# ElastoDyn

This document lists the routines called in the ElastoDyn module

## ED\_Init

* NWTC\_Init
* DispNVD
* ED\_ReadInput
  + ReadPrimaryFile
  + ReadFurlFile
  + ReadBladeInputs
    - ReadBladeMeshFile
      * Alloc\_BladeMeshInputProperties
    - ReadBladeFile
      * Alloc\_BladeInputProperties
  + ReadTowerFile
    - Alloc\_TowerInputProperties
* ED\_ValidateInput
  + ValidatePrimaryData
  + ValidateFurlData
  + ValidateBladeData
    - ValidateModeShapeCoeffs
  + ValidateTowerData
    - ValidateModeShapeCoeffs
* ED\_SetParameters
  + SetPrimaryParameters
    - Init\_DOFparameters
      * SetEnabledDOFIndexArrays
    - SetOutParam
  + SetFurlParameters
  + SetBladeParameters
    - Alloc\_BladeParameters
  + SetTowerParameters
    - Alloc\_TowerParameters
  + SetOtherParameters
    - Coeff
      * SHP
* Init\_ContStates
  + InitBlDefl
* Init\_OtherStates
  + Alloc\_RtHS
  + Alloc\_CoordSys
* ED\_DestroyInputFile

## ED\_UpdateStates

* ED\_RK4
  + ED\_Input\_ExtrapInterp
  + ED\_CalcContStateDeriv
* ED\_AB4
  + ED\_Input\_ExtrapInterp
  + ED\_CalcContStateDeriv
  + ED\_CopyContState
  + ED\_RK4
* ED\_ABM4
  + ED\_CopyContState
  + ED\_AB4
  + ED\_Input\_ExtrapInterp
  + ED\_CalcContStateDeriv

## ED\_CalcContStateDeriv

* SetCoordSy
* CalculatePositions
* CalculateAngularPosVelAcc
* CalculateLinearVelAcc
* CalculateForcesMoments
* Teeter
  + UserTeet
* RFurling
  + UserRFrl
* TFurling
  + UserTFrl
* FillAugMat
* GaussElim

## ED\_CalcOutput

* ED\_CalcContStateDeriv (not actually called, yet)
* ED\_DestroyContState