



E.G.S. PILLAY ENGINEERING COLLEGE (AUTONOMOUS)

NAGAPATTINAM – 611 002. TAMILNADU, INDIA

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

(Accredited by NAAC with 'A' Grade and NBA)

Email: principal@egspec.org website: www.egspec.org Ph: 04365-251112

B.E. Biomedical Engineering

Minutes of First Board of Studies Meeting

Board of Studies (BOS) Meeting of Department of the Bio Medical Engineering has been conducted on 19.08.2020 at 10 A.M in Polytechnic Computer Department Lab through **Online**.

Members Attended

S.No	NAME	DESIGNATION
1	Dr.R.Ganesan Prof. & HOD / BME	Chairman
2	Dr.Prathish Raja Associate Professor/BME	Member
3	Mrs.N.Gopikha Assistant Professor/BME	Member
4	Dr. TamilselvanJayavelu Assistant Professor, Department of Bio Technology Anna University	Expert from Anna University
5	Dr. C.Ram Kumar Assistant Professor Department of Bio Medical Engineering Dr.N.G.P.I.T	Expert from outside the parent University
6	Dr.B. Padmapriya Associate Professor, Department of Biomedical Engineering PSG College of Technology	Expert from outside the parent University
7	Ms.T. Hemapreetha Clinical Ultrasound Product Specialist BPL Medical Technologies, Cochin	Expert from the Industry
8	K.M.K.I. Nawasdeen Parent Nagapattinam.	Parent

Agenda of meeting:

1. Review of curriculum under 2019 Regulation.
2. Framing syllabus for 3rd and 4th Semester under 2019.
3. Any other matter.

ATTESTED

Dr. S. RAMABALAN, M.E., Ph.D.
PRINCIPAL

E.G.S. Pillay Engineering College,
Thethi, Nagore - 611 002.
Nagapattinam (Dt) Tamil Nadu.



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The members presented in the Board of studies meeting is given

HOD of the Department welcomed the Board Members and faculties who were present for the First BOS meeting for reviewing the Vision and Mission of the Department, curriculum under 2019 and framing syllabus for 3rd and 4th semester under 2019 through online mode as per the direction of the director, Center for Academic Courses, Anna University, Chennai, vide letter No.1301/AU/CAC/2020, and started the Presentation. Eight electives have been offered by the department of BME to the rest of the departments. After Presentation HOD/BME requested the Board Members for their Valuable suggestions.

Suggestion

The following points were discussed by the expert one by one,

Dr. B.Padmapriya, Associate Professor, BME-PSGCT

1. LTPC Along with that indicates whether it is a core engineering subject or it is a humanity subject or Life science subject. AICTE will ask how many credits is allotted for each category
2. Everywhere before the unit course objective has been mentioned, 1 course objective from each of the unit is the best practice. Normally subject has got 5 units; from each of the units what the student is going to learn has to be the objective. So totally 5 objectives.
3. Text book and References should be 2 Text books 4 reference text books
4. In between the topics separate it by a comma and the subtopics should be separated by a semicolon
5. Biosensors and Transducers-Unit IV-Types of biosensors-specify, Rename Unit V, Changes the subject name as Biosensors and Measurements instead of Biosensors and Transducers.
6. No. of hours for each unit can be customised.
7. Course outcome can be 2 for Lab
8. Biomedical Instrumentation Lab for 4th exp simulation and analysis term can be used
9. In Bio signal Processing subject, what kind of signals has to be considered for processing. In filtering process please specify some application part like ECG signal, removal of noise which can give justification for subject.
10. Biomedical Instrumentation Lab has BP measurement, In theory, it has to be included in Unit V.

ATTESTED

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11. No. of Exp. can be reduced into 10 instead of 12 in each lab.
12. Bio Control system subject name to be changed into Control System. And Bio Signal processing subject name to be changed into Bio Signal processing and Systems.
13. Value Added Courses to be conducted every year.

Dr.C.Ram Kumar- Assistant Professor/ BME-NGPIT

1. Instead of giving 4 credits to Fundamentals of Biochemistry, give 4 credits to biomedical circuits and networks.
2. In Mathematics for Biomedical engineering subject - Instead of Fourier Series and Fourier Transform in 3rd unit bring in Partial Differential derivations can be used towards Biomedical engineering applications to strengthen your subject topic, else change the subject name.
3. Text Book Number should be 2.
4. In biomedical Circuits and Networks, interchange the units, 2nd unit shift to 1st unit, and resonance circuit as 3rd unit, remove the Laplace transform. Convert 3rd unit as 2 units.
5. Course Outcome should be 5.
6. In fundamentals of biochemistry course outcomes, Phrases should be clear, Start with analyse, Understand. Refer Bloom's Taxonomy.
7. In Biochemistry subject, under Diabetes Mellitus, What are the things have to be studied has to be mentioned clearly? Refer Anna University syllabus.
8. Text Books can be Martin or Rafi.
9. In Biosensors and Transducers add an unit for Display and Recording devices.
10. In devices and circuits lab experiments like Schmitt trigger can be given as mini project.
11. In Digital Electronics and Integrated Circuits subject, remove PPL, Logic families, CMOS in Unit III.
12. In Digital Electronics and Integrated Circuits subject, 4th unit can cover flip flop or register. ADC and DAC is enough. Cardio vascular Applications can be included.
13. Include Text Book For LIC and Digital Electronics.
14. Phase shift oscillator, Schmitt trigger experiment can be added.
15. Instead of Digital electronics and Integrated Circuits Lab change to Analog and Digital and Integrated Circuits Laboratory.
16. Instead of BCD experiment include flip-flop or register experiment cut down LIC exp.
17. Basics of Signals and introduction can be covered in Unit I of Bio signal Processing.
18. In Bio signal processing, Unit II can be IIR filter, Unit III can be FIR filter, 4th unit can be applications, Unit V can be simplified.

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Mrs. T. Hemapreeta - BPL Medical Technologies, Cochin

1. In Human anatomy and Physiology subject- remove some topics which are not important for Biomedical students and add some topics in digestive system is students pursue their career in oncology.
2. In Biomedical controls systems- Applications related to Biomedical engineering like automatic delivery of insulin can be included.

Dr. TamilselvanJayavelu, Assistant Professor, Department of Bio Technology, Anna University

1. Pathology lab experiment no.1 can be moved to Physiology or Biochemistry.
2. Exp.2 is already present in Biochemistry.
3. Parts of Compound Microscopes can be moved from lab to theory course. In addition, the topic "Flow cytometry and its applications" can also be included.
4. Exp.12 The absorption spectrum of Hemoglobin belongs to biochemistry lab.
5. Instead of Pathology and Microbiology, it can be as Basics of Pathology and Microbiology.
6. DNA/RNA, Proteins, Lipids, Carbohydrates can be included in Biochemistry.
7. Human Anatomy and Physiology; Pathology and Microbiology syllabus are almost similar to Anna university syllabus, but few topics are removed. Kindly adopt Anna university syllabus content to have complementarity with theory and lab courses.

Finally HOD/BME assured to rectify all the suggestion and thanked everyone for their valuable suggestions and comments.

Chairman (BOS)

P. Senthil

Subject Expert

P. Senthil
University Nominee

P. Senthil
Industry Expert

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Narasimhan

Parent

Action Taken - Suggestions carried out and updated

As per the instruction from the Experts, All the points are carried out and updated on the syllabus and Curriculum Successfully.

As per the instruction from the students feedback, some of the topic included in the fifth semester subjects namely Medical Optics (topic included is photo dynamic therapy) and updated versions of software we purchased and is available in our laboratory.

Thank you

Dr.R.Ganesan
Professor / Head Department of Biomedical Engineering
E.G.S.Pillay Engineering College

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Minutes of 2nd Board of Studies (BOS) Meeting

Name of the Department	Biomedical Engineering
Name of the Programme	B.E., Biomedical Engineering
Meeting No.	02
Date and Time	05.02.2021 & 11.00 AM
Venue / Platform	Google Meet App
Google Meet Link	https://meet.google.com/iii-ubmb-iar
Google Meet App Moderator	Dr.R.Ganesan , Professor & Head (Biomedical Engineering)

The names of members with Designation.

S.No	NAME	DESIGNATION
1.	Dr. Tamilselvan Jayavelu, Anna University	Assistant Professor, Department of Biotechnology Anna University Expert from Anna University
2.	Dr. Kiran George, CIT Chennai	Associate Professor Department of Bio Medical Engineering Chennai Institute of Technology. Chennai.
3.	Dr. P. Sinthia, SEC Chennai	Associate Professor Department of Bio Medical Engineering Saveetha Engineering College. Chennai.
4.	Ms.T. Hemapreetha	Clinical Ultrasound Product Specialist BPL Medical Technologies, Cochin Company
5.	K.M.K.I. Nawasdeen	Parent
6.	Dr.R.Ganesan	Prof. & HOD / BME
7.	Mrs.Kiruthika	Assistant Professor/BME
8.	Mrs.V.Geethagayathri	Assistant Professor/BME
9.	Mrs.N.Gopikha	Assistant Professor/BME

ATTESTED

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Points discussed:

1. BOS chairman welcomed all members for 2nd meeting of board of studies
2. BOS Chairman briefed the members about the agenda
 - To finalize the Third year (Fifth and Sixth semester & Elective Subjects syllabi of B.E., Biomedical Engineering programme.)
 - To finalise the list of equipment's required for all laboratories.
 - Any other matters.
3. The following are the suggestions given by the member of Board of studies.

The Board of studies members have gone through the curriculum and syllabus of Second and Third year.

1. Have the level of syllabus 80 percentage similarity with Anna University syllabus.
2. To check with L T P C credit hours.
3. Elective papers can be added in Core papers.
4. Open electives choice can be given.
5. Are you giving Hospital Training?
6. In Radiology ultrasound Imaging can be included.

The following resolutions were passed

- It is resolved to recommend the curriculum, syllabus and list of equipments required for all laboratories of 3rd, 4th, 5th and 6th semester of B.E. Biomedical Engineering Programme to Academic Council for approval.

The Chairman, Board of studies thanked all the members for their valuable suggestions and coordination.

Date: 05.02.21

Places: Nagapattinam

Chairman (BOS)

P. Senthil

Subject Expert

Narasimhan

P. Senthil
University Nominor
[Signature]
Industry Expert

Parent

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[Signature]
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Dr.R.Ganesan M.E.Ph.D

05.02.2021

Chairman –BoS (Biomedical Engineering)

To

All Board of studies Members

Biomedical Engineering Department

E.G.S.Pillay Engineering College

Dear Sirs,

Sub: Action taken based on 2nd BoS meeting - Reg:

Ref: Minutes of 2nd BoS meeting Dated 05.02.2021.

This is to inform to all BoS members that we have made all the corrections in curriculum and syllabus as per the suggestion given by all the members on the day of 2nd BOS meeting through Google meet and the following are the action taken based on the **member's and students** suggestions.

Action Taken based on the 2nd Board of Studies(BOS) Meeting members and Students suggestion.

1. Yes, we have the level of syllabus 80 percentage similarity with Anna University syllabus.
2. We checked and verified the L T P C credit hours.
3. Yes, Elective papers added in Core papers.
4. Yes, we have Open electives with choice based system.
5. Yes, we informed to placement cell for skill training.
6. Yes , We have arranged training the students to the Hospital.
7. We included the Radiology ultrasound Imaging.
8. Yes we included Research oriented subjects.

I request you to kindly acknowledge the same.

Thanks and regards

Chairman (BoS)

ATTESTED

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Nagore Post, Nagapattinam – 611 002, Tamilnadu.
Department of Biomedical Engineering

Action Taken for BOS 2nd Meeting Minutes held on 05.02.2021

- It is resolved to recommend the curriculum and syllabi under 2019 regulation of 3rd, 4th, 5th and 6th semester of B.E. Biomedical Engineering Programmes to the Academic Council for approval and the syllabus was approved as presented in Academic council.
- It is resolved to recommend the curriculum of 3rd & 4th Semester B.E. Biomedical Engineering Programmes to the academic Council for approval and the syllabus was approved as presented in Academic council.

It is resolved to recommend the question paper pattern UG/PG Programmes and evaluation methodology for approval and the question paper pattern UG/PG programmes was approved with changes in Part A – $10 \times 2 = 20$, Part B – $5 \times 12 = 60$ & Part C – $1 \times 20 = 20$ in Academic council

List of the new courses introduced

COURSE CODE	NAME OF THE COURSE	CHANGE DETAILS
1902BM301	Fundamentals of Biochemistry	New Course
1902BM302	Bio medical Circuits and Networks	New Course
1902BM303	Biosensors and Measurements	New Course
1902BM304	Human Anatomy and Physiology	New Course
1902BM351	Devices and Circuits Laboratory	New Course
1902BM352	Biochemistry and Human Physiology Laboratory	New Course
1902CS351	C++ and Data Structures Laboratory	New Course
1904GE351	Life Skills: Verbal Ability	New Course
1901MCX02	Constitution of India	New Course
1901MA401	Probability Theory and Stochastic Processes	New Course
1902BM401	Biomechanics	New Course
1902BM402	Basics of Pathology and Microbiology	New Course
1902BM403	Control Systems	New Course
1902BM404	Biomedical Instrumentation	New Course
1902BM405	Digital Electronics and Integrated Circuits	New Course
1902BM451	Pathology and Microbiology Laboratory	New Course
1902BM452	Biomedical Instrumentation Laboratory	New Course
1902BM453	Analog and Digital Integrated Circuits Laboratory	New Course
1904GE451	Life Skills: Verbal Reasoning	New Course
1901MCX01	Environmental Science	New Course


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1902BM501	Biomedical Equipments	New Course
1902BM502	Medical Optics	New Course
1902BM503	Microprocessor and its Applications	New Course
1902BM504	Biomedical Digital Signal Processing	New Course
1902BM505	Bio Process Control	New Course
1902BM551	Biomedical Digital Signal Processing Laboratory	New Course
1902BM552	Biosensors and Transducers Laboratory	New Course
1904BM553	Microprocessor and Applications Laboratory	New Course
1904GE551	Life Skills: Aptitude I	New Course
1901MCX03	Essence of Indian Traditional Knowledge	New Course
1901BM601	Diagnostic and Therapeutic Equipment- I	New Course
1902BM602	Analog and Digital Communication	New Course
1902BM603	Biomaterials	New Course
1902BM651	Diagnostic and Therapeutic Equipment Laboratory	New Course
1902BM652	Analog and Digital Communication Laboratory	New Course
1902BM653	Mini Project	New Course
1902BM654	Industrial Visit Presentation	New Course
1904GE651	Life Skills: Aptitude II GD	New Course
1903BM001	Bio MEMS	New Course
1903BM002	Nanotechnology in Medicine	New Course
1903BM003	Bio Signal Processing and Systems	New Course
1903BM004	Nuclear Medicine	New Course
1903BM005	<u>Regulatory Requirements in Pharmaceutical Industries</u>	New Course
1903BM006	Bio Analytical methods and Instruments	New Course
1903BM007	Tele Health Technologies	New Course
1903BM008	Medical Informatics	New Course

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List of syllabus revised courses from Anna University R2019

COURSE CODE	NAME OF THE COURSE	CHANGE DETAILS	REVISED
1901CH103	Chemistry for Biomedical Engineering	Syllabus Revision	2 Module changed
1901GEX03	Programming for Problem Solving	Syllabus Revision	2 Module changed
1901CHX51	Engineering Chemistry Laboratory	Syllabus Revision	2 Module changed
1901HSX51	Communication Skill Laboratory	Syllabus Revision	4 module changed
1901GEX01	Basic Electrical and Electronics Engineering	Syllabus Revision	Some content changed
1901PHX51	Engineering Physics Laboratory	Syllabus Revision	1 module changed

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List of CBCS/Electives for/ offered by B.E. – Biomedical Engineering

Course Code	Course Name	L	T	P	C	Maximum Marks			Category
						CA	ES	Total	
PROFESSIONAL ELECTIVES – I									
1903BM001	Bio MEMS	3	0	0	3	40	60	100	PE
1903BM002	Nanotechnology in Medicine	3	0	0	3	40	60	100	PE
1903BM003	Bio Signal Processing and Systems	3	0	0	3	40	60	100	PE
1903BM004	Nuclear Medicine	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – II									
1903BM005	<u>Regulatory Requirements in Pharmaceutical Industries</u>	3	0	0	3	40	60	100	PE
1903BM006	Bio Analytical methods and Instruments	3	0	0	3	40	60	100	PE
1903BM007	Tele Health Technologies	3	0	0	3	40	60	100	PE
1903BM008	Medical Informatics	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – III									
1903BM013	Tissue Engineering and R-DNA technology	3	0	0	3	40	60	100	PE
1903BM014	Medical Imaging	3	0	0	3	40	60	100	PE
1903BM015	Pattern Recognition in Medicine	3	0	0	3	40	60	100	PE
1903BM016	3D Printing Technology	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – IV									
1903BM017	Rapid Prototyping	3	0	0	3	40	60	100	PE
1903BM018	Wearable Systems	3	0	0	3	40	60	100	PE
1903BM019	Disaster Managements	3	0	0	3	40	60	100	PE
1903BM020	Special Surgical Equipment	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – V									
1903BM021	Biometric Systems	3	0	0	3	40	60	100	PE
1903BM022	Robotics and Medicine	3	0	0	3	40	60	100	PE
1903BM023	Ergonomics	3	0	0	3	40	60	100	PE
1903BM024	Physiological modeling	3	0	0	3	40	60	100	PE
HSS ELECTIVES									
1901HS001	Innovation & Entrepreneurship Fundamentals	3	0	0	3	40	60	100	HSS
1901HS002	Intellectual Property Rights	3	0	0	3	40	60	100	HSS
1901HS003	Start Up Entrepreneurship	3	0	0	3	40	60	100	HSS
1901HS004	Business model Innovation	3	0	0	3	40	60	100	HSS
OPEN ELECTIVES OFFERED BY THE DEPARTMENT OF BIOMEDICAL ENGG									
1903BM009	Biomedical Engineering	3	0	0	3	40	60	100	OE
1903BM010	Design and development of biomedical systems	3	0	0	3	40	60	100	OE
1903BM011	Bio Process Modeling	3	0	0	3	40	60	100	OE

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B.E.-Biomedical Engineering | E.G.S. Pillay Engineering College (Autonomous) | Regulations 2019
Approved in I Academic Council Meeting

903BM012	Instrumentation Engineering	3	0	0	3	40	60	100	OE
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Minutes of 3rd Board of Studies (BOS) Meeting

Name of the Department	Biomedical Engineering
Name of the Programme	B.E., Biomedical Engineering
Meeting No.	03
Date and Time	07.07.2022 & 04.30 PM
Venue / Platform	Google Meet App
Google Meet Link	https://meet.google.com/gnv-dexx-vag
Google Meet App Moderator	Dr.R.Ganesan , Professor & Head (Biomedical Engineering)

The names of members with Designation.

S.No	NAME	DESIGNATION
1	Dr. TamilselvanJayavelu, Anna University	Assistant Professor, Department of Biotechnology Anna University Expert from Anna University
2	Dr. Kiran George, CIT Chennai	Associate Professor Department of Bio Medical Engineering Chennai Institute of Technology. Chennai.
3	Dr. P. Sinthia, SEC Chennai	Associate Professor Department of Bio Medical Engineering Saveetha Engineering College. Chennai.
4	Ms.T. Hemapreetha	Clinical Ultrasound Product Specialist BPL Medical Technologies, Cochin

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		Company
5	K.M.K.I. Nawasdeen	Parent
6	Dr. R. Ganesan	Prof. & chairman BOS/BME
7	Dr. A. Sundarraj	Associate Professor & HOD/BME
8	Dr. B. PrathisRaaja	Associate Professor/BME
9	Mr. K. Kalanithi	Assistant Professor/BME
10.	Ms. T. Anusha	Assistant Professor/BME
11.	Mrs. R. Kiruthiga	Assistant Professor/BME
12.	Ms. K. K. Shanshoshshree	Assistant Professor/BME

BOS chairman welcomed all members for 3rd meeting of board of studies

BOS Chairman briefed the members about the agenda

- To finalize the Final year (Seventh and Eighth) semester, Elective & Open Elective subjects syllabi of B.E., Biomedical Engineering programme under 2019 Regulation.
- To finalize the professional and open electives subjects.
- To finalise the list of equipment's required for all laboratories.
- Any other matters.

Framing syllabus for 7TH,8TH , Elective and Open Elective subjects under 2019.

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The following are the suggestions given by the member of Board of studies.

1. Have the level of syllabus 80 percentage similarity with Anna University syllabus.
2. To check with L T P C credit hours.
3. Elective papers can be added in Core papers.
4. Open electives choice can be given.
5. Are you giving Hospital Training?
6. Do you have the specialist to handle the tissue engineering subject?
7. In Radiology ultrasound Imaging can be included.
8. One Credit courses to be considered in next Regulation.
9. Similarity topics are to be removed.

The following resolutions were passed

- It is resolved to recommend the curriculum, syllabus and list of equipments required for all laboratories of 7th & 8th semester subjects and Elective subjects and Open Elective subjects of B.E. Biomedical Engineering Programme to Academic Council for approval.

The Chairman, Board of studies thanked all the members for their valuable suggestions and coordination.

Date: 07.07.22

Places: Nagapattinam

Chairman (BOS)

P. Senthil

Subject Expert 1

Narasimhan

Parents

[Signature]

University Nominee

[Signature]

Industry Expert

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[Signature]
Dr. S. RAMABALAN, M.E., Ph.D.,
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E.G.S. PILLAY ENGINEERING COLLEGE
(An Autonomous Institution, Affiliated to Anna University, Chennai)
Nagore Post, Nagapattinam – 611 002, Tamilnadu.
Department of Biomedical Engineering

Action Taken for BOS 3rd Meeting Minutes held on 07.07.2022

Name of the Department	Biomedical Engineering
Name of the Programme	B.E., Biomedical Engineering
Meeting No.	03
Date and Time	07.07.2022 & 04.30 PM
Venue / Platform	Google Meet App
Google Meet Link	https://meet.google.com/gnv-dexx-vaq
Google Meet App Moderator	Dr.R.Ganesan , Professor & Head (Biomedical Engineering)

The Following resolutions were passed

- It is resolved to recommend the curriculum and syllabi under 2019 regulation of 7th and 8th semester elective, open elective subjects of B.E. Biomedical Engineering Programmes to the Academic Council for approval and the syllabus was approved as presented in Academic council.
- It is resolved to recommend the curriculum of 7th&8th Semester professional and open elective subjects of B.E. Biomedical Engineering Programmes to the academic Council for approval and the syllabus was approved as presented in Academic council.
- It is resolved to recommend the question paper pattern UG/PG Programmes and evaluation methodology for approval and the question paper pattern UG/PG programmes was approved with changes in Part A – $10 \times 2 = 20$, Part B – $5 \times 12 = 60$ & Part C – $1 \times 20 = 20$ in Academic council.

List of the new courses introduced

COURSE CODE	NAME OF THE COURSE	CHANGE DETAILS
1901MA104	Engineering Mathematics –I (Linear Algebra, Calculus and Partial differentiation)	New Course
1901ENX01	English for Engineers	New Course
1901GE151	Engineering Intelligence I	New Course
1901MA204	Engineering Mathematics–II (Calculus, OrdinaryDifferentialEquations and Complex Variable)	New Course
1901PH202	Semiconductor Physics and Optoelectronics	New Course
1901GE201	Engineering Exploration	New Course

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1901GE254	Computer Hardware and IT Essentials Laboratory	New Course
1901GE252	Engineering Intelligence - II	New Course
1901GEX51	CAD Laboratory	New Course
1901GEX53	Basic Electrical and Electronics Engineering Laboratory	New Course
1902BM301	Fundamentals of Biochemistry	New Course
1902BM302	Bio medical Circuits and Networks	New Course
1902BM303	Biosensors and Measurements	New Course
1902BM304	Human Anatomy and Physiology	New Course
1902BM351	Devices and Circuits Laboratory	New Course
1902BM352	Biochemistry and Human Physiology Laboratory	New Course
1902CS351	C++ and Data Structures Laboratory	New Course
1904GE351	Life Skills: Verbal Ability	New Course
1901MCX02	Constitution of India	New Course
1901MA401	Probability Theory and Stochastic Processes	New Course
1902BM401	Biomechanics	New Course
1902BM402	Basics of Pathology and Microbiology	New Course
1902BM403	Control Systems	New Course
1902BM404	Biomedical Instrumentation	New Course
1902BM405	Digital Electronics and Integrated Circuits	New Course
1902BM451	Pathology and Microbiology Laboratory	New Course
1902BM452	Biomedical Instrumentation Laboratory	New Course
1902BM453	Analog and Digital Integrated Circuits Laboratory	New Course
1904GE451	Life Skills: Verbal Reasoning	New Course
1901MCX01	Environmental Science	New Course
1902BM501	Biomedical Equipments	New Course
1902BM502	Medical Optics	New Course
1902BM503	Microprocessor and its Applications	New Course
1902BM504	Biomedical Digital Signal Processing	New Course
1902BM505	Bio Process Control	New Course
1902BM551	Biomedical Digital Signal Processing Laboratory	New Course
1902BM552	Biosensors and Transducers	New Course

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	Laboratory	
1904BM553	Microprocessor and Applications Laboratory	New Course
1904GE551	Life Skills: Aptitude I	New Course
1901MCX03	Essence of Indian Traditional Knowledge	New Course
1901BM601	Diagnostic and Therapeutic Equipment- I	New Course
1902BM602	Analog and Digital Communication	New Course
1902BM603	Biomaterials	New Course
1902BM651	Diagnostic and Therapeutic Equipment Laboratory	New Course
1902BM652	Analog and Digital Communication Laboratory	New Course
1902BM653	Mini Project	New Course
1902BM654	Industrial Visit Presentation	New Course
1904GE651	Life Skills: Aptitude II GD	New Course
1903BM001	Bio MEMS	New Course
1903BM002	Nanotechnology in Medicine	New Course
1903BM003	Bio Signal Processing and Systems	New Course
1903BM004	Nuclear Medicine	New Course
1903BM005	<u>Regulatory Requirements in Pharmaceutical Industries</u>	New Course
1903BM006	Bio Analytical methods and Instruments	New Course
1903BM007	Tele Health Technologies	New Course
1903BM008	Medical Informatics	New Course


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List of syllabus revised courses from Anna University R2019

COURSE CODE	NAME OF THE COURSE	CHANGE DETAILS	REVISED
1901CH103	Chemistry for Biomedical Engineering	Syllabus Revision	2 Module changed
1901GEX03	Programming for Problem Solving	Syllabus Revision	2 Module changed
1901CHX51	Engineering Chemistry Laboratory	Syllabus Revision	2 Module changed
1901HSX51	Communication Skill Laboratory	Syllabus Revision	4 module changed
1901GEX01	Basic Electrical and Electronics Engineering	Syllabus Revision	Some content changed
1901PHX51	Engineering Physics Laboratory	Syllabus Revision	1 module changed

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List of CBCS/Electives for/ offered by B.E. – Biomedical Engineering

Course Code	Course Name	L	T	P	C	Maximum Marks			Category
						CA	ES	Total	
PROFESSIONAL ELECTIVES – I									
1903BM001	Bio MEMS	3	0	0	3	40	60	100	PE
1903BM002	Nanotechnology in Medicine	3	0	0	3	40	60	100	PE
1903BM003	Bio Signal Processing and Systems	3	0	0	3	40	60	100	PE
1903BM004	Nuclear Medicine	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – II									
1903BM005	Regulatory Requirements in Pharmaceutical Industries	3	0	0	3	40	60	100	PE
1903BM006	Bio Analytical methods and Instruments	3	0	0	3	40	60	100	PE
1903BM007	Tele Health Technologies	3	0	0	3	40	60	100	PE
1903BM008	Medical Informatics	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – III									
1903BM013	Tissue Engineering and R-DNA technology	3	0	0	3	40	60	100	PE
1903BM014	Medical Imaging	3	0	0	3	40	60	100	PE
1903BM015	Pattern Recognition in Medicine	3	0	0	3	40	60	100	PE
1903BM016	3D Printing Technology	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – IV									
1903BM017	Rapid Prototyping	3	0	0	3	40	60	100	PE
1903BM018	Wearable Systems	3	0	0	3	40	60	100	PE
1903BM019	Disaster Managements	3	0	0	3	40	60	100	PE
1903BM020	Special Surgical Equipment	3	0	0	3	40	60	100	PE
PROFESSIONAL ELECTIVES – V									
1903BM021	Biometric Systems	3	0	0	3	40	60	100	PE
1903BM022	Robotics and Medicine	3	0	0	3	40	60	100	PE
1903BM023	Ergonomics	3	0	0	3	40	60	100	PE
1903BM024	Physiological modeling	3	0	0	3	40	60	100	PE
HSS ELECTIVES									
1901HS001	Innovation & Entrepreneurship Fundamentals	3	0	0	3	40	60	100	HSS
1901HS002	Intellectual Property Rights	3	0	0	3	40	60	100	HSS
1901HS003	Start Up Entrepreneurship	3	0	0	3	40	60	100	HSS
1901HS004	Business model Innovation	3	0	0	3	40	60	100	HSS
OPEN ELECTIVES OFFERED BY THE DEPARTMENT OF BIOMEDICAL ENGG									

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B.E.-Biomedical Engineering | E.G.S. Pillay Engineering College (Autonomous) | Regulations 2019
Approved in I Academic Council Meeting

1903BM009	Biomedical Engineering	3	0	0	3	40	60	100	OE
1903BM010	Design and development of biomedical systems	3	0	0	3	40	60	100	OE
1903BM011	Bio Process Modeling	3	0	0	3	40	60	100	OE
1903BM012	Instrumentation Engineering	3	0	0	3	40	60	100	OE


CHAIRMAN
Board of Studies
Department of Biomedical Engg
E.G.S. Pillay Engineering College (Autonomous)
Nagapattinam - 611 002.

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