02	--	--	--	--	--	50	50	--	--	--	01	--	01
301018	Design of RC Structures Lab	--	04	--	--	--	--	--	50	50	--	--	--	02	--	02
301019	Remote Sensing and GIS Lab	--	02	--	--	--	50	--	--	50	--	01	--	--	--	01
301020	Elective II Lab	--	02	--	--	--	50	--	--	50	--	01	--	--	--	01
301021	Audit Course II: Leadership and Personality Development/ Industrial Safety	--	--	01	--	GR	--	--	--	GR	--	--	--	--	--	--
<b>Total</b>		<b>12</b>	<b>10</b>	<b>01</b>	<b>120</b>	<b>280</b>	<b>200</b>	<b>--</b>	<b>100</b>	<b>700</b>	<b>12</b>	<b>06</b>	<b>--</b>	<b>03</b>	<b>--</b>	<b>21</b>

**Abbreviations: TH : Theory, TW: Term Work, PR : Practical, OR: Oral and TUT : Tutorial, GR: Grade**

**Elective II: 301015**

S N	Course Code	Course Name
01	301015 a	Advanced Engineering Geology with Rock Mechanics
02	301015 b	Soft Computing Techniques
03	301015 c	Advanced Surveying
04	301015 d	Advanced Geotechnical Engineering
05	301015 e	Architecture and Town Planning
06	301015 f	Solid Waste Management



**Curriculum  
for  
Third Year of Computer Engineering  
(2019 Course)**

**(With effect from 2021-22)**



<http://unipune.ac.in>

**Faculty of Science and Technology**

**Savitribai Phule Pune University  
Maharashtra, India**

**Third Year of Computer Engineering  
(2019 Course)  
(With effect from 2021-22)**

## Prologue

It is with great pleasure and honor that I share the syllabi for Third 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 and Second Year Computer Engineering Curriculum 2019:**

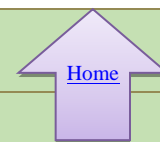
1. [http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202019/Rules%20and%20Regulations%20F.E.%202019%20Patt\\_10.012020.pdf](http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202019/Rules%20and%20Regulations%20F.E.%202019%20Patt_10.012020.pdf)
2. [http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202019/First%20Year%20Engineering%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)

**Savitribai Phule Pune University**  
**Third Year of Computer Engineering (2019 Course)**  
 (With effect from Academic Year 2021-22)

**Table of Contents**

Sr. No.	Title	Page Number
1.	<a href="#">Program Outcomes</a>	04
2.	<a href="#">Program Specific Outcomes</a>	04
3.	<a href="#">Course Structure</a> (Course titles, scheme for teaching, credit, examination and marking)	05
4.	<a href="#">General Guidelines</a>	07
5.	<b>Course Contents (Semester V)</b>	
	<a href="#">310241: Database Management Systems</a>	10
	<a href="#">310242: Theory of Computation</a>	13
	<a href="#">310243: Systems Programming and Operating System</a>	16
	<a href="#">310244: Computer Networks and Security</a>	19
	<a href="#">310245A: Elective I- Internet of Things and Embedded Systems</a>	22
	<a href="#">310245B: Elective I- Human Computer Interface</a>	25
	<a href="#">310245C: Elective I- Distributed Systems</a>	28
	<a href="#">310245D: Elective I- Software Project Management</a>	31
	<a href="#">310246: Database Management Systems Laboratory</a>	33
	<a href="#">310247: Computer Networks and Security Laboratory</a>	37
	<a href="#">310248: Laboratory Practice I</a>	40
	<a href="#">310249: Seminar and Technical Communication</a>	44
	<a href="#">310250: Audit Course 5</a>	46
6.	<b>Course Contents (Semester VI)</b>	
	<a href="#">310251: Data Science and Big Data Analytics</a>	53
	<a href="#">310252: Web Technology</a>	56
	<a href="#">310253: Artificial Intelligence</a>	59
	<a href="#">310254A: Elective II- Information Security</a>	62
	<a href="#">310254B: Elective II- Augmented and Virtual Reality</a>	65
	<a href="#">310254C: Elective II- Cloud Computing</a>	68
	<a href="#">310254D: Elective II- Software Modeling and Architectures</a>	71
	<a href="#">310255: Internship</a>	74
	<a href="#">310256: Data Science and Big Data Analytics Laboratory</a>	77
	<a href="#">310257: Web Technology Laboratory</a>	82
	<a href="#">310258: Laboratory Practice II</a>	85
	<a href="#">310259: Audit Course 6</a>	91
7.	<a href="#">Acknowledgement</a>	97
8.	<a href="#">Task Force at Curriculum Design</a>	98

**Savitribai Phule Pune University**  
**Bachelor of Computer Engineering**



**Program Outcomes (POs)**

**Learners are expected to know and be able to**

<b>PO1</b>	<b>Engineering knowledge</b>	Apply the knowledge of mathematics, science, Engineering fundamentals, and an Engineering specialization to the solution of complex Engineering problems.
<b>PO2</b>	<b>Problem analysis</b>	Identify, formulate, review research literature and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and Engineering sciences.
<b>PO3</b>	<b>Design / Development of Solutions</b>	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.
<b>PO4</b>	<b>Conduct Investigations of Complex Problems</b>	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.
<b>PO5</b>	<b>Modern Tool Usage</b>	Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modeling to complex Engineering activities with an understanding of the limitations.
<b>PO6</b>	<b>The Engineer and Society</b>	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.
<b>PO7</b>	<b>Environment and Sustainability</b>	Understand the impact of the professional Engineering solutions in societal and Environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
<b>PO8</b>	<b>Ethics</b>	Apply ethical principles and commit to professional ethics and responsibilities and norms of Engineering practice.
<b>PO9</b>	<b>Individual and Team Work</b>	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
<b>PO10</b>	<b>Communication Skills</b>	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.
<b>PO11</b>	<b>Project Management and Finance</b>	Demonstrate knowledge and understanding of 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.
<b>PO12</b>	<b>Life-long Learning</b>	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.

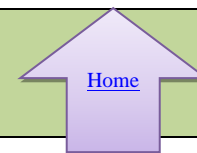
**Program Specific Outcomes (PSO)**

**A graduate of the Computer Engineering Program will demonstrate-**

<b>PSO1</b>	<b>Professional Skills-</b> The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying complexities.
<b>PSO2</b>	<b>Problem-Solving Skills-</b> The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.
<b>PSO3</b>	<b>Successful Career and Entrepreneurship-</b> The ability to employ modern computer languages, environments and platforms in creating innovative career paths to be an entrepreneur and to have a zest for higher studies.

Savitribai Phule Pune University															
Third Year of Computer Engineering (2019 Course)															
(With effect from Academic Year 2021-22)															
Semester V															
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	Total	Lecture	Practical	Tutorial	Total	
310241	<a href="#">Database Management Systems</a>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310242	<a href="#">Theory of Computation</a>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310243	<a href="#">Systems Programming and Operating System</a>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310244	<a href="#">Computer Networks and Security</a>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310245	<b>Elective I</b>	03	-	-	30	70	-	-	-	100	03	-	-	03	
310246	<a href="#">Database Management Systems Laboratory</a>	-	04	-	-	-	25	25	-	50	-	02	-	02	
310247	<a href="#">Computer Networks and Security Laboratory</a>	-	02	-	-	-	25	-	25	50	-	01	-	01	
310248	<a href="#">Laboratory Practice I</a>	-	04	-	-	-	25	25	-	50	-	02	-	02	
310249	<a href="#">Seminar and Technical Communication</a>	-	-	01	-	-	50	-	-	50	-	-	01	01	
<b>Total</b>		<b>15</b>	<b>10</b>	<b>01</b>	<b>150</b>	<b>350</b>	<b>125</b>	<b>50</b>	<b>25</b>	<b>700</b>	<b>15</b>	<b>05</b>	<b>01</b>	<b>21</b>	
310250	<a href="#">Audit Course 5</a>											<b>Grade</b>			
<b>Total Credit</b>											<b>15</b>	<b>05</b>	<b>01</b>	<b>21</b>	
<b>310245 Elective I Options:</b>					<b>310250 Audit Course 5 Options:</b>										
310245(A) <a href="#">Internet of Things and Embedded Systems</a>					310250 (A) <a href="#">Cyber Security</a>										
310245(B) <a href="#">Human Computer Interface</a>					310250 (B) <a href="#">Professional Ethics and Etiquettes</a>										
310245(C) <a href="#">Distributed Systems</a>					310250 (C) <a href="#">Learn New Skills</a>										
310245(D) <a href="#">Software Project Management</a>					310250 (D) <a href="#">Engineering Economics</a>										
					310250 (E) <a href="#">Foreign Language</a>										
<b>Laboratory Practice I</b>															
Assignments from <b>Systems Programming and Operating System</b> and <b>Elective I</b>															

**Savitribai Phule Pune University**  
**Third Year of Computer Engineering (2019 Course)**  
 (With effect from Academic Year 2021-22)



**Semester VI**

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	Total	Lecture	Practical	Tutorial	Total	
310251	<a href="#">Data Science and Big Data Analytics</a>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310252	<a href="#">Web Technology</a>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310253	<a href="#">Artificial Intelligence</a>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310254	<b>Elective II</b>	04	-	-	30	70	-	-	-	100	03	-	-	03	
310255	<a href="#">Internship**</a>	-	-	-	-	-	100**	-	-	100	-	-	-	04**	
310256	<a href="#">Data Science and Big Data Analytics Laboratory</a>	-	04	-	-	-	50	25	-	75	-	02	-	02	
310257	<a href="#">Web Technology Laboratory</a>	-	02	-	-	-	25	-	25	50	-	01	-	01	
310258	<a href="#">Laboratory Practice II</a>	-	04	-	-	-	50	25	-	75	-	02	-	02	
<b>Total</b>		<b>12</b>	<b>10</b>	<b>-</b>	<b>120</b>	<b>280</b>	<b>225</b>	<b>50</b>	<b>25</b>	<b>700</b>	<b>12</b>	<b>09</b>	<b>-</b>	<b>21</b>	
310259	<a href="#">Audit Course 6</a>											<b>Grade</b>			
<b>Total</b>		<b>12</b>	<b>09</b>	<b>-</b>											<b>21</b>
<b>310254 Elective II Options:</b>					<b>310259 Audit Course 6 Options:</b>										
310254(A) <a href="#">Information Security</a>					310259(A) <a href="#">Digital and Social Media Marketing</a>										
310254(B) <a href="#">Augmented and Virtual Reality</a>					310259(B) <a href="#">Sustainable Energy Systems</a>										
310254(C) <a href="#">Cloud Computing</a>					310259(C) <a href="#">Leadership and Personality Development</a>										
310254(D) <a href="#">Software Modeling and Architectures</a>					310259(D) <a href="#">Foreign Language</a>										
					310259(E) <a href="#">Learn New Skills</a>										
<b>Laboratory Practice II:</b>															
Assignments from <b>Artificial Intelligence</b> and <b>Elective II</b> .															
<b>** Internship:</b>															
<b>Internship</b> guidelines are provided in course curriculum sheet.															
<b>\$\$\$ Hours/Week for Theory Course in Third Year of Engineering, Semester VI:</b>															
As per the apex bodies' recommendations and guidelines, it is need of the day to train the pre-final year students for the industrial readiness through internship. As per the guidelines of AICTE, the duration of internship is 4-6 weeks after completion of semester V and before commencement of semester VI, so it is apparent that the contact hours of the TE students need to be managed meticulously. It becomes mandatory as per the structure that 4 credits for internship must be earned by the students. <b>Per semester, 15 weeks duration that is suggested ideally by the affiliated university will eventually reduce to fruitful 12 weeks after the implementation of the revised curriculum (2019 Course). With the evaluatory introduction of internship in the structure, we are left with the choice of 4 theory courses in the sixth semester with 12 weeks instead of traditional 15 weeks.</b> To balance the credits and to achieve the minimum required contact hours, it is the reasonable choice to allot 4 hours / week for each theory course of the sixth semester of Third year of Engineering. The additional one lecture/ week will definitely be instrumental in achieving the largest of minimum contact hours. As such there is no correspondence of weekly load and credits earned, the credit allotted per course remain intact despite of the change. <b>So it is almost imperative that the commencement of VI Semester need to be approx. 3 weeks beyond the schedule.</b>															

# Savitribai Phule Pune University, Pune



**Faculty of Science and Technology**

Board of Studies

**Electrical Engineering**

Syllabus

**Third Year Electrical Engineering**

**(2019 course)**

**(w.e.f. 2021-22)**

**Savitribai Phule Pune University, Pune**  
**Syllabus: Third Year (TE) Electrical Engineering (2019 course)**  
**(w.e.f 2021-22)**

**SEMESTER-I**

Course code	Course Name	Teaching Scheme				Examination Scheme						Credit				
		Th	Pr	Tu	SEM /PW /IN	ISE	ESE	TW	PR	OR	Total	Th	Pr	Tu	SEM /PW /IN	Total
303141	<u>Industrial and Technology Management</u>	3	0	0	0	30	70	0	0	0	100	3	0	0	0	3
303142	<u>Power Electronics</u>	3	4#	0	0	30	70	0	50	0	150	3	2	0	0	5
303143	<u>Electrical Machines-II</u>	3	2	0	0	30	70	25	25	0	150	3	1	0	0	4
303144	<u>Electrical Installation Design and Condition Based Maintenance</u>	3	4#	0	0	30	70	25	0	25	150	3	2	0	0	5
303145	<u>Elective-I</u>	3	0	0	0	30	70	0	0	0	100	3	0	0	0	3
303146	<u>Seminar</u>	0	0	0	1	0	0	50	0	0	50	0	0	0	1	1
303147	<u>Audit course-V</u>	2*	0	0	0	0	0	0	0	0	0	GRADE: PP/NP				0
<b>Total</b>		<b>15</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>150</b>	<b>350</b>	<b>100</b>	<b>75</b>	<b>25</b>	<b>700</b>	<b>15</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>21</b>

**303145: Elective-I**

**303147 : Audit Course-V**

303145A : Advanced Microcontroller and Embedded System

303147A : Energy storage systems

303145B : Digital Signal Processing

303147B : Start-up & Disruptive innovation

303145C : Open Elective

**SEMESTER-II**

Course code	Course Name	Teaching Scheme				Examination Scheme						Credit				
		Th	Pr	Tu	SEM /PW /IN	ISE	ESE	TW	PR	OR	Total	Th	Pr	Tu	SEM /PW /IN	Total
303148	<u>Power System-II</u>	3	2	1	0	30	70	25	50	0	175	3	1	1	0	5
303149	<u>Computer Aided Design of Electrical Machines</u>	3	4#	0	0	30	70	50	0	25	175	3	2	0	0	5
303150	<u>Control System Engineering</u>	3	2\$	1\$	0	30	70	25	0	25	150	3	1	0	0	4
303151	<u>Elective-II</u>	3	0	0	0	30	70	0	0	0	100	3	0	0	0	3
303152	<u>Internship</u>	0	0	0	4	0	0	100	0	0	100	0	0	0	4	4
303153	<u>Audit Course VI</u>	2*	0	0	0	0	0	0	0	0	0	GRADE: PP/NP				0
<b>Total</b>		<b>12</b>	<b>8</b>	<b>2</b>	<b>4</b>	<b>120</b>	<b>280</b>	<b>200</b>	<b>50</b>	<b>50</b>	<b>700</b>	<b>12</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>21</b>

**303151: Elective-II**

**303153 : Audit Course-VI**

303151A : IoT and its Applications in Electrical Engineering

303153A: Ethical Practices for Engineers

303151B : Electrical Mobility

303153B : Project Management

303151C: Cybernetic Engineering

303151D: Energy Management

#Practical consists of Part A & part B. PART A; Regular experiments & part B; to bridge the gap between theory & actual industrial practices. For subject 303144; there will be auto cad drawing on Electrical installation, Electrical wiring, cabling etc. For 303149, Part A, Regular drawing by hand & part B same drawing by AutoCAD.

\$ tutorial credit merged with Practical.

\* Conduct over and above these lectures.



# Savitribai Phule Pune University

## Faculty of Science & Technology



Curriculum/Syllabus

For

**Third Year**

**Bachelor of Engineering  
(Choice Based Credit System)**

**Mechanical Engineering  
(2019 Course)**

**Board of Studies – Mechanical and Automobile Engineering  
(With Effect from Academic Year 2021-22)**

**Savitribai Phule Pune University**  
**Board of Studies - Automobile and Mechanical Engineering**  
**Undergraduate Program - Mechanical Engineering (2019 pattern)**

Course Code	Course Name	Teaching Scheme (Hrs./week)			Examination Scheme and Marks						Credit			
		TH	PR	TUT	ISE	ESE	TW	PR	OR	Total	TH	PR	TUT	Total
<b>Semester-V</b>														
302041	Numerical & Statistical Methods	3	-	1	30	70	25	-	-	125	3	-	1	4
302042	Heat & Mass Transfer	3	2	-	30	70	-	50	-	150	3	1	-	4
302043	Design of Machine Elements	3	2	-	30	70	-	-	25	125	3	1	-	4
302044	Mechatronics	3	2	-	30	70	-	-	25	125	3	1	-	4
302045	<b>Elective I</b>	3	-	-	30	70	-	-	-	100	3	-	-	3
302046	Digital Manufacturing Laboratory	-	2	-	-	-	50	-	-	50	-	1	-	1
302047	Skill Development	-	2	-	-	-	25	-	-	25	-	1	-	1
302048	Audit course - V <sup>s</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>		<b>15</b>	<b>10</b>	<b>1</b>	<b>150</b>	<b>350</b>	<b>100</b>	<b>50</b>	<b>50</b>	<b>700</b>	<b>15</b>	<b>5</b>	<b>1</b>	<b>21</b>
<b>Semester-VI</b>														
302049	Artificial Intelligence & Machine Learning	3	2	-	30	70	-	-	25	125	3	1	-	4
302050	Computer Aided Engineering	3	2	-	30	70	-	50	-	150	3	1	-	4
302051	Design of Transmission Systems	3	2	-	30	70	-	-	25	125	3	1	-	4
302052	<b>Elective II</b>	3	-	-	30	70	-	-	-	100	3	-	-	3
302053	Measurement Laboratory	-	2	-	-	-	50	-	-	50	-	1	-	1
302054	Fluid Power & Control Laboratory	-	2	-	-	-	50	-	-	50	-	1	-	1
302055	Internship/Mini project *	-	4	-	-	-	100	-	-	100	-	4	-	4
302056	Audit course - VI <sup>s</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>		<b>12</b>	<b>14</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>9</b>	<b>-</b>	<b>21</b>
<b>Elective-I</b>						<b>Elective-II</b>								
302045-A	Advanced Forming & Joining Processes	302052-A			Composite Materials									
302045-B	Machining Science & Technology	302052-B			Surface Engineering									
<b>Abbreviations:</b> TH: Theory, PR: Practical, TUT: Tutorial, ISE: In-Semester Exam, ESE: End-Semester Exam, TW: Term Work, OR: Oral														
<b>Note:</b> Interested students of TE (Automobile Engineering and Mechanical Engineering) can opt for any one of the audit course from the list of audit courses prescribed by BOS (Automobile and Mechanical Engineering)														
<b>Instructions:</b>														
<ul style="list-style-type: none"> <li>Practical/Tutorial must be conducted in FOUR batches per division only.</li> <li>Minimum number of Experiments/Assignments in PR/Tutorial shall be carried out <b>as mentioned in the syllabi</b> of respective courses.</li> <li>Assessment of tutorial work has to be carried out similar to term-work. The Grade cum marks for Tutorial and Term-work shall be awarded on the basis of <b>continuous evaluation</b>.</li> <li><sup>s</sup>Audit course is mandatory but non-credit course. Examination has to be conducted at the end of Semesters for award of grade at institute level. Grade awarded for audit course shall not be calculated for grade point &amp; CGPA.</li> </ul>														