



Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur
 (An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)
SCHEME OF INSTRUCTION & SYLLABI
 Programme: B. Tech **Aeronautical Engineering**



TULSIRAMJI GAIKWAD-PATIL COLLEGE OF ENGINEERING & TECHNOLOGY

Wardha Road, Nagpur - 441108
 Accredited with NAAC A+ Grade & NBA Accredited (EE, ME, CE & ECE)
 Approved by AICTE, New Delhi, Govt. of Maharashtra
 (An Autonomous Institution Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)



Department of Basic Sciences and Humanities

Scheme of Instruction for First Year of B. Tech. (UG) Programme
Group-B Semester – I (AE/CE/ME)

| SN | Sem | Type | Bo/ Dept | Sub. Code | Subject | T/P | Contact Hours | | | | Cred Its | % Weightage | | | ESE Duration Hours | |
|---------------------------------|-----|------|------------|------------------------------|---|-----|---------------|----|----|-----|----------|-------------|----|-----|--------------------|--------|
| | | | | | | | L | P | SL | Hrs | | CT/A | CA | ESE | | TOT AL |
| FIRST SEMESTER (GROUP-B) | | | | | | | | | | | | | | | | |
| 1 | 1 | BSC | S&H | BSH41101 | Linear Algebra and Calculus | T | 4 | 0 | 2 | 6 | 4 | 30 | 10 | 60 | 100 | 3 |
| 2 | 1 | BSC | S&H | BSH41106 | Chemical Process in Engineering | T | 3 | 0 | 2 | 5 | 3 | 30 | 10 | 60 | 100 | 3 |
| 3 | 1 | BSC | S&H | BSH41107 | Chemical Process in Engineering-Lab | P | 0 | 2 | - | 2 | 1 | 25 | - | 25 | 50 | - |
| 4 | 1 | ESC | CE | BCE41101 | Engineering Mechanics | T | 3 | 0 | 2 | 5 | 3 | 30 | 10 | 60 | 100 | 3 |
| 5 | 1 | IKS | S&H | BSH41204 | Indian Ancient Technology | T | 2 | 0 | 2 | 4 | 2 | 15 | 5 | 30 | 50 | 1 |
| 6 | 1 | ESC | ME | BME41101 | IIDEA-Lab & Engineering Workshop | P | 0 | 4 | - | 4 | 2 | 50 | - | - | 50 | - |
| 7 | 1 | ESC | CE | BCE41102 | Environment Sustainability -Lab | P | 0 | 2 | - | 2 | 1 | 25 | - | 25 | 50 | - |
| 8 | 1 | VSEC | CSE | BCS41104 | Fundamentals of Computer-Lab | P | 0 | 2 | - | 2 | 1 | 25 | - | 25 | 50 | - |
| 9 | 1 | VSEC | S&H | BSH41205 | Social Internship | P | 0 | 2 | - | 2 | 1 | 25 | - | - | 25 | - |
| 10 | 1 | PCC | AE/ ME/ CE | BAE41101/ BME41102/ BCE41103 | Basics of Aircraft Design-Lab / CNC Machine and Programming-Lab / Building Maintenance -Lab | P | 0 | 4 | - | 4 | 2 | 25 | - | 25 | 50 | - |
| 11 | 1 | CC | S&H | BSH41X01 | Liberal Learning Module-I | P | 0 | 4 | - | 4 | 2 | 50 | - | - | 50 | - |
| TOTAL FIRST SEM | | | | | | | 12 | 20 | 08 | 40 | 32 | 300 | 35 | 310 | 675 | 10 |

| | | | | | | | | | | | | | | | | |
|----------------------------------|---|------|-----|----------|--|---|----|----|----|----|----|-----|----|-----|-----|----|
| SECOND SEMESTER (GROUP-B) | | | | | | | | | | | | | | | | |
| 1 | 2 | BSC | S&H | BSH41201 | Differential Equation and Statistics | T | 4 | 0 | 2 | 6 | 4 | 30 | 10 | 60 | 100 | 3 |
| 2 | 2 | BSC | S&H | BSH41206 | Solid State Physics & Optics | T | 3 | 0 | 2 | 5 | 3 | 30 | 10 | 60 | 100 | 3 |
| 3 | 2 | BSC | S&H | BSH41210 | Solid State Physics & Optics-Lab | P | 0 | 2 | - | 2 | 1 | 25 | - | 25 | 50 | - |
| 4 | 2 | ESC | EE | BEE41201 | Principle of Electrical Engineering | T | 3 | 0 | 2 | 5 | 3 | 30 | 10 | 60 | 100 | 3 |
| 5 | 2 | ESC | EE | BEE41202 | Principle of Electrical Engineering -Lab | P | 0 | 2 | - | 2 | 1 | 25 | - | 25 | 50 | - |
| 6 | 2 | ESC | ME | BME41202 | Engineering & Computer Graphics | T | 2 | 0 | 2 | 4 | 2 | 15 | 5 | 30 | 50 | 1 |
| 7 | 2 | ESC | IT | BET41205 | C' Language -Lab | P | 0 | 2 | - | 2 | 1 | 25 | - | 25 | 50 | - |
| 8 | 2 | VSEC | CE | BCE41201 | Computer Aided Drawing-Lab | P | 0 | 2 | - | 2 | 1 | 25 | - | 25 | 50 | - |
| 9 | 2 | VSEC | S&H | BSH41105 | Professional Etiquette | P | 0 | 2 | - | 2 | 1 | 25 | - | - | 25 | - |
| 10 | 2 | AEC | S&H | BSH41104 | Digital Wellness & Basic Communication Lab | P | 0 | 4 | - | 4 | 2 | 50 | - | - | 50 | - |
| 11 | 2 | CC | S&H | BSH41Y01 | Liberal Learning Module-II | P | 0 | 4 | - | 4 | 2 | 50 | - | - | 50 | - |
| TOTAL SECOND SEM | | | | | | | 12 | 18 | 10 | 40 | 31 | 300 | 35 | 310 | 675 | 10 |

| Course Category | BSC/ESC (Basic Science Course/ Engineering Science Course) | PCC (Programme Case courses) | Multidisciplinary courses | VSEC (Skill Course) | Social Science & Management | | Experiential Learning Courses | CC (Co-Curricular Courses) |
|-----------------|--|------------------------------|---------------------------|---------------------|----------------------------------|-------------------------------|-------------------------------|----------------------------|
| | | | | | AEC (Ability Enhancement Course) | IKS (Intran Knowledge System) | | |
| Credits SEM-I | 08 / 08 | - | - | 02 | 02 | - | - | 02 |
| Credits SEM-II | 08 / 07 | 02 | - | 02 | - | 02 | - | 02 |
| Cumulative Sum | 16 / 13 | 02 | - | 04 | 02 | 02 | - | 04 |

PROGRESSIVE TOTAL CREDITS: 22+21=43

| | | | | | | |
|-------------|----------------|----------------|-----------|-----------------|---------|-----------------------------------|
| | | | | July, 2025 | 4.00 | Applicable for AY 2025-26 Onwards |
| Chairperson | Dean Academics | Vice Principal | Principal | Date of Release | Version | |



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SCHEME OF INSTRUCTION & SYLLABI

Programme: B. Tech **Aeronautical Engineering**



Scheme of Instructions: Second Year B. Tech. in Aeronautical Engineering (As Per NEW NEP 2020)

Semester-III

| S N. | Sem | Type | BoS/ Dept | Sub Code | Subject | T/P | Contact Hours | | | Credits | % Weightage | | | ESE Duration (Hr) | Total Marks |
|--------------|-----|------|-----------|----------|--|-----|---------------|-----------|-----------|-----------|-------------|------------|------------|-------------------|-------------|
| | | | | | | | L | P | Hrs | | CT/IA | CA | ESE | | |
| 1 | III | PCC | AE | BAE42301 | Fluid Mechanics | T | 3 | - | 3 | 3 | 30 | 10 | 60 | 3 | 100 |
| 2 | III | PCC | AE | BAE42302 | Introduction to Aeronautical Engineering | T | 3 | - | 3 | 3 | 30 | 10 | 60 | 3 | 100 |
| 3 | III | PCC | AE | BAE42303 | Fluid Mechanics Lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 4 | III | PCC | AE | BAE42304 | Computer Aided Drafting lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 5 | III | CEP | AE | BAE42305 | Micro Project | P | - | 4 | 4 | 2 | - | 50 | 50 | 2 | 100 |
| 6 | III | VEC | AE | BAE42306 | Sustainable Development Goals | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 7 | III | OEC | AE | BAE42307 | Open Elective-I | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 8 | III | HSSM | BA | BBA423-- | Engineering Economics for Managers | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 9 | III | MDM | S&H | BSH423-- | Advance Mathematics | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 10 | III | AEC | S&H | BSH423-- | Liberal Learning Module-III | P | - | 2 | 2 | 1 | - | 50 | | 2 | 50 |
| Total | | | | | | | 16 | 10 | 26 | 21 | 132 | 198 | 370 | 23 | 700 |

| Course Category | HSSM (Humanities Social Science & Management) | BSC (Basic Science Course) | ESC (Engg. Science Course) | PCC (Programme Core Courses) | PEC (Program Elective Courses) | OEC (Open Elective Courses) | MDM (Multi-disciplinary Courses) | SEC (Skill Course) | ELC/FP/CEP (Experiential Learning Courses) | CC (Liberal Learning Courses) |
|-----------------|---|----------------------------|----------------------------|------------------------------|--------------------------------|-----------------------------|----------------------------------|--------------------|--|-------------------------------|
| Credits | 2 | -- | -- | 08 | -- | 4 | 2 | 02 | 2 | 01 |
| Cumu.Sum | 6 | 16 | 13 | 10 | -- | 4 | 2 | 06 | 2 | 5 |

PROGRESSIVETOTALCREDITS:43+21=64

| | | | | | |
|---|--|---|-------------------------------|-----------------|-------------------------------------|
| Chairperson Head Aeronautical Engineering TGPCET, Nagpur | Director Academics/ Vice Principal Tulsiramji Gaikwad-Patil College Of Engineering And Technology, Nagpur | Director Administration Dr. Premanand Naktode Principal TGPCET, Nagpur | June, 2026 Date of Release | 1.00 Version | Applicable For AY2025-26 Onwards |
|---|--|---|-------------------------------|-----------------|-------------------------------------|



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Scheme of Instructions: Second Year B. Tech. in Aeronautical Engineering (As Per NEW NEP 2020)

Semester-IV

| S N. | Sem | Type | BoS/ Dept | Sub Code | Subject | T/P | Contact Hours | | | Credits | % Weightage | | | ESE Duration | Total Marks |
|--------------|-----|------|-----------|----------|----------------------------------|-----|---------------|-----------|-----------|-----------|-------------|------------|------------|--------------|-------------|
| | | | | | | | L | P | Hrs | | CT/IA | CA | ESE | | |
| 1 | IV | PCC | AE | BAE42401 | Fundamentals of Thermodynamics | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 2 | IV | PCC | AE | BAE42402 | Aerodynamics-I | T | 3 | - | 3 | 3 | 30 | 10 | 60 | 3 | 100 |
| 4 | IV | PCC | AE | BAE42403 | Aerodynamics Lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 5 | IV | PCC | AE | BAE42404 | Aeromodelling Lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 6 | IV | VSEC | AE | BAE42405 | Smart Manufacturing (Idea Lab) | P | - | 4 | 4 | 2 | - | 50 | 50 | 2 | 100 |
| 7 | IV | OEC | AE | BAE42406 | Open Elective-II | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 8 | IV | HSSM | MBA | BBA424__ | Industrial Management | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 9 | IV | VEC | BSH | BSH424__ | Leadership and Team Dynamics | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 10 | IV | MDM | ME | BME424__ | Advance Manufacturing Technology | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 11 | III | AEC | BSH | BSH424__ | Liberal Learning Module-IV | P | - | 2 | 2 | 1 | - | 50 | | 2 | 50 |
| Total | | | | | | | 15 | 10 | 25 | 20 | 116 | 194 | 340 | 22 | 650 |

| Course Category | HSSM (Humanities Social Science & Management) | BSC (Basic Science Course) | ESC (Engg. Science Course) | PCC (Programme Core Courses) | PEC (Program Elective Courses) | OEC (Open Elective Courses) | MDM (Multi-disciplinary Courses) | SEC (Skill Course) | ELC/FP/CEP (Experiential Learning Courses) | CC (Liberal Learning Courses) |
|-----------------|---|----------------------------|----------------------------|------------------------------|--------------------------------|-----------------------------|----------------------------------|--------------------|--|-------------------------------|
| Credits | 2 | -- | -- | 09 | -- | 2 | 2 | 4 | -- | 01 |
| Cumu. Sum | 08 | 16 | 13 | 19 | -- | 6 | 4 | 10 | 2 | 06 |

Progressive Total Credits =64+20 = 84

| | | | | | | |
|-------------|------------------------------------|-------------------------|-----------|-----------------|---------|----------------------------------|
| | | | | June, 2026 | 1.00 | Applicable For AY2025-26 Onwards |
| Chairperson | Director Academics/ Vice Principal | Director Administration | Principal | Date of Release | Version | |

Aeronautical Engineering
TGPCET, Nagpur
Director Academics
Tulsiramji Gaikwad
College Of Engineering
And Technology, Nagpur

Dr. Premanand Naktode
Principal
TGPCET, Nagpur



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SCHEME OF INSTRUCTION & SYLLABI

Programme: B. Tech **Aeronautical Engineering**



Scheme of Instructions: Third Year B. Tech. in Aeronautical Engineering (As Per NEW NEP 2020)

Semester-V

| S N. | Sem | Type | BoS/ Dept | Sub Code | Subject | T/P | Contact Hours | | | Credits | % Weightage | | | ESE Duration (Hrs) | Total Marks |
|--------------|-----|------|-----------|-------------|--|-----|---------------|----------|-----------|-----------|-------------|------------|------------|--------------------|-------------|
| | | | | | | | L | P | Hrs | | CT/IA | CA | ESE | | |
| 1 | V | PCC | AE | BAE43501 | Aircraft Propulsion | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 2 | V | PCC | AE | BAE43502 | Aerodynamics-II | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 3 | V | PCC | AE | BAE43503 | Aircraft Propulsion Lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 4 | V | PCC | AE | BAE43504 | Thermodynamics and Heat transfer lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 5 | V | PCC | AE | BAE43505 | Computational Aerodynamics & Structure Lab | P | - | 4 | 4 | 2 | - | 50 | 50 | 2 | 100 |
| 6 | V | OEC | AE | BAE43506 | Open Elective-III | T | 2 | - | 2 | 2 | 14 | 6 | 30 | 2 | 50 |
| 7 | V | PEC | AE | BAE43507-09 | Program Elective-I | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 8 | V | MDM | ME | BME435__ | Heat Transfer | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| Total | | | | | | | 18 | 8 | 26 | 22 | 134 | 146 | 370 | 20 | 650 |

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|-----------------|---|----------------------------|----------------------------|------------------------------|--------------------------------|-----------------------------|----------------------------------|--------------------|--|-------------------------------|
| Credits | -- | -- | -- | 12 | 4 | 2 | 4 | - | -- | -- |
| Cumu. Sum | 08 | 16 | 13 | 31 | 4 | 8 | 8 | 10 | 02 | 06 |

PROGRESSIVETOTALCREDITS:84+22=106

| | | | | | | |
|---------------------|------------------------------------|-------------------------|---|-----------------|---------|----------------------------------|
| | | | | June, 2026 | 1.00 | Applicable For AY2025-26 Onwards |
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Scheme of Instructions: Third Year B. Tech. in Aeronautical Engineering (As Per NEW NEP 2020)

Semester-VI

| S N. | Sem | Type | BoS/ Dept | Sub Code | Subject | T/P | Contact Hours | | | Credits | % Weightage | | | ESE Duration | Total Marks |
|--------------|-----|------|-----------|-------------|---------------------------------------|-----|---------------|-----------|-----------|-----------|-------------|------------|------------|--------------|-------------|
| | | | | | | | L | P | Hrs | | CT/IA | CA | ESE | | |
| 1 | VI | PCC | AE | BAE43601 | Aircraft Structures | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 2 | VI | PCC | AE | BAE43602 | Rocket Propulsion | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 3 | VI | CEP | AE | BAE43603 | Mini Project | P | | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 4 | VI | PCC | AE | BAE43604 | Aircraft Structure Lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 5 | VI | PCC | AE | BAE43605 | Rocket Propulsion Lab | P | - | 2 | 2 | 1 | - | 25 | 25 | 2 | 50 |
| 6 | VI | VSEC | AE | BAE43606 | Additive Manufacturing (Idea) Lab | P | - | 4 | 4 | 2 | - | 50 | 50 | 3 | 100 |
| 8 | VI | PEC | AE | BAE43607-09 | Program Elective-II | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 7 | VI | PEC | AE | BAE43610-12 | Program Elective-III | T | 4 | - | 4 | 4 | 30 | 10 | 60 | 3 | 100 |
| 9 | VI | MDM | IT | BIT436__ | Artificial Intelligence for Engineers | T | 2 | - | 2 | 2 | 14 | 06 | 30 | 2 | 50 |
| Total | | | | | | | 18 | 10 | 28 | 23 | 134 | 171 | 395 | 23 | 700 |

| Course Category | HSSM (Humanities Social Science & Management) | BSC (Basic Science Course) | ESC (Engg. Science Course) | PCC (Programme Core Courses) | PEC (Program Elective Courses) | OEC (Open Elective Courses) | MDM (Multi-disciplinary Courses) | SEC (Skill Course) | ELC/FP/CEP (Experiential Learning Courses) | CC (Liberal Learning Courses) |
|-----------------|---|----------------------------|----------------------------|------------------------------|--------------------------------|-----------------------------|----------------------------------|--------------------|--|-------------------------------|
| Credits | -- | -- | -- | 10 | 8 | -- | 02 | 02 | 01 | -- |
| Cumu. Sum | 08 | 16 | 13 | 41 | 12 | 08 | 10 | 12 | 03 | 06 |

PROGRESSIVE TOTAL CREDITS:106+23=129

| | | | | | | |
|---------------------|------------------------------------|-------------------------|------------------------------------|-----------------|---------|----------------------------------|
| | | | | June, 2026 | 1.00 | Applicable For AY2025-26 Onwards |
| Chairperson Head | Director Academics/ Vice Principal | Director Administration | Principal Dr. Premanand Naktode | Date of Release | Version | |

Principal
TGPCET, Nagpur

Director Academics
Tulsiramji Gaikwad-Patil
College Of Engineering
And Technology, Nagpur



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SCHEMEOFINSTRUCTION& SYLLABI

Programme: B. Tech **Aeronautical Engineering**



Scheme of Instructions: Fourth Year B. Tech. in Aeronautical Engineering (As Per NEW NEP 2020)

Semester-VII

| S N. | Sem | Type | BoS/ Dept | Sub Code | Subject | T/P | Contact Hours | | | Credits | % Weightage | | | ESE Duration Hrs | Total Marks |
|--------------|-----|------|-----------|-------------|------------------------|-----|---------------|----------|-----------|-----------|-------------|------------|------------|------------------|-------------|
| | | | | | | | L | P | Hrs | | CT/IA | CA | ESE | | |
| 1 | VII | PCC | AE | BAE44701 | Flight Mechanics | T | 3 | - | 3 | 3 | 30 | 10 | 60 | 3 | 100 |
| 2 | VII | PCC | AE | BAE44702 | Aircraft Design | T | 3 | - | 3 | 3 | 30 | 10 | 60 | 3 | 100 |
| 6 | VII | PROJ | AE | BAE44703 | Project Work | P | - | 03 | 03 | 3 | - | 50 | 50 | 2 | 100 |
| 3 | VII | PEC | AE | BAE44704-06 | Program Elective-IV | T | 3 | - | 3 | 4 | 30 | 10 | 60 | 3 | 100 |
| 4 | VII | PEC | AE | BAE44707-09 | Program Elective- V | T | 3 | - | 3 | 4 | 30 | 10 | 60 | 3 | 100 |
| 5 | VII | MDM | EC | BEC447__ | Internet of Things | T | 3 | - | 3 | 3 | 30 | 10 | 60 | 3 | 100 |
| 6 | VII | MDM | EC | BEC447__ | Internet of Things Lab | P | | 2 | 2 | 1 | | 25 | 25 | 2 | 50 |
| Total | | | | | | | 15 | 5 | 20 | 21 | 150 | 125 | 400 | 19 | 650 |

| Course Category | HSSM (Humanities Social Science & Management) | BSC (Basic Science Course) | ESC (Engg. Science Course) | PCC (Programme Core Courses) | PEC (Program Elective Courses) | OEC (Open Elective Courses) | MDM (Multi-disciplinary Courses) | SEC (Skill Course) | ELC/FP/CEP (Experiential Learning Courses) | CC (Liberal Learning Courses) |
|-----------------|---|----------------------------|----------------------------|------------------------------|--------------------------------|-----------------------------|----------------------------------|--------------------|--|-------------------------------|
| Credits | -- | -- | -- | 06 | 08 | -- | 04 | -- | 03 | -- |
| Cumu. Sum | 08 | 16 | 13 | 47 | 20 | 08 | 14 | 12 | 06 | 06 |

PROGRESSIVE TOTAL CREDITS:128+22=150

| | | | | | | |
|---------------------|------------------------------------|-------------------------|------------------------------------|-----------------|---------|----------------------------------|
| | | | | June, 2026 | 1.00 | Applicable For AY2025-26 Onwards |
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Scheme of Instructions: Fourth Year B. Tech. in Aeronautical Engineering (As Per NEW NEP 2020)

Semester-VIII

| S N. | Sem | Type | BoS/Dept | Sub Code | Subject | T/P | Contact Hours | | | Credits | % Weightage | | | ESE Duration | Total Marks |
|--------------|-----|------|----------|----------|----------------------|-----|---------------|-----------|-----------|-----------|-------------|------------|------------|--------------|-------------|
| | | | | | | | L | P | Hrs | | CT/IA | CA | ESE | | |
| 1 | VII | RM | AE | BAE44801 | Research Methodology | T | 4 | - | 4 | 4 | - | 25 | 75 | 3 | 100 |
| 2 | VII | CEP | AE | BAE44802 | Internship | P | - | 24 | 24 | 12 | - | 150 | 150 | 3 | 300 |
| Total | | | | | | | 4 | 24 | 28 | 16 | - | 175 | 225 | 6 | 400 |

Note- The student going to On Job Training in 8th semester will be doing two MOOC courses through the SWAYAM Portal along with On Job Training*. These courses can be completed in 3rd year, and the credit will be considered in the 4th year.

| Course Category | HSSM (Humanities Social Science & Management) | BSC (Basic Science Course) | ESC (Engg. Science Course) | PCC (Programme Core Courses) | PEC (Program Elective Courses) | OEC (Open Elective Courses) | MDM (Multi-disciplinary Courses) | SEC (Skill Course) | ELC/FP/CEP (Experiential Learning Courses) | CC (Liberal Learning Courses) |
|-----------------|---|----------------------------|----------------------------|------------------------------|--------------------------------|-----------------------------|----------------------------------|--------------------|--|-------------------------------|
| Credits | -- | -- | -- | - | 04 | -- | -- | -- | 12 | -- |
| Cumu. Sum | 08 | 16 | 13 | 47 | 24 | 08 | 14 | 12 | 18 | 06 |

PROGRESSIVE TOTAL CREDITS:150+16=166

| | | | | | | |
|---|--|-------------------------|---|-----------------|---------|----------------------------------|
| | | | | June, 2026 | 1.00 | Applicable For AY2025-26 Onwards |
| Chairperson Head Aeronautical Engineering TGPCET, Nagpur | Director Academics/ Vice Principal Tulsiramji Gaikwad-Patil College Of Engineering And Technology, Nagpur | Director Administration | Principal Dr. Premanand Naktode Principal TGPCET, Nagpur | Date of Release | Version | |



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SCHEME OF INSTRUCTION & SYLLABI

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Programme: Aeronautical Engineering

List of **Program Electives** offered by Aeronautical Engineering Department (NBA Accredited if applicable)

| Program Elective- I | Program Elective-II | Program Elective- III | Program Elective- IV | Program Elective- V |
|---|--|---|---|---|
| Semester V | Semester VI | Semester VI | Semester VII | Semester VII |
| BAE43507 Aircraft Systems & Instruments | BAE43607 Aircraft Maintenance & Repair | BAE43610 Drone Technology | BAE44704 Aviation Management | BAE44707 Unmanned Aerial Vehicles & Systems |
| BAE43508 Space Technology | BAE43608 Helicopter Engineering | BAE43611 Boundary Layer Theory | BAE44705 Rockets and Missiles | BAE44708 High Speed Aerodynamics |
| BAE44509 Mechanics of Machines | BAE43609 Composite Materials & NDT | BAE43612 Finite Element Methods | BAE44706 Computational Fluid Dynamics | BAE44709 Vibrations and Aero elasticity |

Programme: Aeronautical Engineering

List of **Open Electives** offered by Aeronautical Engineering Department (NBA Accredited if applicable)

| Open Elective-I | Open Elective-II | Open Elective-III |
|--|---------------------------|--|
| Semester-III | Semester-IV | Semester-V |
| BAE42307: Introduction to Aerospace Engineering | BAE42406: Avionics | BAE43506: Unmanned Aerial Systems |

| | | | | | | |
|---|---|----------------------------|---|-----------------|---------|-------------------------------------|
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Programme: B. Tech **Aeronautical Engineering**



| Course Category | HSSM (Humanities Social Science & Manag.) | BSC (Basic Science Course) | ESC (Engineering Science Course.) | PCC (Programme Core Courses) | PEC (Programme Elective Courses) | OEC (Open Elective Courses) | MDM (Multi-disciplinary Course) | SEC (Skill Course) | ELC/FP/CEP Experiential Learning Courses) | CC (Liberal Learning Courses) | Semester Wise Credits |
|-----------------|---|----------------------------|-----------------------------------|------------------------------|----------------------------------|-----------------------------|---------------------------------|--------------------|---|-------------------------------|-----------------------|
| Semester-I | 02 | 08 | 06 | -- | -- | -- | -- | 02 | -- | 02 | 20 |
| Semester-II | 02 | 08 | 07 | 02 | -- | -- | -- | 02 | -- | 02 | 23 |
| Semester-III | 2 | -- | -- | 08 | -- | 4 | 2 | 02 | 2 | 01 | 21 |
| Semester-IV | 2 | -- | -- | 09 | -- | 2 | 2 | 4 | -- | 01 | 20 |
| Semester-V | -- | -- | -- | 12 | 4 | 2 | 4 | - | -- | -- | 22 |
| Semester-VI | -- | -- | -- | 10 | 8 | -- | 02 | 02 | 01 | -- | 23 |
| Semester-VII | -- | -- | -- | 06 | 08 | -- | 04 | -- | 03 | -- | 21 |
| Semester-VIII | -- | -- | -- | - | 04 | -- | -- | -- | 12 | -- | 16 |
| Cumu. Sum | 8 | 16 | 13 | 47 | 24 | 8 | 14 | 12 | 18 | 6 | 166 |

| | | | | | | |
|---------------------|---------------------------------------|-------------------------|------------------------------------|-----------------|---------|----------------------------------|
| | | | | June, 2026 | 1.00 | Applicable For AY2025-26 Onwards |
| Chairperson Head | Director Academics/ Vice Principal | Director Administration | Principal Dr. Premanand Naktode | Date of Release | Version | |

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