Rashtreeya Sikshana Samithi Trust R.V COLLEGE OF ENGINEERING, BENGALURU-560059

(Autonomous Institution affiliated to VTU, Belagavi)



B.E-AEROSPACE ENGINEERING I -VIII Semester 2016 Scheme

| | | R V College (Autonomous I | of Engineerin Institution Affi | 0, 0 | | | | |
|-----|------------------------------|--|-----------------------------------|----------|----------|-----------|---------|---------|
| | | First Semester (| | , | 0 | ycle | | |
| | | (COMM | ION TO ALI | L PROGRA | MS) | | | |
| SI. | Course Code Course Title Ros | | | | | | | |
| No. | Course Coue | Course The | D02 | Lecture | Tutorial | Practical | SS (EL) | Credits |
| 1 | 16MA11 | Applied Mathematics-I | Maths | 3 | 1 | 0 | 1 | 5 |
| 2 | 16PH12 | Engineering Physics (Theory and Practice) | Physics | 4 | 0 | 1 | 0 | 5 |
| 3 | 16CV13 | Elements of Civil Engineering | CV | 4 | 1 | 0 | 0 | 5 |
| 4 | 16ME14 | Computer Aided Engineering Drawing (Theory and Practice) | ME | 1 | 0 | 2 | 0 | 3 |
| 5 | 16EE15 | Elements of Electrical Engineering | EE | 4 | 0 | 0 | 1 | 5 |
| 6 | 16HSC16 | Constitution of India and Legal Studies for Engineers | HSS | 2 | 0 | 0 | 0 | 2 |
| 7 | 16HSK17* | Kannada | HSS | 1 | 0 | 0 | 0 | 0 |
| | | Total No. of Credits | | | | | | 25 |
| | | No. of Hrs. | | 19 | 04 | 06 | 08** | 29 |

*Mandatory Audit Course 1 Hr per Week

****Non Contact Hours**

| | | R V College (Autonomous I First Semester Cr | | iated to VTU, | Belagavi) | Cvcle | | |
|-----|-------------|--|-----------|---------------|-----------|-----------|---------|---------|
| | | | ON TO ALL | | U | ejele | | |
| Sl. | Course Code | Correct Title | D C | | Credit A | llocation | | Total |
| No. | Course Code | Course Title | BoS | Lecture | Tutorial | Practical | SS (EL) | Credits |
| 1 | 16MA11 | Applied Mathematics-I | Maths | 3 | 1 | 0 | 1 | 5 |
| 2 | 16CH12 | Engineering Chemistry (Theory and Practice) | Chemistry | 4 | 0 | 1 | 0 | 5 |
| 3 | 16CS13 | Programming in C (Theory and Practice) | CS | 4 | 0 | 1 | 0 | 5 |
| 4 | 16EC14 | Basics of Electronic Engineering | ECE | 4 | 0 | 0 | 1 | 5 |
| 5 | 16ME15 | Basics of Mechanical Engineering (Theory and Practice) | ME | 4 | 0 | 1 | 0 | 5 |
| 6 | 16HSE16* | Professional Practice-I (Communicative English) | HSS | 2 | 0 | 0 | 0 | 0 |
| | | Total No. of Credits | | | | | | 25 |
| | | No. of Hrs. | | 21 | 02 | 06 | 08** | 29 |

*Mandatory Audit Course 1 Hr per Week

****Non Contact Hours**

1Hr. Theory=1 Credit

2Hrs. Practical=1 Credit

2Hrs. Tutorial=1 Credit

4Hrs. SS(EL)=1 Credit

| | | (Autonomous I | Institution Affi | liated to VTU | , Belagavi) | | | |
|-----|-------------|--|------------------|---------------|-------------|-----------|---------|---------|
| | | Second Semester | Credit Sc | heme for | Physics (| Cycle | | |
| | | (COM | MON TO ALI | PROGRAM | S) | | | |
| SI. | Course Code | | D G | | Credit A | llocation | | Total |
| No. | Course Code | Course Title | BoS | Lecture | Tutorial | Practical | SS (EL) | Credits |
| 1 | 16MA21 | Applied Mathematics-II | Maths | 3 | 1 | 0 | 1 | 5 |
| 2 | 16PH22 | Engineering Physics (Theory and Practice) | Physics | 4 | 0 | 1 | 0 | 5 |
| 3 | 16CV23 | Elements of Civil Engineering | CV | 4 | 1 | 0 | 0 | 5 |
| 4 | 16ME24 | Computer Aided Engineering Drawing (Theory and Practice) | ME | 1 | 0 | 2 | 0 | 3 |
| 5 | 16EE25 | Elements of Electrical Engineering | EE | 4 | 0 | 0 | 1 | 5 |
| 6 | 16HSC26 | Constitution of India and Legal Studies for Engineers | HSS | 2 | 0 | 0 | 0 | 2 |
| 7 | 16HSK27* | Kannada* | HSS | 1 | 0 | 0 | 0 | 0 |
| | | Total No. of Credits | | | | | | 25 |
| | | No. of Hrs. | | 19 | 04 | 06 | 08** | 29 |

R V College of Engineering, Bengaluru-560059

*Mandatory Audit Course 1 Hr per Week

****Non Contact Hours**

| | | R V College (Autonomous I Second Semester C | | iated to VTU, | Belagavi) | v Cvcle | | |
|-----|-------------|--|-----------|---------------|-----------|-----------|---------|---------|
| | | (COMM | ON TO ALL | PROGRA | MS) | <i>v</i> | | |
| Sl. | | Correct Title | D G | | Credit A | llocation | | Total |
| No. | Course Code | Course Title | BoS | Lecture | Tutorial | Practical | SS (EL) | Credits |
| 1 | 16MA21 | Applied Mathematics-II | Maths | 3 | 1 | 0 | 1 | 5 |
| 2 | 16CH22 | Engineering Chemistry (Theory and Practice) | Chemistry | 4 | 0 | 1 | 0 | 5 |
| 3 | 16CS23 | Programming in C (Theory and Practice) | CS | 4 | 0 | 1 | 0 | 5 |
| 4 | 16EC24 | Basics of Electronic Engineering | ECE | 4 | 0 | 0 | 1 | 5 |
| 5 | 16ME25 | Basics of Mechanical Engineering (Theory and Practice) | ME | 4 | 0 | 1 | 0 | 5 |
| 6 | 16HSE26* | Professional Practice-I (Communicative English) | HSS | 2 | 0 | 0 | 0 | 0 |
| | | Total No. of Credits | | | | | | 25 |
| | | No. of Hrs. | | 21 | 02 | 06 | 08** | 29 |

*Mandatory Audit Course 1 Hr per Week

****Non Contact Hours**

1Hr. Theory=1 Credit

2Hrs. Practical=1 Credit

2Hrs. Tutorial=1 Credit

4Hrs. SS(EL)=1 Credit

| | | (Autonomous I | | liated to VTU, | , Belagavi) | | | |
|-----|-------------|--|-----------|----------------|-------------|-----------|---------|---------|
| | 1 | Third S | emester (| Credit Sch | leme | | | |
| Sl. | Course Code | se Code Course Title | DeC | | Credit A | llocation | | Total |
| No. | Course Code | Course The | BoS | Lecture | Tutorial | Practical | SS (EL) | Credits |
| 1 | 16MA31C | Applied Mathematics-III | Maths | 3 | 1 | 0 | 0 | 4 |
| 2 | 16EM32 | Engineering Materials # | ME | 2 | 0 | 0 | 0 | 2 |
| 3 | 16AS33 | Introduction to Aerospace Engineering | AS | 3 | 0 | 0 | 1 | 4 |
| 4 | 16AS34 | Thermodynamics | AS | 3 | 0 | 1 | 1 | 5 |
| 5 | 16AS35 | Mechanics of Fluids | AS | 4 | 0 | 1 | 0 | 5 |
| 6 | 16AS36 | Structural Mechanics | AS | 3 | 0 | 1 | 1 | 5 |
| 7 | 16DMA37 | Bridge Course Mathematics-I* | Maths | 2 | 0 | 0 | 0 | 0 |
| | | Total No. of Credits | | 20 | 1 | 3 | 3 | 25 |
| | | No. of Hrs. | | 18+2* | 2 | 6 | 12** | 40 |

*Mandatory Audit course for lateral entry diploma students

**Non contact hours

ME/IM/AS Common

1Hr. Theory= 1 credit

2Hrs. Practical=1credit

2Hrs. Tutorial=1 credit

4Hrs. SS(EL) = 1 Credit

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| | | (Autonomous I Fourth S | | iliated to VTU, Credit Scł | | | | |
| S1. | | | | | Credit All | ocation | | Total |
| No | Course Code | Course Title | BOS | Lecture | Tutorial | Practical | SS (EL) | Credits |
| 1 | 16MA41C | Applied Mathematics IV | Maths | 3 | 1 | 0 | 0 | 4 |
| 2 | 16ET42 | Environmental Technology [#] | BT | 2 | 0 | 0 | 0 | 2 |
| 3 | 16AS43 | Aerodynamics (Theory & Practice) | AS | 3 | 0 | 1 | 0 | 4 |
| 4 | 16AS44 | Aerospace Structures (Theory & Practice) | AS | 3 | 0 | 1 | 1 | 5 |
| 5 | 16AS45 | Kinematics and Dynamics of Machines | AS | 3 | 0 | 0 | 1 | 4 |
| 6 | 16AS46 | Manufacturing Technology (Theory & Practice) | AS | 3 | 0 | 1 | 1 | 5 |
| 7 | 16HSE47 | Professional Practice-II | HSS | 0 | 0 | 0 | 0 | 1 |
| 8 | 16DCS47 | Bridge Course in C Programming ** | CSE | 2 | 0 | 0 | 0 | 0 |
| | | Total No. of Credits | | 17 | 1 | 3 | 3 | 25 |
| | | No. Of Hrs. | | 17+2* | 2 | 6 | 12** | 41 |

*Mandatory Audit course for lateral entry diploma students **Non contact hours \$ 3 days (18 Hrs) in 3RD semester and 3 days (18 Hrs) in 4th semester, in the event of student not able to take the regular allotment, may have to complete this credit by attending other branch program.

[#] BT, CV, CH, Chemistry will handle classes

1Hr. Theory= 1 credit

2Hrs. Practical=1credit

2Hrs. Tutorial=1 credit

4Hrs. SS(EL) = 1 Credit

| | R V College of Engineering, Bengaluru-560059 (Autonomous Institution Affiliated to VTU, Belagavi) | | | | | | | | | | | | |
|-----|--|---|-----|---------|-----------|-----------|---------|---------|--|--|--|--|--|
| | Fifth Semester Credit Scheme | | | | | | | | | | | | |
| Sl. | | C | DOG | | Credit Al | location | | Total | | | | | |
| No | Course Code | Course Title | BOS | Lecture | Tutorial | Practical | SS (EL) | Credits | | | | | |
| 1 | 16HSI51 | IPR & Entrepreneurship | HSS | 3 | 0 | 0 | 0 | 3 | | | | | |
| 2 | 16AS52 | Flight Mechanics (Theory & Practice) | AS | 3 | 0 | 1 | 1 | 5 | | | | | |
| 3 | 16AS53 | Gas Dynamics (Theory & Practice) | AS | 3 | 0 | 1 | 0 | 4 | | | | | |
| 4 | 16AS54 | Mechanics of composite structures | AS | 3 | 0 | 0 | 1 | 4 | | | | | |
| 5 | 16AS55 | Finite Element Methods | AS | 3 | 0 | 1 | 0 | 4 | | | | | |
| 6 | 16AS5AX | Elective A (PE) | AS | 3 | 0 | 0 | 1 | 4 | | | | | |
| 7 | 16GB5XX | Elective B (OE) | AS | 4 | 0 | 0 | 0 | 4 | | | | | |
| | | Total No. of Credits | | 22 | 0 | 3 | 3 | 28 | | | | | |
| | | No. Of Hrs. | | 22 | 0 | 6 | 12** | 40 | | | | | |

**Non contact hours

| Elective A (PE) | | Elective | e B (OE) | |
|-----------------|---|----------|---------------------|--|
| 16AS5A1 | Experimental Aerodynamics | | | |
| 16AS5A2 | Fatigue & Fracture Mechanics | 16GB5XX | Basics of Aerospace | |
| 16AS5A3 | Aerospace Reliability and Quality Control | IUOBJAA | Engineering | |
| 16AS5A4 | Numerical Methods | | | |

| | e | 0 | 0, 0 | | | | |
|--|--|---|---|--|--|---|---|
| | Sixth S | emester (| Credit Scl | | | | |
| Course Code | Course Title | BOS | Lecture | Tutorial | | cal SS (EL) | Total Credits |
| 16HEM61 | Foundations of Management Economics | & HSS | 2 | 0 | 0 | 0 | 2 |
| 16AS62 | Aerospace Propulsion (Theory & Practice) | AS | 3 | 0 | 1 | 0 | 4 |
| 16AS63 | Vibration Engineering (Theory & Practice) | AS | 3 | 0 | 1 | 1 | 5 |
| 16AS64 | Aircraft Instrumentation (Theory & Practice) | AS | 3 | 0 | 1 | 1 | 5 |
| 5 16AS6CX Elective C (PE) AS | | 3 | 0 | 0 | 1 | 4 | |
| 16AS6DX | Elective D (PE) | AS | 4 | 0 | 0 | 0 | 4 |
| 16GE6XX | Elective E(O E) | | 3 | 0 | 0 | 0 | 3 |
| 16HSE68 | Professional Practice-III (Employability Skills and Professional Development o Engineers)\$\$ | f HSS | 1 | 0 | 0 | 0 | 1 |
| | Total No. of Credits | | 22 | 0 | 3 | 3 | 28 |
| | No. Of Hrs. | | 22 | 0 | 6 | 12** | 40 |
| | | | | | | | |
| ve C E) | Elective 1 itle | (PE) | E | lective 1 itle | | (OE) | Elective Title |
| 16AS6C1Computational Fluid Dynamics16AS6C2Cryogenics | | 16AS6D1 16AS6D2 | Experimenta | l Stress Analys | | | A. C. |
| 6AS6C3 Hydraulics and Pneumatics | | 16AS6D3 | | | ics | 16GE6XX | Aircraft Systems |
| | Ű, | | | 0 | ər | | Systems |
| | 16HEM61 $16AS62$ $16AS63$ $16AS64$ $16AS6CX$ $16AS6DX$ $16GE6XX$ $16HSE68$ $s (18 Hrs) in 5th second$ | (Autonomous 1)Sixth SCourse CodeCourse Title $16HEM61$ Foundations of Management Economics $16AS62$ Aerospace Propulsion (Theory & Practice) $16AS63$ Vibration Engineering (Theory & Practice) $16AS63$ Vibration Engineering (Theory & Practice) $16AS64$ Aircraft Instrumentation (Theory & Practice) $16AS64$ Elective C (PE) $16AS60X$ Elective D (PE) $16AS6DX$ Elective E(O E) $16AS60X$ Elective E(O E) $16AS60X$ Elective E(O E) $16AS60X$ Elective I(O E) $16BE68$ Professional Practice-III (Employability Skills and Professional Development o Engineers)\$\$ $16HSE68$ No. Of Hrs.s (18 Hrs) in 5 th semester and 3 days (18 Hrs) in 6 th /e CElective Title 0 Elective Title 0 Sold Cryogenics $5C1$ Computational Fluid Dynamics $5C2$ Cryogenics $5C3$ Hydraulics and Pneumatics $5C4$ Advanced Material Technology | (Autonomous Institution Aff Sixth Semester (Course CodeCourse TitleBOS $16HEM61$ Foundations of Management & EconomicsHSS $16AS62$ Aerospace Propulsion (Theory & Practice)AS $16AS63$ Vibration Engineering (Theory & Practice)AS $16AS63$ Vibration Engineering (Theory & Practice)AS $16AS64$ Aircraft Instrumentation (Theory & Practice)AS $16AS64$ Elective C (PE)AS $16AS6DX$ Elective D (PE)AS $16AS6DX$ Elective E(O E)AS $16AS6BX$ Elective E(O E)HSS $16HSE68$ Professional Practice-III (Employability Skills and Professional Development of Engineers)\$\$HSS $16HSE68$ No. Of Hrs.HSS s (18 Hrs) in 5 th semester and 3 days (18 Hrs) in 6 th semester **N re CElective TitleElective D (PE) $5C1$ Computational Fluid Dynamics $16AS6D1$ $5C2$ Cryogenics $16AS6D3$ $5C4$ Advanced Material Technology $16AS6D4$ | (Autonomous Institution Affiliated to VTU Sixth Semester Credit SciCourse CodeCourse TitleBOSLecture16HEM61Foundations of Management & EconomicsHSS216AS62Aerospace Propulsion (Theory & Practice)AS316AS63Vibration Engineering (Theory & Practice)AS316AS63Vibration Engineering (Theory & Practice)AS316AS64Aircraft Instrumentation (Theory & Practice)AS316AS64Elective C (PE)AS316AS6DXElective D (PE)AS416GE6XXElective E(O E)3316HSE68Professional Practice-III (Employability Skills and Professional Development of Engineers)\$\$HSS116HSE68No. Of Hrs.22xNo. Of Hrs.22xItal No. of Credits22xElective TitleElective DxElective TitleElective DxComputational Fluid Dynamics16AS6D13Hydraulics and Pneumatics16AS6D3Fundamenta3Advanced Material Technology16AS6D4Spacecraft D | Course CodeCourse TitleBOSLectureTutorial $16HEM61$ Foundations of Management & EconomicsHSS20 $16AS62$ Aerospace Propulsion (Theory & Practice)AS30 $16AS63$ Vibration Engineering (Theory & Practice)AS30 $16AS64$ Aircraft Instrumentation (Theory & Practice)AS30 $16AS64$ Aircraft Instrumentation (Theory & Practice)AS30 $16AS64$ Elective C (PE)AS30 $16AS6DX$ Elective D (PE)AS30 $16AS6DX$ Elective E(O E)30 $16AS6BX$ Elective E(O E)30 $16AS68$ Professional Practice-III (Employability Skills and Professional Development of Engineers)\$\$HSS1 $16HSE68$ Professional Development of Engineers)\$\$HSS10 s (18 Hrs) in 5 th semester and 3 days (18 Hrs) in 6 th semester **Non contact hoursVIEVE TitleVIEVE Title C Elective TitleElective D (PE)Elective TitleElective Title C Computational Fluid Dynamics16AS6D1Boundary Layer Theory $5C1$ Computational Fluid Dynamics16AS6D3Fundamentals of Astrophys $5C4$ Advanced Material Technology16AS6D4Spacecraft Design | (Autonomous Institution Affiliated to VTU, Belagavi)Sixth Semester Credit SchemeCourse CodeCourse TitleBOSCredit Allocation16HEM61Foundations of Management & EconomicsHSS20016AS62Aerospace Propulsion (Theory & Practice)AS30116AS63(Theory & Practice)AS30116AS64Aircraft Instrumentation (Theory & Practice)AS30116AS64Elective C (PE)AS30016AS60XElective D (PE)AS30016AS60XElective D (PE)AS30016AS60XElective B (O E)30016AS60XElective B (O E)30016AS61Professional Practice-III (Employability Skills and Professional Development of Engineers)SHSS1016HSE68(Employability Skills and Professional Development of Engineers)SHSS10016HSE68(Employability Skills and Professional Development of Engineers)SHSS10016HSE68(BHrs) in 5 th semester and 3 days (18 Hrs) in 6 th semester **Non contact hours66s (18 Hrs) in 5 th semester and 3 days (18 Hrs) in 6 th semester **Non contact hours55re CElective Title(PE)Elective Title5(C)Computational Fluid Dynamics16AS6D1Boundary Layer TheoryG | (Autonomous Institution Affiliated to VTU, Belagavi)Sixth Semester Credit SchemeCourse CodeCourse TitleBOSCredit AllocationSS (EL)16HEM61Foundations of Management & EconomicsHSS20016AS62Aerospace Propulsion (Theory & Practice)AS301016AS63Vibration Engineering (Theory & Practice)AS301116AS64Aircraft Instrumentation (Theory & Practice)AS301116AS64Chevry & Practice)AS301116AS64Chevry & Practice)AS301116AS64Elective C (PE)AS300116AS60XElective D (PE)AS300016GE6XXElective E(O E)300016HS68Professional Practice-III (Employability Skills and Professional Drevelopment of Engineers)S\$HSS10016HS68Professional Orcedits220331No. of Hrs.220612**s (18 Hrs) in 5 th semester and 3 days (18 Hrs) in 6 th semester **Non contact hoursElective E (OE)(OE)5C1Computational Fluid Dynamics16AS6D1Boundary Layer TheoryElective E (OE)5C2Cryogenics16AS6D4Spacecraft Design16GE6XX6C3Hydraulics and Pneumatics16AS |

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|-----|-------------|------------------------------|---------|-------------------------------------|-------------|-----------|------------|---------|
| | | Seventh | Semeste | er Credit S | Scheme | | | |
| Sl. | | | | | Credit Alle | ocation | | Total |
| No | Course Code | Course Title | BOS | Lecture | Tutorial | Practical | SS (EL) | Credits |
| 1 | 16AS71 | Control Engineering | AS | 3 | 0 | 0 | 0 | 3 |
| 2 | 16AS72 | Aircraft Stability & control | AS | 3 | 0 | 0 | 0 | 3 |
| 3 | 16AS73 | Avionics | AS | 3 | 0 | 1 | 0 | 4 |
| 4 | 16AS74 | Mini Project | AS | 3 | 0 | 0 | 0 | 3 |
| 5 | 16AS7FX | Elective F (PE) | AS | 4 | 0 | 0 | 0 | 4 |
| 6 | 16AS7GX | Elective G(PE) | AS | 4 | 0 | 0 | 0 | 4 |
| 7 | 16GH7XX | Elective H (OE) | AS | 3 | 0 | 0 | 0 | 3 |
| | | Total No. of Credits | | 23 | 0 | 1 | 0 | 24 |
| | | No. Of Hrs. | | 23 | 0 | 2 | 0 | 25 |

* EI, EE, CV, EC, ME – 6 hrs. / week Minor Project.

| Elective F (PE) | Elective Title | Elective | Elective Title | Elective H (OE) | Elective Title |
|-----------------|----------------------------|----------|--------------------------|-----------------|----------------|
| | | G(PE) | | | |
| 16AS7F1 | Missile Aerodynamics | 16AS7G1 | Hypersonic Aerodynamics | | |
| 16AS7F2 | Operations Research | 16AS7G2 | Theory of Aeroelasticity | 16GH7XX | Unmanned Air |
| 16AS7F3 | Space Dynamics | 16AS7G3 | Helicopter Dynamics | 100Π/ΛΛ | Vehicles |
| 16AS7F4 | Smart Materials | 16AS7G4 | Flight Testing | | |
| | PE - PROFESSIONAL ELECTIVE | | OE- OTHE | CR ELECTIVES | |

| | R V College of Engineering, Bengaluru-560059 (Autonomous Institution Affiliated to VTU, Belagavi) Eighth Semester Credit Scheme | | | | | | | | | | | |
|-----|---|------------------------------|-----|---|---|----|---|----|--|--|--|--|
| Sl. | SI Credit Allocation T | | | | | | | | | | | |
| No. | Course Code | Course Title | BOS | BOS Lecture Tutorial Practical EL Credits | | | | | | | | |
| 1 | 16XXP81 | Major Project | | 0 | 0 | 16 | 0 | 16 | | | | |
| 2 | 16XXS82 | Technical Seminar | | 0 | 0 | 2 | 0 | 2 | | | | |
| 3 | 16HSS83 | Innovation and Social Skills | HSS | 0 | 0 | 2 | 0 | 2 | | | | |
| | | Total No. of Credits | | 0 | 0 | 20 | 0 | 20 | | | | |
| | No. Of Hrs. 0 0 40 0 40 | | | | | | | | | | | |