



APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

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CIRCULAR

Sub:- Minor in Engineering: Guidelines to the Institutions

Ref :- B.Tech Regulations 2019

A Minor is an additional credential, a student will earn if he/she does minimum 20 credits worth of additional learning in a discipline other than his/her major discipline. The objective is to permit a student to customize their Engineering degree to suit their specific interests. Upon completion of an Engineering Minor, a student will be better equipped to perform interdisciplinary research and will be better employable. The academic units offering minors in their discipline will prescribe the set of courses and/or other activities like projects necessary for earning a minor in that discipline. If a student accumulates the required credits by registering for the required courses, and if the requirements for a particular minor are met within the time limit for the course, the minor will be awarded.

RULES

- (i) All B. Tech students shall be eligible to register for Minor in Engineering.
- (ii) The curriculum committee/BoS shall prepare syllabus for courses to be included in the curriculum from third to eight semesters for all branches. The minor courses shall be identified by M slot courses.
- (iii) Minor in a program is permitted only if the Institute has a respective UG program. However, an Institute can offer minor in programs (not affiliated) if the Institute has sufficient expertise/infrastructure in the respective area/discipline. An undertaking to this effect has to be submitted by the Principal and which is subjected to scrutiny/audit by the University. Complaints from any corner regarding this issue will not be entertained by the University and shall be addressed by the respective Principal.
- (iv) An Institute can offer Minor and Honours to a student (if all eligibility criteria are satisfied), if the Institute and the respective department are willing.
- (v) The batch size of a minor program shall be between $20 \pm 10\%$ to $60 \pm 10\%$. That is, the number of students in a batch be in between 18 to 66. Each batch shall be mapped to a faculty member.



(vi) Registration is permitted for Minor at the beginning of third semester. Total credits required is 182 (162 + 20 credits from value added courses).

(vii) The student shall earn additional 20 credits to be eligible for the award of B. Tech Degree with Minor.

(viii) Out of the 20 Credits, 12 credits shall be earned by undergoing a minimum of three courses listed in the curriculum for minor, of which one course shall be a mini project based on the chosen area. They can do mini project either in S7 or in S8. The remaining 8 credits could be acquired by undergoing 2 MOOCs recommended by the Board of studies and approved by the Academic Council or through courses listed in the curriculum. It is important that the MOOC courses chosen shall be relevant to the concerned subjects in the respective minor basket.

(ix) If a student fails in any course of the minor, he/she shall not be eligible to continue the B.Tech Minor. There won't be any supplementary examination for the courses chosen for Minor. However, the additional credits and grades thus far earned by the student shall be included in the grade card.

(x) The classes for Minor shall be conducted along with regular classes and no extra time shall be required for conducting the courses.

(xi) Under graduate Degree with minor shall be issued by the University to the students who fulfil all the academic eligibility requirements for the B. Tech program and Minor.

MINOR BASKETS OFFERED BY VARIOUS PROGRAMS

The list of baskets of minor program offered by different B.Tech programs is listed below:

| SL.NO | PROGRAMME NAME | MINOR-BASKET I | MINOR-BASKET II | MINOR-BASKET III |
|-------|---------------------------------------|---------------------------------------|-------------------------------|-----------------------------------|
| 1 | AERONAUTICAL ENGINEERING | AERODYNAMICS | PROPULSION | AERO-STRUCTURES |
| 2 | APPLIED ELECTRONICS & INSTRUMENTATION | SIGNAL PROCESSING | ELECTRONICS CIRCUITS | INSTRUMENTATION AND CONTROL |
| 3 | AUTOMOBILE ENGINEERING | AUTOMOTIVE TECHNOLOGY | NIL | NIL |
| 4 | BIOMEDICAL ENGINEERING | BIOMEDICAL IMAGING | REHABILITATION ENGINEERING | BIOMEDICAL COMPUTATIONAL METHODS |
| 5 | BIOTECHNOLOGY | BIOPROCESSING | CELL & MOLECULAR BIOLOGY | HEALTH SAFETY ENVIRONMENT |
| 6 | CHEMICAL ENGINEERING | PROCESS SAFETY | PETROLEUM AND PETROCHEMICALS | MATERIALS SCIENCE AND ENGINEERING |
| 7 | CIVIL ENGINEERING | STRUCTURAL ENGINEERING & CONSTRUCTION | GEOTECHNICAL & TRANSPORTATION | ENVIRONMENTAL ENGINEERING & |



| | | CONSTRUCTION TECHNOLOGY | ENGINEERING | SUSTAINABILITY |
|----|---|--------------------------------------|--|---|
| 8 | COMPUTER SCIENCE AND ENGINEERING | SOFTWARE ENGINEERING | MACHINE LEARNING | NETWORKING |
| 9 | ELECTRONICS AND BIOMEDICAL ENGINEERING | BIOMEDICAL SIGNAL & IMAGE PROCESSING | BIOMEDICAL INSTRUMENTATION | COMPUTING IN BIOMEDICAL ENGINEERING |
| 10 | ELECTRONICS AND COMMUNICATION ENGINEERING | VLSI AND EMBEDDED SYSTEMS | COMMUNICATION SYSTEMS | SIGNAL PROCESSING |
| 11 | ELECTRICAL AND ELECTRONICS ENGINEERING | DRIVES AND POWER ELECTRONICS | POWER ENGINEERING | CONTROL ENGINEERING |
| 12 | FOOD TECHNOLOGY | FOOD ENGINEERING | FOOD SCIENCE AND QUALITY CONTROL | FOOD PRODUCT DEVELOPMENT AND MANAGEMENT |
| 13 | INDUSTRIAL ENGINEERING | OPERATIONS MANAGEMENT | NIL | NIL |
| 14 | INSTRUMENTATION AND CONTROL ENGINEERING | PROCESS CONTROL AND AUTOMATION | DATA ACQUISITION AND SIGNAL CONDITIONING | NIL |
| 15 | INFORMATION TECHNOLOGY | WEB AND ANDROID DEVELOPMENT | COMPUTER COMMUNICATIONS | SOFTWARE ENGINEERING |
| 16 | MECHANICAL ENGINEERING | MECHANISMS AND MACHINES ENGINEERING | FLUID AND THERMAL ENGINEERING | MATERIALS AND MANUFACTURING ENGINEERING |
| 17 | MECHANICAL (AUTOMOBILE) ENGINEERING | AUTOMOTIVE TECHNOLOGY | NIL | NIL |
| 18 | MECHANICAL PRODUCTION ENGINEERING | INSPECTION AND QUALITY CONTROL | NIL | NIL |
| 19 | MECHATRONICS | AUTOMATION | AUTOMATION SYSTEMS | NIL |
| 20 | METALLURGICAL AND MATERIALS ENGINEERING | MATERIALS SCIENCE | METALLURGICAL ENGINEERING | INDUSTRIAL METALLURGY |
| 21 | NAVAL ARCHITECTURE AND SHIP BUILDING | Basket I | NIL | NIL |
| 22 | POLYMER ENGINEERING | NIL | NIL | NIL |
| 23 | PRODUCTION ENGINEERING | QUALITY ENGINEERING | NIL | NIL |
| 24 | ROBOTICS AND AUTOMATION | ROBOTICS AND AUTOMATION | NIL | NIL |
| 25 | SAFETY AND FIRE ENGINEERING | Basket I | NIL | NIL |



ELIGIBILITY CRITERION

The eligibility list of programs for various minor baskets is listed below:

| OFFERING PROGRAMS | ELIGIBLE PROGRAMS | | |
|--------------------------------------|--|--|--|
| | BASKET I | BASKET II | BASKET III |
| AERONAUTICAL ENGG(AO) | AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA |
| APPLIED ELECTRONICS & INSTRU(AE) | BM, BT, CH, CE, CS, EE, IE, IT, MR, ME, MP, MU, SB, PE, RA | BM, BT, CH, CS, EE, IE, IT, MR, ME, MP, MU, SB, PE, RA | BM, BT, CH, CE, CS, EE, IE, IT, MR, ME, MP, MU, SB, PE, RA |
| AUTOMOBILE ENGG (AU) | AO, AE, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MP, SB, PO, PE, FS, RA | | |
| BIOMEDICAL ENGG(BM) | AO, AE, BT, CS, EE, EC, IT, IC, MR | AO, AE, BT, CE, EE, EC, IC, ME, MR, MT, PO, RA | AO, AE, AU, BT, CH, CE, CS, EE, EC, IT, IC, ME, MR, MU, MP, PO, RA |
| BIOTECHNOLOGY (BT) | AO, AE, AU, BM, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AE, AU, BM, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AE, AU, BM, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA |
| CHEMICAL ENGG (CH) | ME, CE, EE, PE, BM, EC, CS, BT, FT, EB, PO, IE, IC, MU, MP, SB | ME, CE, EE, PE, BM, EC, CS, BT, FT, EB, PO, IE, IC, MU, MP, FS, SB | ME, CE, EE, PE, BM, EC, CS, BT, FT, EB, PO, IC, MU, MP, FS, SB |
| CIVIL ENGG(CE) | AO, AE, AU, BM, BT, CH, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AE, AU, BM, BT, CH, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AE, AU, BM, BT, CH, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA |
| COMPUTER SCIENCE AND ENGG(CS) | AO, AE, AU, BM, BT, CH, CE, EE, EB, EC, FT, IE, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AE, AU, BM, BT, CH, CE, EE, EB, EC, FT, IE, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AE, AU, BM, BT, CH, CE, EE, EB, EC, FT, IE, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA |
| ELECTRONICS AND BIOMEDICAL ENGG (EB) | AO, AE, BT, CH, CS, EE, EC, IT, IC, MR | AE, AU, BT, CS, EE, EC, IT, IC, ME, MR, MT | AO, AE, AU, BT, CH, CE, CS, EE, EC, IT, IC, ME, MR, MU, MP, PO, RA |
| ELECTRONICS & COMMUNICATION ENGG(EC) | AO, CS, IC, IT, ME, PE, MP, MU, AU, MR, PO, SB, RA, CH, BT, MT, CE, FT, IE, FS | AO, AE, RA, EB, EE, CS, IT, BM, ME, PE, MP, MU, AU, MR | IC, IT, CS, BT, CH, CE, FT, IE, ME, MR, MT, MU, MP, SB, PE, FS, RA |
| ELECTRICAL AND ELECTRONICS ENGG(EE) | AO, AU, BM, CH, CE, CS, EB, EC, IE, IT, IC, ME, MT, MU, MP, SB, PE, FS | AO, AE, AU, BM, CH, CE, CS, EB, EC, IE, IT, IC, ME, MR, MT, MU, MP, SB, PE, RA, FS | AO, AU, BM, CH, CE, CS, IE, IT, ME, MT, MU, MP, SB, PE, FS |
| FOOD | AE, BM, BT, CH, EE, EB, IC, | AO, AE, AU, BM, BT, CH, CE, EE, FR, FC, IF, IT, IC, MF, MR | BT, CH, CS, EC, IE, IT, MF, SB, PF, RA, MU, MP |



| | | | |
|------------------------------------|--|--|--|
| TECHNOLOGY (FT) | ME,MR, PO, RA,MU,MP | EE,EC,EE,IT,IC,ME,MR,MT,SB, O,PE,RA,FS,MU,MP | ME,CE,EE,EC,AE,CS |
| INDUSTRIAL ENGG(IE) | CE,ME,EE,EC,AE,CS | | |
| INSTRUMENTATION & CONTROL ENGG(IC) | AE, BM, CE, CH, CS, EE, EC, FT, IE, ME, SB, FS | AO,AE, AU, BM, CE, CH, CS, EE, EB, EC, FT, ME, MR | |
| INFORMATION TECHNOLOGY (IT) | AO, AE, AU, BM, BT, CH, CE, EE, EB, EC, FT, IE, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AU, BM, BT, CH, CE, FT, IE, IC, ME,MR, MT, MU, MP, SB, PO, PE, FS, RA | AO, AE, AU, BM, BT, CH, CE, EE, EB, EC, FT, IE, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS, RA |
| MECHANICAL ENGG(ME) | AE, AO, BM, BT, CH, CE, CS, EB, EE, EC, FT, IT, IC, MT, SB, PO, FS | AE, AO, BM, BT, CH, CE, CS, EB, EE, EC, FT, IT, IC, MT, SB, PO, FS, RA | AE, AO, BM, BT, CH, CE, CS, EB, EE, EC, FT, IT, IC, MR, SB, PO, FS, RA |
| MECHANICAL AUTOMOBILE ENGG(MU) | AO, AE, BM, BT, CH,CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MP, SB, PO, PE, FS, RA | | |
| MECHANICAL PRODUCTION ENGG (MP) | AO, AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, SB, PO, FS, RA | | |
| MECHATRONICS (MR) | AO, AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MT, MU, MP, SB, PO, PE, FS, RA | AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MT, MU, MP, SB, PO, PE, FS, RA | |
| METALLURGICAL AND MAT ENGG(MT) | AO, AU, BM, BT, CE, CH, CS, EB, EC, EE, IE, ME, MR, MP, PE, PO, SB | AO, AU, BM, BT, CE, CH, CS, EB, EC, EE, IE, ME, MR, MP, PE, PO, SB | AO, AU, BM, BT, CE, CH, CS, EB, EC, EE, IE, ME, MR, MP, PE, PO, SB |
| NAVAL ARCH AND SHIP BUILDING (SB) | ME, CE, CS, EE, EC, IC, MP, PE, AU | | |
| POLYMER ENGG(PO) | | | |
| PRODUCTION ENGG (PE) | AO, AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, SB, PO, FS, RA | | |
| ROBOTICS AND AUTOMATION (RA) | AO, AE, AU, BM, BT, CH, CE, CS, EE, EB, EC, FT, IE, IT, IC, ME, MR, MT, MU, MP, SB, PO, PE, FS | | |
| SAFETY AND FIRE ENGG (FS) | AO,AE,AU,CH,CE,EE,IE IC,ME,MR,MT,MU, MP, SB,PE,RA | | |

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Director(Academic)



* This is a computer system (Digital File) generated letter. Hence there is no need for a physical signature.

